



Tomorrow's Doctors, Tomorrow's Cures®

2021

Official Guide to Medical School Admissions

How to Prepare for and Apply to Medical School



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2021

Official Guide to Medical School Admissions

How to Prepare for and Apply to Medical School

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About the AAMC

The AAMC (Association of American Medical Colleges) is a nonprofit association dedicated to transforming health through medical education, health care, medical research, and community collaborations. Its members are all 155 accredited U.S. and 17 accredited Canadian medical schools; approximately 400 teaching hospitals and health systems, including Department of Veterans Affairs medical centers; and more than 70 academic societies. Through these institutions and organizations, the AAMC leads and serves America's medical schools and teaching hospitals and the millions of individuals employed across academic medicine, including more than 186,000 full-time faculty members, 94,000 medical students, 145,000 resident physicians, and 60,000 graduate students and postdoctoral researchers in the biomedical sciences. Additional information about the AAMC is available at aamc.org.

Important Notice

The information in this book is based on the most recent data provided by AAMC-member medical schools at the request of the AAMC.

We edited and, in some instances, condensed the material to meet space limitations. In compiling this edition, we made every reasonable effort to ensure the accuracy and timeliness of the information, and, except where noted, the information was updated as of summer 2021. All the information, however, especially figures on tuition and expenses, is subject to change and is nonbinding for the medical schools listed and the AAMC. All medical schools listed in this edition, as with other educational institutions, are subject to federal and state laws prohibiting discrimination on the basis of race, color, religion, sex, age, disability, or national origin.

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In applying to U.S. or Canadian medical schools, applicants need not go through any commercial agencies. The AAMC does not endorse any organization or entity that purports to help applicants gain admission to medical school, other than undergraduate premedical advisors and medical school admissions officers.

AAMC Commitment to Diversity and Inclusion

The AAMC's mission is to serve and lead the academic medicine community to improve the health of all. As the U.S. population ages and grows more diverse while disparities in health care persist, understanding the benefits of diversity and inclusion becomes critical to addressing the health of the nation. The AAMC's commitment to diversity and inclusion in medicine and biomedical research spans more than three decades, demonstrated by ongoing leadership and engagement in activities — starting as early as high school — that promote diversity and inclusion through programs, advocacy, and research. Information about AAMC initiatives is available at aamc.org/diversity.

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in fillable PDF format at aamc.org/msar-resources.

How to Use This Guide

The AAMC works through many avenues to support medical education and help aspiring physicians succeed in their path to medical school. We created this guide to serve as a resource for students considering a career as a physician. Each chapter explains one aspect of the medical school admission process, and each is carefully reviewed every year by content experts at the AAMC.

You may choose to read this book cover to cover, or you may prefer to skip ahead to chapters most relevant to where you are in the application process. Here are some tips to get the most out of this guide.

Skim the table of contents before you begin reading.

Not everyone takes the same path or is in the same place when they use this guide. You may want to read the chapters in the order that most relates to where you are in the process and what you need to know to move forward.

Use and update the chapter worksheets.

At the end of each chapter, you'll find a worksheet that can help you with your medical school application. Topics include tracking your volunteer experiences, finding people to write your letters of evaluation, and determining the right time to take the MCAT® exam. You may want to complete these worksheets after you read the chapter or hold onto them until you're at that phase of the application process. You can print copies of the worksheets or complete fillable PDFs (aamc.org/msar-resources).

We encourage you to share your work with your prehealth advisor as you complete the worksheets. You should have an advisor or mentor to help guide you through this process. Find out more about the benefits of working with an advisor in Chapter 2, "Academic Preparation." If you do not have a prehealth advisor at your school, you can find one at [NAAHP.org](https://naahp.org).

Look through the data in this book to understand the national picture.

Part of being a well-prepared applicant is knowing more about the national applicant and acceptance data. While every applicant is different, and every medical school accepts applicants with a range of scores and experiences, it can be helpful to see how you compare with other applicants across the country. This will help you to decide, along with your prehealth advisor, when you're ready to apply to medical school. The data in this book come directly from the AAMC Data Warehouse, the AAMC Data Book, the American Medical College Application Service® (AMCAS®), the MCAT, and surveys conducted with entering and graduating medical students such as the Graduation Questionnaire (GQ) and the Matriculating Student Questionnaire (MSQ). The data are comprehensively updated each year with the most current information available at the time of production. Because this information comes directly from the source, you can trust that it is the most up-to-date and accurate information available. For more and current information, you can check the AAMC FACTS tables available at aamc.org/facts.

Check out the Medical School Admission Requirements™ (MSAR®) site when you're ready to look at individual schools.

One of the most important decisions you'll make is where to apply to medical school. The AAMC's Medical School Admission Requirements™ (MSAR®) website provides the most comprehensive, up-to-date information and data. When you're ready to start researching medical schools, tap into this powerful online database of information on U.S. and Canadian medical schools and baccalaureate-MD programs at aamc.org/msar. As the gold standard for admission requirement information, this is the only comprehensive resource of accurate and current data directly from the MCAT program, the AMCAS program, and medical school admissions offices. Your one-year subscription allows you to search, sort, and save information.





The AAMC has resources to help you, from inspiration through practice.

We have numerous resources to help you, whether you're just considering a career as a physician or you're already applying to medical school. Take a look at these premed and applicant resources, and tell other applicants about them if you find them useful.

- Aspiring Docs®
 - Aspiring Docs Diaries (aspiringdocsdiaries.org)
 - Inspiring Stories (aamc.org/students/aspiring/inspiring-stories)
 - Fact Sheets (aamc.org/students/aspiring/community/fact_sheets)
 - Ask a Medical Student (youtube.com/user/AAMCvideo)
- Anatomy of an Applicant (aamc.org/corecompetencies)
- Financial Aid and Financial Literacy Resources
 - Financial Information, Resources, Services, and Tools (FIRST) Fact Sheets (aamc.org/first/factsheets)
 - MedLoans® Organizer and Calculator (aamc.org/services/first/medloans)
 - AAMC Financial Wellness Program (aamcfinancialwellness.com/index.cfm)
- Medical College Application Test® (MCAT®)
 - *MCAT® Essentials for Testing Year 2021* (students-residents.aamc.org/mcatessentials)
 - *The Official Guide to the MCAT® Exam* (store.aamc.org/the-official-guide-to-the-mcat-exam-fifth-edition.html)
- AMCAS
 - *2021 AMCAS® Applicant Guide* (students-residents.aamc.org/media/5186/download)
- Careers in Medicine® (CiM) (aamc.org/cim)

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-  Facebook: facebook.com/aamcpremed
-  Twitter: twitter.com/aamcpremed
-  Instagram: instagram.com/aamctoday
-  YouTube: youtube.com/user/AAMCvideo

A note about MD versus DO programs: This guidebook explains the process of preparing for and applying to medical doctor (MD) programs accredited by the Liaison Committee on Medical Education (LCME®). You may have heard of osteopathic medicine programs that grant doctor of osteopathic medicine (DO) degrees. DO and MD programs have many similarities; both types of physicians are fully certified to practice medicine in the United States after passing board examinations. For more information about DO-granting schools and admission requirements, consult the [American Association of Colleges of Osteopathic Medicine](http://www.aao.org).

So . . . You Want to Be a Doctor



Patrick Samones

University of California, Riverside, School of Medicine
Class of 2023

"You are embarking on a life-changing journey into a fulfilling career as a physician, but sometimes the path toward medical school may feel grueling, with sleepless nights and endless studying. (I'm sure you've already had a preview.) I applaud your conviction to explore your interest through reading this guidebook.

My decision to pursue medicine began when I was an undergraduate at University of California, Riverside, just 10 miles from my home. I was inspired by the mission of the medical school: service toward the underserved communities where I came from in the inland Southern California communities. Because I understood the characteristics and needs of my community, I felt compelled to pursue becoming a physician as part of the solution for my region's primary care shortage, poor health literacy, and need for cultural competency. I explored extracurricular activities related to service and health education, volunteered at local free clinics, helped to host educational seminars, and sought to connect longitudinally with patients in the pursuit of learning what was best for my community.

By the end of it all, I had countless stories and reflections that helped me solidify my decision to be a physician and to serve my community that raised me.

The best advice I can give you is to find your passion and pursue it. Don't take a checklist approach. Explore aspects of your passion in different ways. Begin activities with the intention to find great experiences and lessons and leave programs better than you found them.

Explore yourself and pursue your goals; understand what drives your desire to be a doctor. Find your why. Then work on the how. Everything will fall into place."

