



INTRODUCTION

Medicine can be a very rewarding career choice, but not for everyone. There are many kinds of medicine: planning and performing a complex surgical correction, diagnosing a child with a cough, and evaluating a tissue specimen are all very important but very different activities within health care. There are also many careers that fundamentally contribute to health care but do not involve contact with patients.

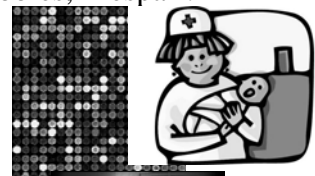
How can you decide what is right for you?

Many students are asking this question, and now is a perfect time to explore your interests, motivations, dreams, and possibilities. To help you with this introspection, we encourage you to ponder these questions about a possible career in medicine:

- What am I curious about? What do I wish I knew more about?
- How fast is the pace of my lifestyle? Is it too fast or too slow?
- Whom do I admire on a personal basis? On a professional basis?
- If I could change one thing about myself, what would that be?
- If I could change one thing about the world, what would that be?
- What things in my life are most frustrating? Most rewarding?

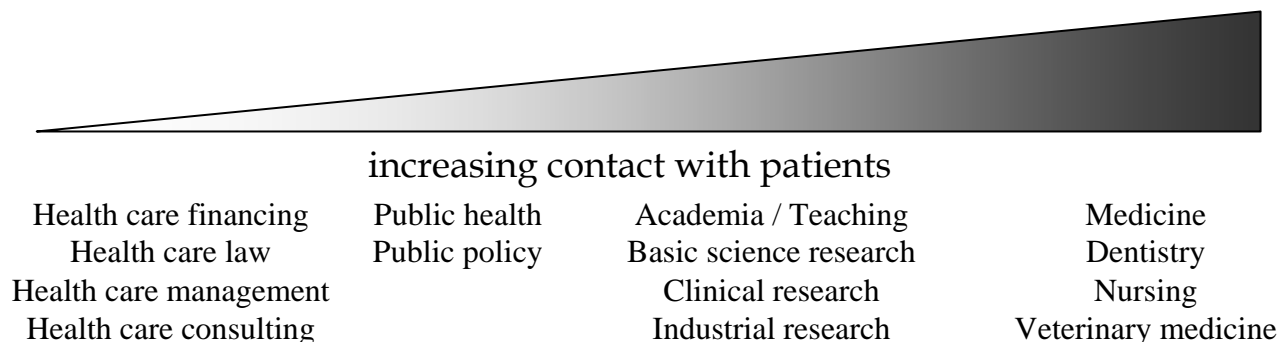
And more specifically related to health care:

- How do I interact with people? Do I want to spend most of my day with people who are ill? Am I more satisfied helping individuals one-on-one with close personal interaction or helping many people at once with less personal interaction?
- What do I know about medicine? Have I ever been in a clinical setting? Was it as a patient, an observer, a patient-advocate, or a healer?
- What does medical training mean for the next 10 years of my life? What will my lifestyle be?
- What kind of life do I envision outside of the hospital or the clinic? Have I talked to doctors about what their lives are like? How will being a doctor affect my (future) family, hobbies, lifespan?
- What healthcare-related careers might I be more excited about?
- Can I see myself...
 - ...designing novel pharmaceutical drugs against viral infection
 - ...pioneering tuberculosis screening / treatment in an underdeveloped country
 - ...defending patient rights in American managed-healthcare settings
 - ...exploring the neuronal biology of memory
 - ...teaching students developmental genetics
 - ...advising city planners on health risks of high-power lines
 - ...learning what genes are necessary for limb regeneration in newts



The examples above do not require medical school. When I say “I want to go to medical school”, what do I really want to do?

Here is a range of healthcare-related careers with varying degrees of personal interaction:



Note that even this generalization is not absolute. Some doctors spend most of the time characterizing histological sections, whereas some public health specialists have daily interactions with sick people.

All of these career possibilities are open to you. We are here to help you decide what you want to do and then help you get there. We encourage you to think about these questions as you talk to members of the Lowell Premedical Committee.