Tomorrow's Doctors, Tomorrow's Cures®

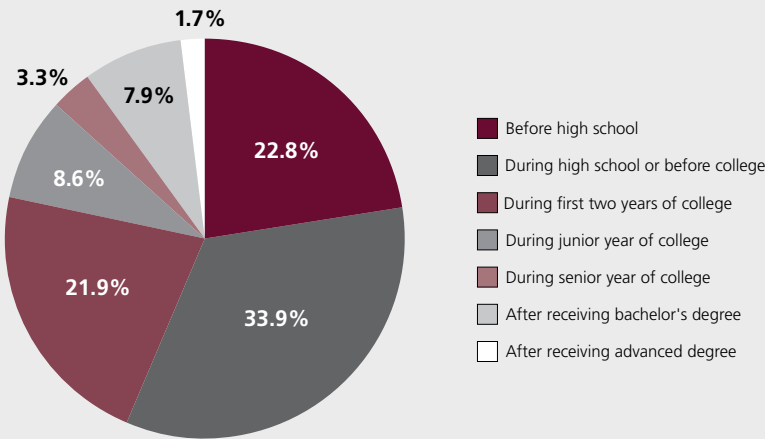
Many applicants seem to realize their dream of becoming a doctor at an early age. A recent AAMC survey shows that just over half of all medical students who responded to the survey chose a medical career before they set foot in college — and one in five made the choice before they even started high school (refer to Figure 1.1).

Whether you have always known you wanted to be a doctor or are just starting to consider the idea, being a physician is an extremely rewarding profession. A career in medicine offers numerous opportunities to make a real difference in the lives of countless people.

As a doctor, you are likely to see new life come into the world or provide comfort to those about to leave it. Or you may choose to help build the future of medicine by educating the next generation of physicians. Perhaps you will dedicate yourself to discovering new cures for devastating diseases.

Whichever direction you follow, you will play a role in reducing or eliminating people's pain and suffering, improving their quality of life, and providing invaluable service to your local community and maybe the country as a whole.

Figure 1.1. When did you definitely decide that you wanted to study medicine?



Source: AAMC 2020 Matriculating Student Questionnaire (MSQ).

Your Medical Career Driven by Your Interests

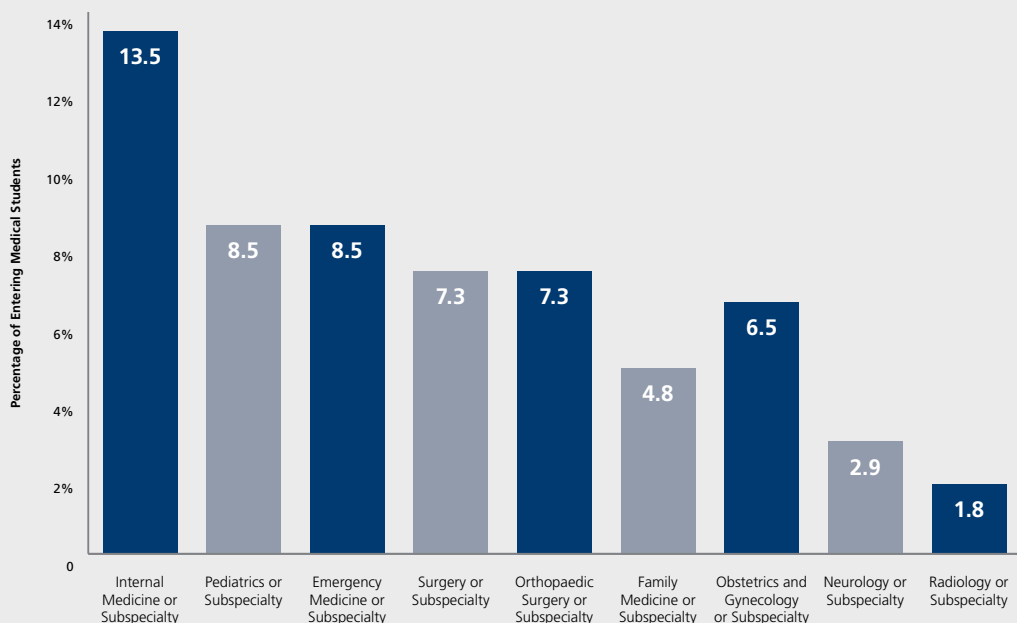
Another benefit of the field is that you can choose from many and varied ways to practice. From clinical practice to biomedical research, from public health to medical education — the choices are plentiful (refer to Figure 1.2). Medical students typically have clear preferences for the areas they plan to specialize in after graduation. Many students change or refine their specialty preferences as they gain experience and knowledge in medical school. If your interests change with time and experience, medicine — because of its emphasis on lifelong learning and ties to research and technological developments — will provide you with opportunities to hone your skills and reorient your practice. Here are some examples of possible careers:

- The satisfaction of long-term patient relationships is one attraction of **family medicine and internal medicine**, where the bulk of time is spent in direct contact with patients. Physicians who work under the umbrella of “primary care” often care for entire families and enjoy the challenges that come from treating a diverse population with varied backgrounds and conditions.
- Other physicians, like **cardiologists, ophthalmologists, dermatologists, endocrinologists**, and other specialists, develop and apply detailed knowledge about the intricacies of a single organ or system.
- Physicians interested in **scientific exploration** with the desire to **break new ground in medical knowledge** can be found in the nation’s private and public laboratories and research institutions.
- Those with a commitment to social justice and an interest in fulfilling the health care needs of the underserved and disadvantaged can meet those challenges in **urban and rural clinics, in public health, or as medical missionaries**.
- Careers in **general surgery** often suit people who have a desire to see immediate results of their interventions. **Plastic and reconstructive surgery** draws others with artistic skills and aesthetic interests.
- Those interested in mind-body interactions and the emotional lives of their patients might find a home in **neurology or psychiatry**.

- The fast pace of medicine draws some to work as **emergency physicians or trauma surgeons**.
- Others motivated by national defense may use their skills as **flight surgeons or in military medicine**.
- The **economic and public policy aspects of health care** guide some physicians to think tanks and health-related organizations, as well as to serve in the legislative and executive branches of government.
- Those fascinated by issues facing groups of patients with age-defined illnesses and problems — from the risks in infancy and early childhood to the challenges of older life — find fulfillment as **pediatricians and geriatricians**.
- Assisting patients in overcoming complex fertility and gestational problems is the hallmark of specialists in **reproductive endocrinology** as well as **obstetrics and gynecology**.
- Those dedicated to reducing the incidence of birth defects and inherited diseases might find their calling in **medical genetics**.
- The detection, prevention, and eradication of injury and disease draw people to the fields of **preventive medicine and epidemiology**.

Once you enter medical school, you'll start actively learning about these and the myriad other career options and considering where you best fit. This is addressed further in Chapter 3, in the section "Determining How You Want to Practice Medicine."

Figure 1.2. What general specialty are you considering?



Source: AAMC 2020 Matriculating Student Questionnaire (MSQ).

What About the Future?

As long as we're looking ahead, let's look way ahead. In 5, 10, 15 years, what will medicine look like?

One thing is certain — the face of medicine changes continually. A good example of this is the growing prevalence of women in medicine. In the 1976-1977 academic year, women made up just 24.7% of all medical school matriculants. Compare that with 2020-2021, when they made up more than half — 53.6% — of the entering class, according to the AAMC Applicant Matriculant File.

Look back one generation, and you can see many new fields have emerged.

- In the early 1980s, a new — and fatal — illness was taking hold that nobody could identify. We now know it well: AIDS. **Infectious disease** is currently a large medical subspecialty, and, as a result, significant advances have been made in extending the lives of those infected with HIV.
- In the last few decades, **minimally invasive surgery**, in which surgeons carry out precise procedures — sometimes with the assistance of a robot — became increasingly popular. Such surgeries are currently used in procedures on lungs, the esophagus, the prostate, the uterus, and kidneys. Through surgeries like these, patients benefit from smaller incisions, lower risks of complications, shorter hospital stays, less pain, and speedier recoveries.
- In **personalized medicine**, a career path unavailable to the previous generation, technology allows physicians to identify mutated genes and alert patients about their predisposition to a specific disease. (The next step — actually treating diseases with genes — is on the horizon.)
- Some more established fields have evolved to take on new applications. Radiology, for example, is no longer about just reading X-rays. Radiologists can now perform surgery as part of **interventional radiology**.

Even more exciting is what lies ahead: gene therapy, portable medical records, distance surgery, and focused medication. The possibilities for advancement in medical research are limitless.

- Early tests of **gene therapy** have been especially promising for cystic fibrosis, by transporting the correct CFTR gene via a harmless virus or liposome.
- Similarly, research is underway in **pharmacogenomics**, a field that uses patients' genetic codes to develop tailored treatments. For example, if a patient's genes fit a certain type of cancer code, the physician will prescribe the "matching" pharmaceutical developed to destroy cells with that code and will know — rather than hope — the treatment is likely to work. Pharmacogenomics is still in its infancy, with most forms of tailored drugs used in oncology, but studies are progressing in other areas, including cardiology, diabetes, and psychiatric disorders.
- Also in development is **focused preventive care**, which uses genetic diagnosis to identify to a very specific degree how likely a patient is to develop a certain disease or condition — and prevents that development before it has a chance to begin.
- Other advances may be administrative in nature; for example, the days of hunting down medical records are ending. One possibility being explored is a **portable medical records** system, or a national online database of individual health records. Everyone would carry a smart card (or have an implanted microchip!) allowing physicians easy access to medical records. This technology would reduce errors, make files readily available, minimize or eliminate delays, and eliminate the experience of having repeated — that is, unnecessary — tests.

Workforce Issues

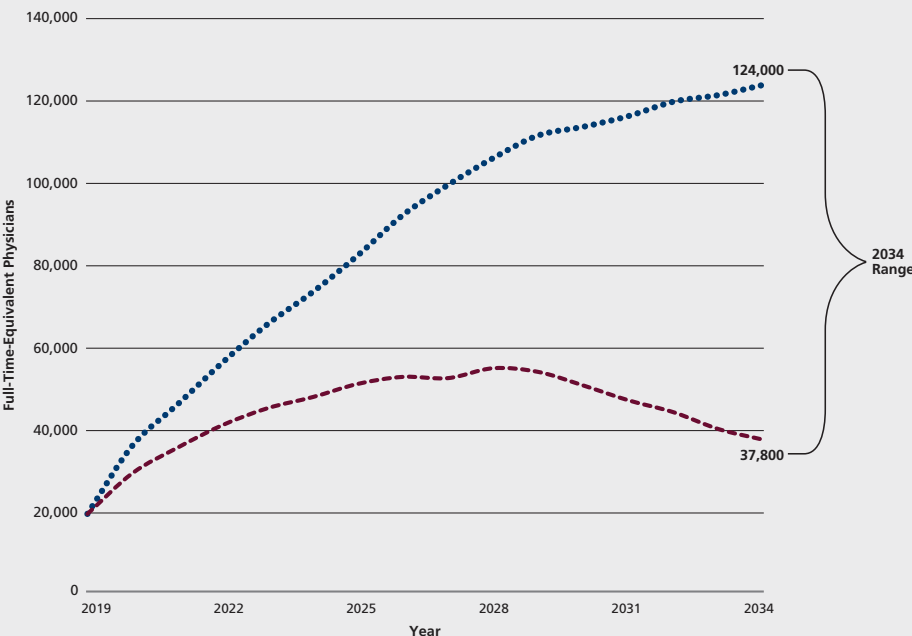
Above all, know this: Whatever specialty you choose, your services as a physician will be needed.

According to a study commissioned by the AAMC, there will be a shortage of 37,800 to 124,000 physicians by 2034. The shortage is being driven in large part by the rapid expansion of the number of Americans age 65 or over. Our doctors are getting older, too. Nearly one-third of today's physicians will be of retirement age in the next decade, just as more Americans need care. A continued demand for physicians and other medical professionals is projected.

Figure 1.3 illustrates the growing physician shortages between 2019 and 2034.

However, the shortages will be experienced unevenly, and some geographic areas will feel the effect more strongly than others. With that in mind, you might consider these trends as you think about the direction you'd like your career to take.

Figure 1.3. Projected physician shortfall range, 2019-2034.



Source: AAMC. *The Complexities of Physician Supply and Demand: Projections From 2019 to 2034.* aamc.org/media/54681/download.

Primary Care

Although the nation is facing an overall shortage of physicians, many people are particularly concerned about the growing deficit of primary care doctors. Within the overall shortage of physicians, experts expect a shortfall of between 17,800 and 48,000 primary care physicians by 2034. To encourage U.S. medical school graduates to pursue a career in primary care, the federal government and many state governments offer a variety of scholarship and loan repayment programs. You may want to explore the rewards this type of career offers, including the satisfaction that comes from delivering comprehensive care and long-term relationships with your patients.

Underserved Areas

The impact of this shortage is expected to be greatest in underserved areas — the urban and rural areas where health care is already scarce. If you choose to serve in a community designated as a Health Professional Shortage Area by the U.S. Department of Health and Human Services, you may be able to take advantage of a federal program — the National Health Service Corps — that offers scholarships and loan repayment. According to the AAMC's 2020 Matriculating Student Questionnaire, about 34.1% of entering students planned to work in a primarily underserved area, and more than half of entering-student survey participants hadn't yet decided where they wanted to work. (Learn more about this program in Chapter 10, "You Can Afford Medical School.")

A More Collaborative Approach

As Congress explores various scenarios for health care reform, one thing is nearly certain: Given the projected shortage of physicians, we will need to develop new models of health care delivery that make better, more efficient use of all health care professionals — not just doctors.

That means you can expect to work within a more collaborative, shared environment, in which a team of health care providers — including physician's assistants and nurse practitioners, for example — work in tandem. Exactly how that will play out is still in development, but the goal is to create a more efficient system, increase patient satisfaction, and, ultimately, improve health outcomes.

A collaborative approach to health care delivery is instilled beginning in the early years of medical education. Read more about the use of small-group discussions, problem-based learning, and other educational models in Chapter 3, "Your Medical School Years: The Education Process."

Immediate Steps That Lie Ahead

That's the future — or at least what we expect. Right now, though, you're undoubtedly more focused on the short-term goal of getting into medical school.

So what is the process for applying to medical school? What lies ahead?

Let's be candid. Getting into medical school isn't easy. (But it's definitely doable — as the more than 94,243 students currently enrolled can testify!) You will need to prepare for and take the MCAT exam, select schools to apply to, complete the application, write a personal statement, gather letters of evaluation, secure your undergraduate transcripts, and interview. Then you will wait for notices of acceptance and make your final decision. If you're not accepted, you'll need to evaluate your options and figure out what to do next. All of this will be covered in the following chapters.

But first, you can take many steps to make yourself a more attractive candidate to admissions committees. From taking the necessary courses to working effectively with your prehealth advisor to participating in extracurricular and volunteer activities, there's a lot you can do now.

The next chapter focuses on your undergraduate preparation.

A Note for Career Changers or Gap-Year Applicants

If a year or more has passed since you graduated from college, you're not alone. Well over half (66.3%) of matriculating medical students indicated in the AAMC's MSQ that there was a gap between their college graduation and matriculation to medical school of at least a year. Medical schools do not see a break between the end of college and beginning of medical school as a weakness or negative attribute. In fact, what you've experienced or accomplished during this time may enhance your application and qualifications significantly.

We'll provide tips and things to consider throughout this book to help guide you through the application and preparation process. We know there may be some variation in how you'll need to prepare yourself and compile the different components of your application now that you're no longer on campus.



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 1.1

Important Resources and Ideas For Getting Medically Related Experiences

Advising Office

Your prehealth advisor*: _____

Advising office phone number: _____

Advisor's email address: _____

Office location: _____

*If your school does not have prehealth advising or you don't have access to an advisor, refer to the National Association of Advisors for the Health Professions' (NAAHP's) Find an Advisor service (naahp.org/student-resources/find-an-advisor).

Clubs and Volunteer Opportunities

Premed club or society on campus: _____

Premed honor society: _____

Service organization club or fraternity: _____

Other Ideas to Make Contacts and Get Experience:

☐ Contact science department about lab and/or research opportunities.

Notes: _____

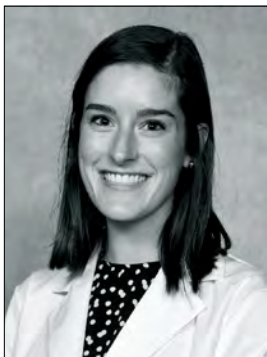
☐ Contact local clinic or health service provider for volunteer, paid, part-time, or internship opportunities.

Notes: _____

☐ Contact health care providers you know about shadowing opportunities.

Notes: _____

Academic Preparation



Mary McGrath

The Ohio State University College of Medicine
Class of 2023

"I found self-reflection vital while applying for medical school. When sitting down to write a first draft of your personal statement (or, honestly, any part of your application) it's valuable if you've teased out your "why medicine" response for a few months or even years beforehand. For me, journaling was helpful. During my undergraduate time before I entered the medical school application cycle, I tried to regularly put pen to paper and articulate why I felt continually pushed toward medicine. Did I have an interesting patient encounter? An experience with sickness, personally or secondhand? What was it about those particular occurrences, medical or not, that fed my

desire to be a physician? For example, interactions that provided me with regular inspiration included my time volunteering at my local hospital, teaching CPR in my community, and cultivating relationships with my support system, family, and friends.

Medical schools don't require perfection, but they do hope to see that you've already utilized skills you'll continue fostering in your career: service to others, dedication to school, and curiosity for lifelong learning. "Lean in" to your weaknesses, and maintain a growth mindset. In academics, the prerequisite classes can sometimes feel mundane, but try to search for the larger context in your studies. How will that pressure-volume curve in physics eventually help you understand air movement in the lungs, for example?

Medical school, just like the application process, can be demanding. Keep going! You're on your way to a fulfilling, thrilling career!"

Premedical Preparation

College coursework plays a major role in your preparation for medical school.

Your major field of study, the mastery of specific scientific principles, and advanced coursework all contribute to that preparation. Let's take a closer look at each of these.

Choice of Major

Contrary to what many college students believe, there is no such thing as the "best" major. **In fact, no medical school requires a specific major of its applicants.** That's because admissions committee members know that students develop the essential skills of acquiring and synthesizing information through a wide variety of academic disciplines and, therefore, should be free to select whichever major they find interesting and challenging.