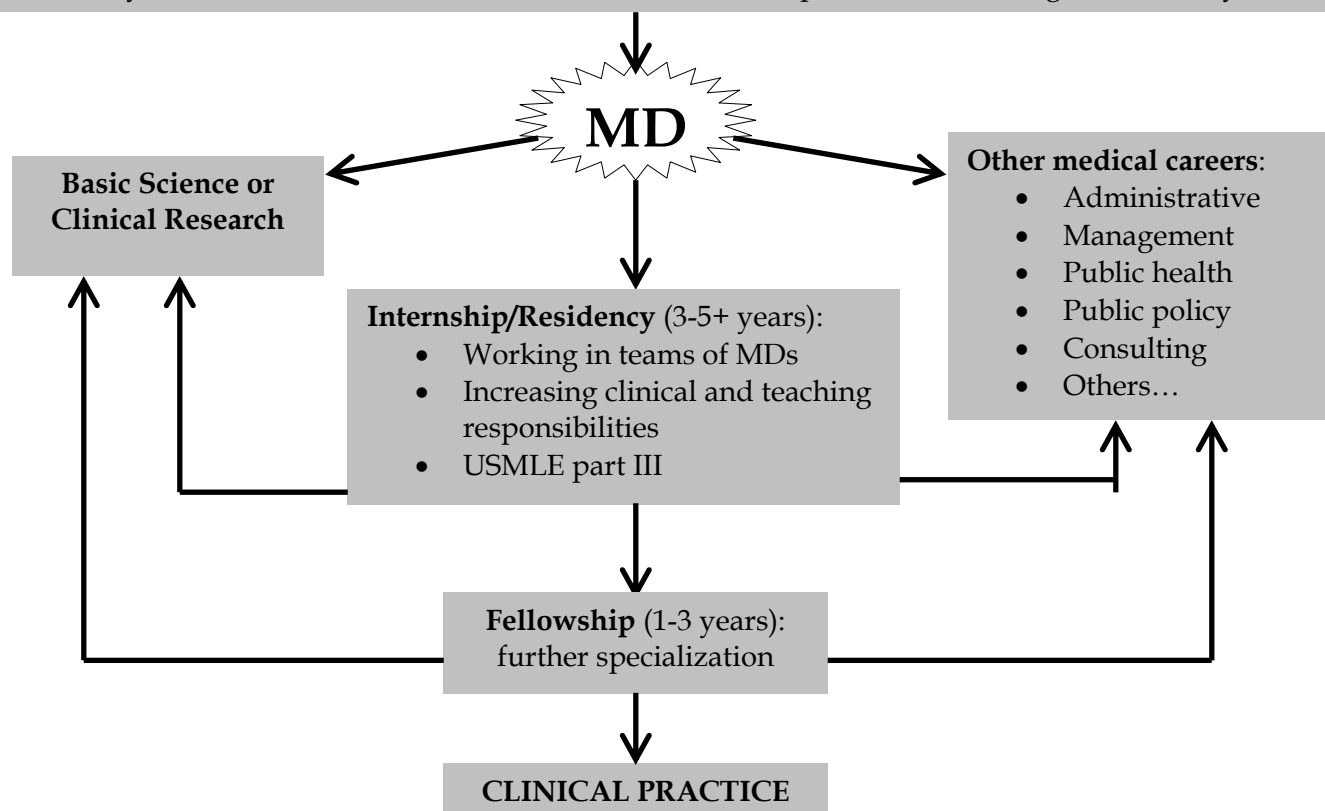
THE ROAD TO A MEDICAL CAREER IN THE US

College: 4 years

0-? Years between college and medical school (about 60% of Lowell premedical students)

Medical School: 4+ years

- ~ 2 years = preclinical: normal vs. abnormal function of the body, history/physical exam (*significant variation between medical schools here*); USMLE part I (“the boards”)
- ~ 1 year = clinical rotations: internal medicine, surgery, pediatrics, radiology, neurology, other electives, etc.
- ~ 1 year = additional elective clinical rotations, USMLE part II, interviewing for residency



COMPONENTS OF THE MEDICAL SCHOOL APPLICATION

When medical schools choose the students they want to train to become doctors, they look at a variety of criteria in making their decisions. What makes a good doctor? It is generally agreed that a good doctor has a solid academic foundation in the sciences and the humanities, is comfortable working with people of all different backgrounds, shows good judgment in various situations, and exhibits a high degree of professionalism which earns him/her the trust of patients and colleagues alike.

Medical school admissions committees choose applicants based on many factors that are manifest in the major areas listed below. Of course, no single factor will guarantee or prevent admission.