Even so, many premedical students choose to major in a scientific discipline. If that's the direction you're heading in, and you're doing so because you are fascinated by science and believe that such a major will be the foundation for a variety of career options, great. If you're doing so because you believe it will enhance your chances for admission, think again.

Table 2.1. MCAT and GPAs for Applicants and Matriculants to U.S. Medical Schools by Primary Undergraduate Major, 2020-2021

Applicants	MCAT CPBS		MCAT CARS		MCAT BBLs		MCAT PSBB		Total MCAT		GPA Science		GPA Non-Science		GPA Total		Total Applicants
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Biological Sciences	126.5	2.7	125.8	2.7	126.9	2.6	127.2	2.7	506.3	9.1	3.50	0.41	3.76	0.26	3.60	0.33	30,921
Humanities	126.7	2.7	127.0	2.6	126.9	2.6	127.8	2.6	508.4	8.8	3.47	0.44	3.72	0.29	3.60	0.32	1,738
Math and Statistics	128.0	2.5	126.8	2.6	127.7	2.4	128.0	2.5	510.5	8.4	3.58	0.41	3.72	0.28	3.63	0.34	342
Other	126.2	2.8	125.7	2.7	126.5	2.7	127.1	2.8	505.5	9.3	3.49	0.42	3.73	0.28	3.60	0.33	8,525
Physical Sciences	127.7	2.5	126.5	2.7	127.4	2.6	127.6	2.6	509.2	8.7	3.56	0.39	3.70	0.29	3.62	0.32	4,680
Social Sciences	126.0	2.8	126.1	2.7	126.2	2.8	127.5	2.7	505.8	9.4	3.39	0.47	3.66	0.32	3.54	0.35	4,810
Specialized Health Sciences	125.6	2.9	125.4	2.8	125.9	2.8	126.7	2.9	503.5	10.0	3.44	0.45	3.72	0.27	3.58	0.33	2,014
<i>All Applicants</i>	126.5	2.8	125.9	2.7	126.8	2.7	127.2	2.7	506.4	9.2	3.49	0.42	3.74	0.28	3.60	0.33	53,030

Matriculants	MCAT CPBS		MCAT CARS		MCAT BBLs		MCAT PSBB		Total MCAT		GPA Science		GPA Non-Science		GPA Total		Total Matriculants
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Biological Sciences	127.8	2.2	126.8	2.3	128.2	2.0	128.5	2.0	511.3	6.5	3.67	0.30	3.83	0.20	3.74	0.24	12,845
Humanities	127.9	2.1	127.9	2.1	128.1	2.0	128.9	1.9	512.8	6.0	3.63	0.33	3.81	0.22	3.72	0.24	832
Math and Statistics	129.1	2.0	127.8	2.4	128.6	2.0	128.9	2.0	514.3	6.5	3.73	0.26	3.82	0.19	3.76	0.22	156
Other	127.6	2.1	127.0	2.3	127.9	2.1	128.6	2.0	511.1	6.5	3.65	0.32	3.81	0.21	3.74	0.24	3,391
Physical Sciences	128.7	2.0	127.4	2.3	128.4	2.0	128.7	2.0	513.3	6.5	3.70	0.29	3.78	0.23	3.73	0.24	2,240
Social Sciences	127.5	2.2	127.4	2.2	127.7	2.0	129.0	1.9	511.6	6.3	3.60	0.34	3.76	0.26	3.68	0.26	1,991
Specialized Health Sciences	127.3	2.2	126.8	2.3	127.7	2.0	128.4	2.0	510.3	6.5	3.65	0.32	3.82	0.20	3.74	0.23	784
<i>All Matriculants</i>	127.8	2.2	127.0	2.3	128.1	2.0	128.6	2.0	511.5	6.5	3.66	0.31	3.82	0.21	3.73	0.24	22,239

Notes: In April 2015, the AAMC launched a new version of the MCAT exam. Scores are reported in four sections: (1) Chemical and Physical Foundations of Biological Systems (CPBS); (2) Critical Analysis and Reasoning Skills (CARS); (3) Biological and Biochemical Foundations of Living Systems (BBLs); and (4) Psychological, Social, and Biological Foundations of Behavior (PSBB). Some medical schools accept scores from both the new and old exams. Accordingly, applicants vary in which scores they include with their applications. Only the most recent MCAT score is used for individuals who took the exam more than once.

In 2020, 53,030 individuals applied to U.S. medical schools. Among them, 52,022 applied with MCAT scores, and 52,744 provided undergraduate GPAs. Among those who applied with MCAT scores, almost all applicants (98.6%) applied with scores from the new exam. The means and SDs of MCAT scores are calculated based on data from applicants who applied with MCAT scores. In 2020, 51,996 applicants and 21,519 matriculants were included in the calculations. The means and SDs of undergraduate GPAs are calculated based on data from applicants who applied with undergraduate GPAs. Specifically, 52,744 applicants and 22,050 matriculants in 2020 were included in the calculations.

Each academic year includes applicants and matriculants that applied to enter medical school in the fall of the given year. For example, academic year 2020-2021 represents the applicants and matriculants that applied to enter medical school during the 2020 application cycle.

Source: AAMC Data Warehouse: Applicant/Matriculant File.

Admissions committees welcome students whose intellectual curiosity leads them to a wide variety of disciplines.

And no... you won't be at a disadvantage if you choose to major in English, for example, rather than biology. You may be surprised to learn that there is very little difference in median total MCAT scores among those who major in the humanities, social sciences, and biological sciences. Table 2.1 shows that students from many different majors are accepted to medical school, as long as they have the basic science preparation needed.

College students take advantage of a variety of programs to prepare for medical school and a career in medicine. Table 2.2 shows the percentage of students who participated in several popular programs in 2020.

Table 2.2. How Do Students Prepare for Medical School?

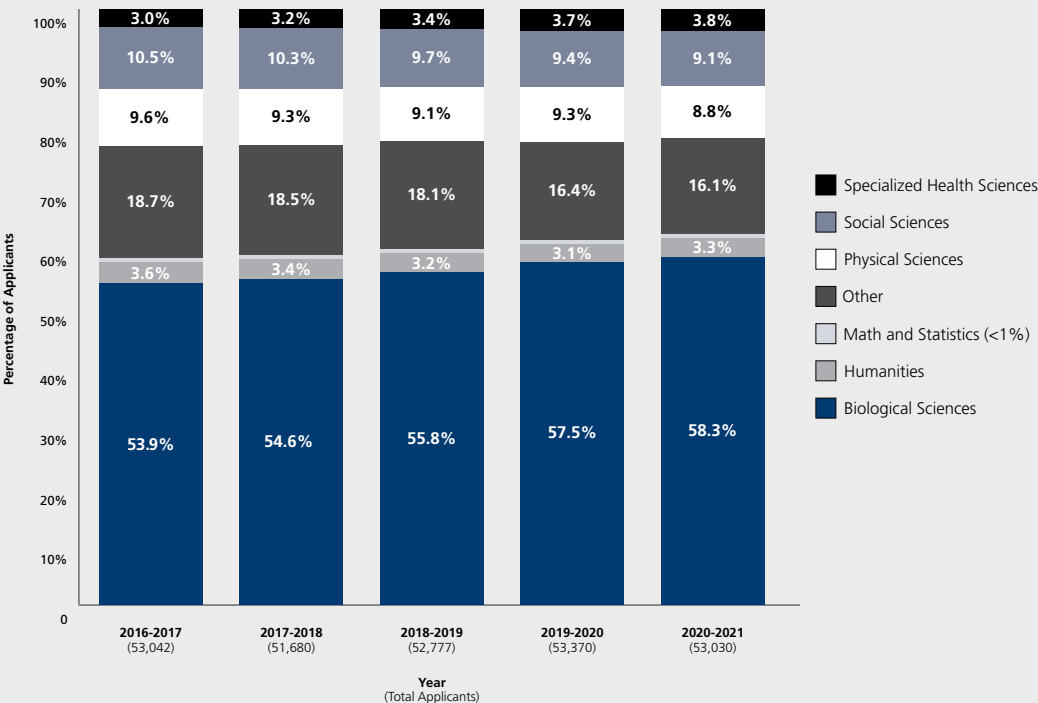
Program	Proportion of Students
Health care field volunteer	92.9%
MCAT® preparation course	49.2%
Laboratory research apprenticeship	58.7%
Summer academic enrichment	13.6%
Nondegree postbaccalaureate program to complete premedical requirements	7.7%
Nondegree postbaccalaureate program to strengthen academic skills	7.4%

Source: AAMC 2020 Matriculating Student Questionnaire (MSQ).

Scientific Preparation

Still, medical schools recognize the importance of a strong foundation in mathematics and the natural sciences — biology, chemistry, and physics — and most schools have established minimum course requirements for admission. These courses usually represent about one-third of the credit hours needed for degree completion (leaving room for applicants to pursue a broad spectrum of college majors, as shown in Figure 2.1).

Figure 2.1. Undergraduate major distribution, all applicants, 2016-2020.



Source: AAMC Data Warehouse: Applicant Matriculant File.

Many medical schools have progressed to competency-based admissions, meaning they do not require specific courses. For those that do require courses, schools typically expect that their entering students will have mastered basic scientific principles by successfully completing one academic year (two semesters or three quarters) each of biology, physics, general chemistry, and organic chemistry, including adequate laboratory experiences. Increasingly, biochemistry is strongly recommended by schools, too.

Figure 2.1 presents information about the undergraduate majors of all medical school applicants to entering classes for the years 2016-2020. Over the past five years, more than half of all applicants reported undergraduate biological science majors, while the remainder reported a variety of majors, including the humanities, mathematics and statistics, physical sciences, social sciences, and other health sciences, as well as a broad “other” category. The proportions of these different majors have remained relatively constant over time, despite annual fluctuations in the numbers of applicants.

Although only a few medical schools require applicants to complete a specific course in mathematics, all schools appreciate that mathematical competence provides a strong foundation for understanding basic sciences. A working knowledge of statistics helps students fully grasp medical literature. Many medical schools therefore recommend coursework in mathematics and statistics in addition to the science courses named above. Table 2.3 gives an overview of the most common courses required or recommended by medical schools.

Table 2.3. Subjects Often Required or Recommended by U.S. Medical Schools*

Required or Recommended Subject
Biochemistry
Biology
Biology/Zoology
Calculus
College Mathematics
English
Humanities
Inorganic Chemistry
Organic Chemistry
Physics
Social Sciences

*For specific requirements and recommendations, refer to the individual school profiles on the MSAR website: aamc.org/msar (subscription required). You can also view coursework requirements on individual medical school websites.

Source: AAMC MSAR website, 2021.

AP, IB, and CLEP Courses

If you intend to apply college credit earned through **advanced placement (AP)**, **international baccalaureate (IB)**, and **college-level examination placement (CLEP)** to meet premedical requirements, you should be aware that some medical schools have requirements about the use of such credit. Please review the MSAR website and the websites of medical schools you’re interested in for more information.

Competencies Versus Courses

Finally, for those of you reading this in your early years of college (or in high school), note that medical schools are increasingly defining their prerequisites by competencies, rather than courses. This comes about because, as a collaborative report between the Howard Hughes Medical Institute (HHMI) and the AAMC points out, the scientific knowledge medical schools seek in their applicants can be obtained in a variety of courses as opposed to specific ones. In other words, a student might be able to develop and apply knowledge about chemistry principles in a zoology class or about statistics in a sociology class. (The AAMC-HHMI report *The Scientific Foundations for Future Physicians* is available at aamc.org/scientificfoundations.)

Advanced Coursework

Although upper-level science coursework may not be required by every medical school, it’s usually a good idea to show you have challenged yourself academically. Successfully completing advanced courses demonstrates science proficiencies and ultimately strengthens your preparation for medical school. Taking science courses that simply duplicate basic content, however, is not recommended. But don’t think that all your upper-level courses must be STEM-based (science, technology, engineering, and math). Practicing physicians often suggest that premedical students take advantage of what might be their final opportunity for formal study in nonscience areas and take elective courses in subjects of interest, such as music, art, history, and literature. Medical schools also look for applicants with rich and varied coursework and experiences. Beyond that, medical schools

encourage honors courses, independent study, and research work by premedical students. Activities such as these demonstrate in-depth scholarly exploration and the presence of the lifelong-learning skills essential to a career in medicine.

Career Changers and Gap-Year Students: Not All Coursework Is “Evergreen”

It’s important for applicants who have had a significant break between completing coursework and applying to medical school to check with the schools or look at the MSAR site for details on the oldest date coursework can be accepted. This is especially important for core premedical requirements, though some schools may waive the requirement for individual courses based on an applicant’s professional experience (for instance, an applicant whose current work shows a high level of competency in a medically related area). Be sure to contact the schools you’re interested in or check their websites for their requirements, or look at the MSAR site.

Some applicants who need to complete numerous courses do so via postbaccalaureate premedical programs for career changers or for those who need to enhance their academic record.

Postbaccalaureate information is available on the AAMC’s free postbaccalaureate database (apps.aamc.org/postbac).

Competencies for Entering Medical Students

The AAMC’s Core Competencies for Entering Medical Students were developed to highlight the knowledge, skills, values, and attributes that the medical education community thinks are fundamental for students and future physicians. The competencies fall into four categories: Interpersonal, Intrapersonal, Thinking and Reasoning, and Science (aamc.org/admissions/dataandresearch/477182/corecompetencies.html). One of the most essential core competencies is **Cultural Competence**, which states that applicants should:

- Demonstrate knowledge of sociocultural factors that affect interactions and behaviors.
- Show appreciation and respect for multiple dimensions of diversity.
- Recognize and act on the obligation to inform one’s own judgment.
- Engage diverse and competing perspectives as a resource for learning, citizenship, and work.
- Recognize and appropriately address bias in themselves and others.
- Interact effectively with people from diverse backgrounds.

The AAMC-HHMI report *Scientific Foundations for Future Physicians* proposes scientific competencies for future medical school graduates and undergraduate students who want to pursue a career in medicine, including:

- Both the knowledge of and ability to apply basic principles of mathematics and statistics, physics, chemistry, biochemistry, and biology to human health and disease.
- The ability to demonstrate observational and analytical skills.
- The ability to apply those skills and principles to biological situations.

These scientific competencies have been incorporated into the AAMC’s Thinking and Reasoning and Science Core Competencies.

Personal Attributes

As the Core Competencies for Entering Medical Students suggest, academic and scientific accomplishments alone are not sufficient preparation for medical school. While intellectual capacity is obviously important to being a successful physician, so are other attributes that signify the ability to develop and maintain effective relationships with patients, work collaboratively with team members, act ethically and compassionately, and master the art of medicine in many other ways.

The AAMC publication *Learning Objectives for Medical Student Education: Guidelines for Medical Schools* describes the personal attributes required of a physician (refer to aamc.org/initiatives/msop). While making note that graduating medical students must be knowledgeable about medicine and skillful in its application, the publication also emphasizes it is vital for students to:

- Make ethical decisions.
- Act with compassion, respect, honesty, and integrity.
- Work collaboratively with team members.
- Advocate on behalf of one's patients.
- Be sensitive to potential conflicts of interest.
- Be able to recognize one's own limits.
- Be dedicated to continuously improving one's knowledge and abilities.
- Appreciate the complex nonbiological determinants of poor health.
- Be aware of community and public health issues.
- Be able to identify risk factors for disease.
- Be committed to early identification and treatment of diseases.
- Accept responsibility for making scientifically based medical decisions.
- Be willing to advocate for the care of the underserved.

Chances are, some of the most valuable traits you'll demonstrate as a physician you didn't learn in a classroom. These characteristics may be nurtured throughout your college years (and, as you will see in Chapter 8, are among the attributes admissions officers seek when admitting applicants to their programs). You don't need formal programs to learn how to be a kind, empathetic physician. You have already had and will continue to have an abundance of opportunities to develop these qualities through your interactions with friends, classmates, and others while in college and through your life, work, and volunteer experiences.

Extracurricular Activities Related to Medicine

Your undergraduate years offer opportunities to become involved in a wide range of extracurricular activities. Ideally, at least a few of them should involve the medical field. Experience in a health care setting, such as volunteering at shelters or clinics or in other environments to care for ill or elderly people in your community; participating in basic or clinical research efforts; working as an emergency medical technician; shadowing a physician; and supporting people in a sexual assault crisis center, emergency room, or social service agency are all types of activities recommended to those considering a career in medicine.

These pursuits give you the chance to learn more about the medical profession and yourself. You will, for example, be able to:

- Explore different interests.
- Experience and evaluate different working environments.
- Understand the nature of medical practice and the daily demands placed on physicians.
- Assess your ability to communicate and empathize with people from different backgrounds and cultures.
- Evaluate your willingness to put others' needs before your own.

While this self-analysis can help you decide if a career in medicine is right for you, your involvement with clinical or research activities also helps demonstrate your interests to admissions committees. It shows that you have explored various aspects of the medical field.

Admissions committees evaluate your experiences using at least three different criteria, and greater value is assigned to some types of pursuits than others. Specifically, admissions committees look at the length of time you've invested, the depth of the experience, and lessons learned in relation to any particular activity. This means a single, daylong blood drive or one-time shadowing experience is often perceived as less enlightening than semester or yearlong commitments. By the same token, active participation in an activity is viewed as more instructive than passive participation (such as observation). Most important, admissions committees want to know what students learned from their experiences. Be prepared to address questions about your community, clinical, or research experiences in your application materials (which will be discussed in Chapter 7, "Applying to Medical School").

Do not approach your extracurricular activities with the idea of "checking off" a wide range of pursuits to impress admissions committees. Three or four in-depth experiences from which you gained valuable lessons are far more significant — and telling — to admissions officers than dozens of short-term involvements.