- Academic record
- MCAT scores
- Extracurricular activities
- Employment experiences
- Letters of recommendation
- Application essays
- Medical school interviews

Harvard Stats for 2002:

126 Undergrads applied (94% accepted)
(~27% non-science concentrators)
166 Alums applied (82% accepted)
(~45% non-science concentrators)
on average students applied to ~20 schools
mean GPA of accepted students: ~3.5

YOUR OWN PLAN: PREPARING FOR A POSSIBLE MEDICAL CAREER

Okay, so a career in medicine sounds like a real possibility for you. The next step is to construct a plan of study and activities that help you figure out whether medicine is the best career for you. There are many factors which will shape this plan, but careful and flexible planning will allow you to pursue fields which are very interesting to you while you also fulfill various requirements for entrance to medical school.

Besides thinking about the questions we raised in the introduction, you can get started immersing yourself in experiences which will help you answer these questions better. Here is a guide to your explorations in various areas which will also prepare you to apply to medical school.

Academic Experiences

Medical schools require entrants to complete certain basic prerequisites before entering, and some of these prerequisites must be done before applying to medical school. Together these courses—which encompass biology, chemistry, physics, math, and other areas – constitute about a year and a half of coursework; realistically (and optimally) they should be spread over two to five years, depending on your coursework and activities outside of your requirements. It's important to do well in these courses and to find out for yourself whether a science-based career is appealing to you. Most successful applicants have *at least* a B/B+ average in these and in other courses. However, a single bad grade won't by itself prevent you from getting into medical school.

Lee Ann Michelson, Ph.D., Health Careers Advisor at the Office of Career Services, has compiled a guide to courses at Harvard College which may be used to satisfy premedical requirements. This guide, "Premedical Course Requirements for Harvard Students," is available in booklet form at OCS (617-495-2595) or on the web at <http://www.ocs.fas.harvard.edu> This is an excellent overview of the many possibilities that exist and should be a starting point for you in designing a good plan of study. Read it carefully and bring any questions about your own plan to premedical tutors.

We would like to add the following points of advice:

- *Choose courses carefully – not too advanced, not too elementary.*
Use placement tests, SAT-II results, AP scores, and advice from tutors and professors to help you choose which level course is the most appropriate for you.
- *It's a bad idea to try to get all your premedical courses "out of the way" as soon as possible.*
The most successful students (science and non-science concentrators), have a curriculum balanced between premedical requirements, concentration requirements, and electives.
- *Fulfilling premedical requirements outside of Harvard is OK.*
While we don't advise undergraduates to fulfill more than two requirements this way because doing so may look like avoidance of the more challenging Harvard coursework, this is often the best solution for alums who have a later start in planning a (pre)medical career, or for undergraduates in concentrations that have many course requirements.
- *Take courses in order.*
Take intro courses first. Most importantly, take math before physics and chemistry.
- *Plan your time wisely.*
Make smart choices in planning your schedule each semester; don't try to cram in too many time-intensive courses (especially lab courses) in busy semesters. Remember that extracurricular activities should also be factored into any evaluation of how much time you have in a given semester.
- *Choose a concentration that best matches your interests.*
Choose a concentration that best matches your interests, and remember that since these interests may change over time, so might your concentration. What your concentration is called is not nearly as important as the richness of your experience. Interdisciplinary courses such as Social Studies, History and Literature, Chemistry and Physics, Mind Brain Behavior, or Environmental Science and Public Policy, among others, can be a fascinating approach to an undergraduate education. A possible downside to this is that the large number of requirements in some interdisciplinary concentration combined with non-overlapping premedical requirements sometimes leads to a college experience filled only with large introductory courses. Try to optimize your plan so that most if not all of your courses are interesting to you, and then figure out a way to match concentration requirements.

The MCAT

The MCAT (Medical College Admissions Test) is a 5-hour, comprehensive exam of basic sciences and human physiology, administered on the computer. The material on this exam is not especially difficult compared to introductory courses at Harvard, but there is a lot of material to cover! There are 4 sections: Verbal Reasoning, Physical Sciences, Biological Sciences, and Writing. The most important thing to do is to devote adequate time (3-4 months) to prepare for this exam. The most important resources to use are full-length practice exams and problems from the organization that administers the MCAT, called the Association of American Medical Colleges (AAMC). Commercial prep courses can be helpful, especially for structuring your time, but are not necessary and can be rather expensive. Furthermore, the topics emphasized in these courses are often not quite the same as those emphasized by the MCAT. The MCAT is offered several times a year: January (2 dates), April (3), May (4), June (1), July (2), August (5), and September (2).