Prehealth Advisors

Fortunately, you're not on your own when it comes to preparing for medical school. Valuable resources are available to you — some likely right on campus, including your prehealth advisor.

Depending on the individual school, prehealth advisors work on a full- or part-time basis and may be a faculty member (often in a science department), a staff member in the office of an academic dean or the career center, the director or staff in an advising office for preprofessional students, or a physician in part-time practice. Advisors belong to organizations such as the [National Association of Advisors for the Health Professions \(NAAHP\)](#) that assist them in their work — and help them help you. If your school does not have a prehealth advisor, contact the NAAHP about getting a member volunteer to help you. Visit naahp.org/student-resources/find-an-advisor for more information. You can find each school's admission requirements page at students-residents.aamc.org/applying-medical-school/article/required-premedical-coursework-and-competencies, and you can use the MSAR website to view each school's admission requirements profile. You can always reach out to medical school admissions staff if you have specific questions about admission requirements or policies. Be sure to check the medical school's website first, though, to see if the information is available there.

Services Provided

The support provided by prehealth advisors varies from school to school. Contact your school's advisor to find out which services and resources are offered.

Generally, services fall into five categories:

- **Academics.** Advisors are well-informed about premedical coursework on their campuses and often work with faculty at their schools to develop suitable academic programs for premed students. They collaborate with campus academic staff to design study, reading skills, and test-preparation workshops; offer tutoring programs; and inform students they advise about regional and national programs likely to be of interest.
- **Clinical and research experiences.** Advisors often work with advisory groups composed of college and medical school teaching and research faculty and community clinicians. They help applicants identify part-time jobs, volunteer positions, and opportunities for independent study credit in local laboratories and offices.
- **Advising and support.** Advisors help students pursue realistic goals and maximize their potential, both meeting with them individually and providing group opportunities for students to meet with one another. Advisors often establish peer advising and mentoring programs and are particularly sensitive to the needs of students who are underrepresented in medicine or the first in their family to attend college.

- **Assistance to student organizations.** Advisors coordinate the activities of local and national organizations that serve premed students by planning programs, identifying funding sources, and arranging for campus visits from admissions and financial aid officers.
- **Sharing resources.** Advisors disseminate publications and other resources from relevant organizations, including the AAMC and NAAHP, to meet students' need for timely and pertinent information. In addition, advisors provide access to web-based content on health careers programs and educational financing; distribute information about local, regional, national, and international research and service opportunities; and stock a library of publications related to medical school and medical education.

A Wide Range of Guidance

A prehealth advisor may assist you in many ways, including:

- Identifying courses that satisfy premedical requirements.
- Determining a sequence for completing those courses.
- Finding tutorial assistance, if needed.
- Planning academic schedules to accommodate both premed coursework and other educational objectives, such as a study program abroad, a dual major, or a senior honors thesis.
- Locating volunteer or paid clinical and research experience.
- Strengthening your medical school application.
- Preparing for interviews and standardized tests.
- Arranging for letters of evaluation.
- Determining the most appropriate career paths based on your strengths, values, and life goals.

Letters of Evaluation and Committee Letters

Another vital service that many prehealth advisors offer their students (and often their alumni) is the prehealth committee letter of evaluation.

This is usually a composite letter written on behalf of a medical school applicant by the college or university's prehealth committee. It presents an overview of the student's academic strengths, exposure to health care and medical research environments, contributions to the campus and community, and personal attributes such as maturity and altruism. In addition, the letter may address any extenuating circumstances that may have resulted in deficits in the student's performance during a course or semester, provide perspective on challenges the student may have encountered, and explain school-specific courses and programs in which the student has participated.

Some undergraduate institutions do not provide composite letters of evaluation but instead collect individual letters throughout the student's enrollment. Then, at the appropriate time, they distribute the letters to the medical schools where the student has applied. Keep in mind that letter of evaluation distribution, practices, and policies vary at each undergraduate institution. Under the Admissions section of the MSAR site, you can find more information about each school's letter policy. It's a good idea to work with your prehealth advising office to clarify how they intend to send letters on your behalf.

Special Programs

Finally, depending on where you fall in the education process, the following two programs may be of interest.

Combined Baccalaureate-MD Programs

If you're reading this book during the last year or two of high school, you might want to explore a combined baccalaureate-MD program, offered at about a quarter of U.S. medical schools. Graduates of these programs, which range in length from six to nine years, receive both a bachelor's degree from the undergraduate institution and an MD from the medical school. For more details and a list of participating schools, refer to Chapter 11.

Postbaccalaureate Programs

Perhaps you're at a different stage along the educational continuum and have already graduated from college. If your major was something other than science, it's possible you may need to pursue additional coursework before applying to medical school. Postbaccalaureate programs offered at colleges and universities across the country range from formal one- or two-year master's degree programs to certificate programs. They are available to help applicants who may need to strengthen their knowledge in the sciences, complete required premedical coursework, enhance their academic background, or want to change careers. A searchable database of these programs can be found at apps.aamc.org/postbac. You can also find medical schools with postbaccalaureate programs using the search features on the [MSAR website](#).



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 2.1

MSAR® Premed Coursework Progress Tracker

Use this worksheet to keep track of your completed premedical courses. The MSAR website includes charts of each medical school's premedical coursework requirements (aamc.org/msar). To compare your completed coursework with all medical schools' requirements, use the My Coursework feature available to MSAR subscribers.

Course	Completed	Enrolled	Needed	N/A*	Notes
Behavioral Sciences					
Biochemistry					
Biology/Zoology					
Calculus					
College English					
College Mathematics					
Computer Science					
Genetics					
Humanities					
Inorganic Chemistry					
Organic Chemistry					
Physics					
Psychology					
Social Sciences					

*N/A = not applicable because it's not required.

Worksheet 2.2

Journal Template for Keeping Track of Lab, Volunteer, and Work Experiences

This worksheet will come in handy when you're writing application essays, tracking your experiences, identifying people to ask for letters of evaluation, and completing the American Medical College Application Service® (AMCAS®) application. You can fill out the online form at aamc.org/msar-resources.

Date	Experience	What I did	How this prepares or influences me	No. of hours	Contact name, email, and phone
[Example] January 15-April 1, 2018	Shadowing	Observed Dr. Addams in primary care role	I was able to observe patient-physician interactions and learned about an electronic medical record system.	25	

CHAPTER 3

Your Medical School Years: The Education Process



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Class of 2023

“The goal you’ve dreamed about for years has finally arrived — you are now a student doctor. Soon you will move into your new apartment, purchase supplies for school, and attend your first human anatomy lab! You’re excited to begin your medical education journey, but you’re no doubt nervous about how it will go. If you are anything like other new medical students, including myself, on day one of your first lecture, you’ll look around wondering if the admissions committee made a mistake by letting you in with all of your accomplished classmates.”

This new phase in your life will be full of excitement, scholarship, and challenges. Remind yourself that it was not by chance that you were accepted — literally hand-picked — for this opportunity! You worked hard. You earned your spot.

During challenging times, especially during the preclinical years, try to remember how much you were fueled by your clinical experiences before you started medical school. Be sure to lean on your support system, but also expand it to optimize your support during this process. Use the resources provided by your medical school when you need help. Write a list of self-care nonnegotiables for every day and/or week. Schedule time in your day and week for exercise, socialization, and mental health. Take care of yourself so you can be successful in learning how to take care of your future patients.”

Undergraduate Medical Education: An Overview

At the core, all U.S. medical schools have the same purpose — to educate their students in the art and science of medicine, provide them with clinical experience, and, ultimately, prepare them to enter the next phase of medical training. That is why every school follows a similar program, requiring students to acquire a foundation in the medical sciences, apply this knowledge to patients’ diseases and treatment plans, and master clinical skills through a series of clinical rotations. (Read more about Canadian medical schools in Chapter 14.)

It’s often said, “When you’ve seen one medical school, you’ve seen one medical school.” Each institution establishes its own curriculum and course requirements, so, for example, a particular class required by one institution is an elective course in another. Even when medical schools seem to offer identical courses, the content may differ, so some of the material covered in immunology in one school, for instance, is presented in pathology in another. The sequence in which content is learned — and the method by which the content is taught — may differ as well. Beyond that, the ways students are graded also vary from school to school, with some institutions following a pass/fail system, others an honors/pass/fail system, and still others a letter grading system. And just as the culture, campus, and personality of the undergraduate schools you considered differed, they also differ among medical schools. The way you decide which medical school is the best fit for you and your needs will likely be similar to the way you chose your college.

Medical schools must meet very exacting standards to earn and maintain accreditation, as established by the Liaison Committee on Medical Education (LCME). The **LCME**, cosponsored by the AAMC and the American Medical Association, accredits medical school programs that grant the MD degree in the United States. Accreditation by the LCME is required for schools to receive federal grants and participate in federal loan programs. In addition, eligibility of U.S. students to take the United States Medical Licensing Examination (USMLE) — discussed on [page 31](#) — requires LCME accreditation of their school. All medical schools listed in this guide are accredited by the LCME. LCME accreditation standards govern a wide breadth of areas of medical school programs and include standards related to curriculum.

Beyond accreditation requirements, the general educational content delivered by most medical schools is similar, although how the curriculum is structured, delivered, taught, and assessed differs from school to school. To learn more about each medical school's curriculum structure, refer to the AAMC's Curriculum Inventory (aamc.org/what-we-do/mission-areas/medical-education/curriculum-inventory/use-your-ci/med-school-schematics).

A Word About Preclinical Versus Clinical Years

In the past, curriculum was typically structured in a “2+2” model, where the first two years of medical school were primarily classroom-based and focused on medical knowledge, typically referred to as the “preclinical” years and now sometimes referred to as the “preclerkship” years. The second two years of medical school were primarily focused on clinical experiences. In this traditional curriculum format, students typically concentrate their efforts on the scientific underpinnings of medicine during the first two years and apply and refine that knowledge during a series of clinical rotations during the last two years.

As curricula evolve, it is increasingly common for a student to have clinical exposure in the first year of medical school, and more schools are integrating clinical and basic science learning. In the later portions of the curriculum, sometimes referred to as the “clinical years,” students refine their understanding of underlying medical concepts and apply basic science knowledge. It is important, therefore, to recognize that preclinical and clinical content can — and do — intersect at any stage in the medical school experience.

Building a Foundation of Knowledge

Generally, you'll begin your medical school studies by learning how the human body is supposed to work in terms of both structure and function. The focus will then shift to abnormal conditions and diseases, methods of diagnosis, and treatment options. In addition, there will likely be a concentrated effort toward understanding clinical disciplines and making informed decisions about future career choices. Increasingly, some medical schools are exploring teaching normal and abnormal presentations together through organ system-based courses.

Normal Structure and Function

Before you learn about illnesses and ailments, you'll learn how the healthy body works. That's what you'll be studying right out of the starting gate, and your courses will be many — and varied.

Typically, your basic classes will include gross and microscopic anatomy, physiology, biochemistry, behavioral sciences, and neurology.

Abnormalities, Diagnostics, and Treatment

After you've learned what “healthy” looks and acts like, the focus of your coursework will shift again in structure and function. You'll study the full range of diseases and atypical conditions, methods by which diagnoses are made, and therapeutic principles and treatments. At this stage, you'll have classes in immunology, pathology, and pharmacology.

Other Topics

You'll be exposed to a wide variety of other topics, such as nutrition, medical ethics, genetics, laboratory medicine, substance abuse, geriatrics, health care delivery systems, research, preventive medicine, human sexuality, and community health, to name a few. The subjects taught at medical schools are as varied, and potentially as numerous, as the institutions themselves. Topics may also vary depending on a school's geographic location, mission, and patient population.

And that's just part of the picture. There's much more to "building a foundation" than mastering the scientific basis of medicine. During this period of your medical education, you'll learn the basics of building rapport with patients, interpersonal skills, conducting physical exams, interpreting laboratory findings, and considering diagnostic treatment and alternatives — in effect, readying yourself for the clinical rotations that follow in the second half of medical school.

Finally, keep in mind that practicing medicine is not all science — or even the application of science (such as interpreting lab results to determine a course of treatment). Medical schools recognize that physicians practice in a social environment that requires effective team building, collaboration, and communication skills. As a result, the way students learn and are taught has evolved in recent years. Many medical students now also learn about health-systems, such as health care economics, patient safety, and quality improvement, and may also engage with the community to understand more about public health concerns. (This is discussed in more depth on [page 26](#) under "The Changing Face of Medical Education.")

What a Typical Curriculum Includes

The vast majority of medical schools are either in the midst of, have completed, or have just implemented a change to their curriculum. You can see more detail about curriculum change at medical schools in this [curriculum report](#). For schools with a traditional curriculum, as described on [page 23](#), a typical structure might include the following (although this is not a complete list of possible courses and does not include clerkships):

Year 1: Normal structure and function: Biochemistry, cell biology, medical genetics, gross anatomy, structure and function of human organs, behavioral science, and neuroscience. To prepare for clinical rotations, which typically begin later during medical school, clinical skills are very often, if not always, taught in Year 1 and 2 of a medical school's curriculum.

Year 2: Abnormal structure and function: Abnormalities of structure and function, disease, microbiology, immunology, pathology, and pharmacology.

Years 3 and 4: Clinical clerkships: Generalist core topics include family medicine, internal medicine, obstetrics and gynecology, pediatrics, and surgery. Residency preparation and application also occurs during this time.

Other requirements: Neurology, psychiatry, anesthesiology, dermatology, urology, radiology, emergency medicine, and electives and/or selective courses.

Acquiring Hands-On Experience Through Rotations

A major component of your undergraduate medical education, typically during the third and fourth years, will be a series of clinical rotations that usually last four to six weeks each. Under direct supervision of faculty members, you'll get firsthand experience working with patients and their families in inpatient and outpatient settings.

What You'll Do

During a rotation, you'll be assigned to an outpatient clinic or inpatient hospital unit where you'll assume responsibility for "working up" a number of patients each week — speaking with patients and family members, collecting relevant data and information from them, and presenting findings to a faculty member. Communication, interpersonal skills, interprofessional and collaborative skills, clinical reasoning, and clinical environment operation procedures are also taught and evaluated. Beyond that, you'll participate in the ongoing

care of patients, either during hospitalizations or through the course of outpatient treatment. When appropriate, you'll interact not only with the patients but also with their families. Beyond the traditional clinical rotation opportunities, service-learning opportunities or preceptorships that include clinical experiences are often available.

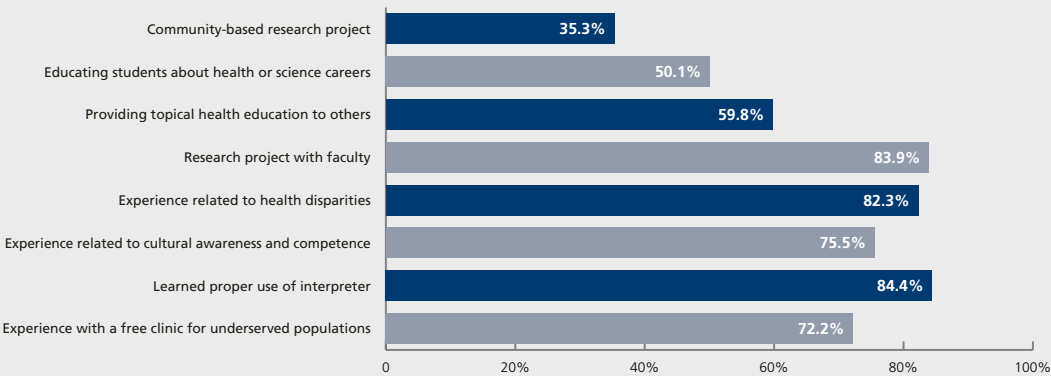
And What You'll Learn

There's no substitute for hands-on experience — and plenty of it. Mastery in any field is aided by deliberate, repetitive practice with supervision and helpful feedback. During the course of your rotations, you will learn to apply basic science knowledge and clinical skills in diagnosing and treating patients' illnesses and injuries and will become adept at interacting with patients (and their families) as you provide information, answer questions, and prepare your patients for likely outcomes. At the same time, you'll become effective at working with all members of the health care team, whether at the bedside, during inpatient team discussions ("rounds"), or in case-based lectures and small-group discussions.

Electives

Just like your undergraduate years, you'll get to explore special interests and potential career paths through selectives and electives. Offered in basic behavioral clinical sciences and health systems as well as in basic and clinical research, electives are usually available your final year of medical school (although you might be able to take them other times). They may be completed on your own campus, at other medical schools through a visiting student program, through federal and state agencies, in international settings, and through service organizations. Medical students participate in a broad range of activities. The most popular ones are shown in Figure 3.1.

Figure 3.1. The most common elective and volunteer activities in medical schools, by percentage of students who participated.



Source: AAMC 2021 Graduation Questionnaire (GQ).

The AAMC **Visiting Student Learning Opportunities™** (VSLO®) program enables medical and public health students to pursue short-term learning opportunities in locations away from their home institutions. Program participants include medical and public health students and institutions in the United States and around the globe.

The Changing Face of Medical Education

You may have heard of Abraham Flexner, who wrote a groundbreaking report on medical education in 1910, when many medical schools were small trade schools unaffiliated with a university and a degree was awarded after only two years of study. Although the basics of his model have survived to the present day — mainly, a four-year program affiliated with a university — he never intended it to serve for more than a generation. After all, no one can predict the future.

Time has certainly proven it to be a successful model.

There's no way that Flexner could have anticipated the shifting demographics, technological advances, and evolving teaching techniques of the late 20th and early 21st centuries. According to the U.S. Census Bureau, the U.S. population over age 65 is expected to be almost 74 million by 2030 — accounting for one in every five Americans. Demographics such as that, together with advanced technologies, scientific discoveries, and evolving teaching techniques, all contribute to significant changes in medical education. You will experience firsthand the reforms taking place in medical education, in terms of both what you will learn and how you will learn it. Your courses may range from cultural competency to health care financing, and how you will benefit from educational developments such as computer-aided instruction, virtual patients, and human patient simulation.