The best time to take the MCAT is usually during the spring or the summer of the year before you would like to enter medical school (e.g. junior year if you would like to start right after college).

The latest time to take the MCAT is August of that same year. **Don't take the MCAT too early**, especially if you are thinking about deferring your application to medical school; MCAT scores are usually good for 3 years but at one or two schools they must be less than 2 years old. **You should speak to your premedical advisor to determine the best time for you to take the MCAT.**

Letters of recommendation

We generally ask you to have 5-8 letters of recommendation in your House file before you apply to medical school. Some suggestions people to ask for letters are:

- science professors / TFs
- concentration advisors (tutorial advisor, thesis advisor, etc.)
- non-science professors / TFs
- an employer or extracurricular activity sponsor
- clinical mentors

(Letters from friends, family, and religious leaders are not usually helpful in the admissions process.)

How are you ever going to get all of these letters? Get to know people well in the right environments. Take small courses (tutorials, thesis courses, for example). Go to office hours. Seek perspective from your teachers about your interests in medicine. Ask: "Would you feel comfortable writing a supportive letter of recommendation for my application to medical school?" Make sure to set a mutually agreeable deadline for receipt of the letter. That way you can feel comfortable reminding the recommender after the deadline.

Be sure to obtain a waiver form for EVERY letter of recommendation before you solicit recommendations. They are available outside the House Office (A-entry) or from the "Forms" section on the Lowell House web site (<http://lowell.student.harvard.edu>). Letters are kept in your permanent file at Lowell House, and are accessible even after you graduate.

Extracurriculars

Medical schools like to see people who are involved in activities outside of academics, especially those people who have demonstrated that they can work well with others. Explore your many interests and practice the leadership and management skills which will help you as a physician, but be careful to stay on top of your class work. Medical schools like to see people who are involved in activities outside of academics, especially those people who have demonstrated that they can work well with others. Activities outside the classroom are vital to a balanced college life. Medical schools recognize that extracurricular activities—more than transcripts or MCATs—reveal important qualities about you: leadership, dedication, maturity, empathy, time-management, intellectual curiosity, patience, initiative, and so on. No one individual has all of these qualities, and no one individual is suitable for all extracurricular activities. Explore your many interests and acquire the organizational, leadership, and management skills which will help you as a physician, but be careful to stay on top of your class work.

Some activities you might consider in exploring medical careers:

- Shadowing experiences and discussions with the Lowell House Premedical Committee: figure out what does a doctor do on a day-to-day basis; appreciate the variations between doctors
- Volunteer work in hospitals, community and extracurricular work, teaching experiences, premedical coursework
- Working in a laboratory or in clinical research: You don't have to work in a lab to get into medical school. However, for quite a few people, working in a lab is an interesting way to explore some facet of nature while learning important intellectual and technical skills.

State residency

Because medical education at state schools is funded to a large extent by the state, state schools give strong preferences to state residents: thus, your state school is usually your best bet for admission, and many state schools offer the most exceptional education for the price. Different medical schools have different ideas of who is a state resident. Make sure to clear up residency status well in advance of applying. If you are not a U.S. permanent resident or citizen, you may have a very difficult time gaining entrance to U.S. medical schools purely due to financial constraints of the schools: these schools depend on tuition funding from federal sources.

WHAT'S NEXT?

There's a lot of information in this handout... don't let it scare you! The very well-organized premedical process here at Lowell is your friend. We are here to help make life easier.

Here are some things you can do after this meeting:

- Read over this handout on your own.
- ***Get to know your premedical advisor.*** This person will be a helpful go-to person with any questions or concerns you might have about your courses or plans. This person can also refer you to other members of the committee or other people outside Lowell who would be better able to help you. This is an excellent person to consult if you are seeking some clinical exposure. Talk to Ben, Marlys, Ilya or Mary at any time if you would like to change your premedical advisor.

IMPORTANT RESOURCES:

- Lowell Premed Students Email List (email lohomed@fas.harvard.edu to join)
- Lowell House webpage – to obtain waiver forms for recommendation letters
- Harvard Office of Career Services (OCS) – very important premedical website with information specific to Harvard students
- Association of American Medical Colleges (<http://www.aamc.org>):
 - official guidelines for medical school applications
 - MCAT registrations, deadlines, **practice exams**
 - Medical School Admissions Requirements 2008-2009

Most important—ASK for advice and information along the way. We're here to help. Good luck!