What You'll Learn

You will likely wield a scalpel in anatomy class early on in medical school, just as students in our parents' and grandparents' generations did 30 and 60 years ago. That type of activity aside, though, there have been many significant changes in medical education content, and schools are continually revising their curricula to reflect advances in science, breakthroughs in medicine, and changes in society. For example:

- Consider the demographic shift we'll experience as the baby boomers age. Physicians will spend an increasing amount of time treating age-related problems such as Alzheimer's disease, heart failure, pulmonary disease, and bone disorders. As a result, most medical schools now include in their curricula content on geriatrics, palliative care, pain management, complementary medicine, and other similar patient population-specific material. Medical schools are also increasingly focused on covering patient population-specific content that varies not only based on patient age, but also based on gender and sexual identity, socioeconomic background and status, military service, and other factors.
- Issues such as health literacy, nutrition, drug abuse, and domestic and intimate partner violence are now important components of medical education. Because many of these and other health problems are related to culture and socioeconomic background and status, medical schools are increasingly focusing on areas such as preventive medicine, health promotion, population health, and cultural diversity.
- Medical schools are focusing more on helping their students develop effective communication and interpersonal skills so they can interact successfully with a diverse group of patients and health professions colleagues. You'll be taught specifically how to assess family, lifestyle, and socioeconomic factors that may influence your patients' behavior or their care, and how to effectively collaborate with members of the health care team.

Then, of course, there are advances in science and medicine. As researchers make breakthroughs in genetic diagnoses and treatments, for instance, that new knowledge is incorporated into the medical school program. There are also expanded courses on medical ethics, examining some of the dilemmas physicians may face amid the advent of new technology; classes on health care economics, which includes instruction on cost of care, value-based care, how to explore patient affordability for treatments, and the health care insurance system; and sessions on evidence-based medicine, patient safety, and quality, providing students with the information and tools they will need to deliver the best possible care. Some examples of topics now included in medical education are shown in Table 3.1.

The topics described here are only an overview of some possibilities. The specific courses you'll take as a medical student will depend on the school.

Table 3.1. Number of Medical Schools Requiring Given Topics

Specialty	Number of Medical Schools Requiring the Topic*	Specialty	Number of Medical Schools Requiring the Topic*
Law and Medicine	144	Prevention/Health Maintenance	153
Cultural Competence	153	Health Care Systems	149
Pain Management	153	Patient Safety	153
Public Health Systems	151		

*n = 153.

Source: 2019-2020 LCME Part II Annual Medical School Questionnaire.

How You'll Learn

Do you imagine sitting in a large lecture hall, surrounded by hundreds of your peers? While you may experience that aspect of medical school, that method of teaching is being replaced (to a significant degree) by other techniques. Here are a few of the most widespread methods:

- The traditional lecture-based approach is increasingly giving way to student-centered, small-group instruction — similar to the case study teaching method common in both law and business schools. You may be assigned to small groups of students — overseen by a faculty member — in which you'll focus on specific clinical problems. The aim is to instill medical knowledge and skills, as well as help you build the communication and collaboration skills you'll need as you continue your medical training and, ultimately, as a fully licensed physician.
- Fast-moving technological advances have certainly affected the medical school education program. You'll probably use a computerized patient simulator to apply the basic sciences you've mastered to a clinical context and refine your diagnostic skills. These simulators, easily customized to replicate a wide range of situations, are currently part of the curriculum in most medical schools. They are often customized to cover many aspects of a clinical encounter and offer medical students easy access to a range of medical situations. Human patient simulators allow students to engage in emotional and sensory learning. These interactive experiences foster critical thinking and effective communication skills. You're also likely to have some learning experiences with simulated or standardized patients in which you interact with a real person trained to portray a patient case. Standardized patients (SPs) can be especially helpful when learning history taking, physical examination, and communication skills, among other skills.
- Another way medical schools use new technology is with computer-aided instruction and virtual patients. You'll apply newfound knowledge and skills via interactive web-based or software programs that simulate complex cases. Some advantages of computer-aided instruction are that it:
 - Enables visualizing complex processes.
 - Allows independent exploration.
 - Offers easy access.
 - Costs relatively little.

To learn more about the specific teaching methods of the medical schools you're interested in, please refer to the applicable school listing on the [MSAR website](#).

Determining How You Want to Practice Medicine

Required courses. Clerkships. Selectives and electives. There's a lot occupying your time and energy as you advance through medical school. At the end of your third year and the beginning of your final year, you'll prepare to apply to residency programs. But before you can apply, you must make some serious decisions about how you want to practice medicine and identify the additional medical training that will prepare you for that work.

Choosing a Specialty

Choosing a medical specialty is one of the most significant decisions you'll make during medical school, and the process can be daunting. No one can prescribe which specialties are best for you. Making a good specialty decision requires you to be proactive. You'll likely begin the process of figuring out which specialties align with your interests, talents, and passions soon after you enter medical school.

The first step in choosing a specialty involves exploring what you want in your medical career. You can do this by:

- Observing and evaluating what you enjoy and what makes you happy across your experiences before and during medical school.
- Objectively considering your career preferences using the Careers in Medicine® self-assessments.
- Engaging in specific activities that can help with your decision, such as shadowing physicians to learn about the work they do to find out whether you might enjoy it.

As a result of such efforts, you'll better understand your interests, values, skills, and other attributes, as well as your personal, educational, and career goals. This information will be most useful as you gain firsthand exposure to specialties during your clinical rotations, which occur in the last two years of medical school. These rotations will be your most concentrated opportunity to try different specialties. If by the start of your rotations you've already thoroughly considered who you are and what you want for your career, your rotations will provide much more insight for you.

Applying for Residency

Once you have chosen a specialty or various specialties of interest, you can begin researching residency programs to find ones that are right for you. As you begin the application process, you can use the Residency Explorer™ tool. This free research tool allows you to find individual residency programs in various specialties, compare yourself to previously matched applicants and residents entering a program, and explore program characteristics across many areas of interest. Please note that the Residency Explorer tool does not advise you where to apply or predict whether you will match with a residency program. It is intended to help you develop a list of programs you are interested in applying to.

Applying to a residency program is similar to applying to medical school. You apply and submit your supporting documents online and go through an interview process — except this time, it's with a hospital program for a job opportunity. Most medical students start the process of applying to residency during their third or fourth year. The **Electronic Residency Application Service® (ERAS®)** is the centralized online application service you will use to deliver your application, along with supporting documents, to residency programs.

Once you have submitted your application and supporting documents to your chosen residency programs, you will interview with interested programs. Once you complete all interviews, you will learn if you matched with a residency program on a specific date and time assigned by the matching service your specialty participates in. There are three matching services: the National Resident Matching Program® Main Residency Match® (which most residency programs participate in), the Urology Residency Match Program, and the Joint Services Graduate Medical Education Selection Board's program, referred to as the "military match."

You can follow Match Day celebrations on social media by using the hashtag #Match2022. Match Day links will be posted on the AAMC's Premed Facebook (facebook.com/aamcpremed) and Twitter (@AAMCPreMed).

Getting Help

Determining which career path is right for you, as well as navigating the specialty choice and residency application and match process, is a lot for someone to manage alone — and you shouldn't. Many resources and people (including your offices of student affairs and career services, mentors, and advisors) are available to help you make wise decisions about your future career.

One key resource is **Careers in Medicine** (CiM), a career planning program created by the AAMC available to medical students and medical schools. Through its website (aamc.org/cim), CiM provides information, best practices, data, and tools to help you:

- Identify career goals.
- Explore specialty and practice options.
- Choose a specialty.
- Select and apply to residency programs.
- Make well-informed career decisions.

Here are some examples of what the CiM website offers:

- Self-assessments that help you explore your interests, values, and skills so you can identify specialties that might fit you well.
- A database of clinical and research opportunities available to you during medical school.
- Profiles of more than 135 specialties, which include:
 - Descriptions of the work.
 - Salary and lifestyle information.
 - Workforce data.
 - Length of training.
 - Residency interview timing.
 - More than 1,000 links to additional specialty resources.
- Information about various practice settings.
- Lots of guidance and advice.

For more information about how to access CiM, visit aamc.org/cim.

CiM works in conjunction with medical schools' career-planning and advising services. Medical schools are required to provide advisors (formally or informally) to help students plan their academic and professional career. These services are often organized and delivered by the student affairs office or career center and can include workshops, specialty interest groups and panels, networking receptions, and other career-related resources and opportunities.

Sometime in your first year, your medical school will likely start talking to you about exploring your career options and planning your medical career, explaining the career planning and advising services it offers. (If you'd like to start exploring your career sooner, contact your school's student affairs or career services office.) Once your third year begins, your school will likely provide more intensive support by, for example, explaining the processes of and noting deadlines for choosing a specialty and applying for residency. This valuable information will come in various forms, including emails and in person from your student affairs office, your career services office, and your advisors.

Career planning will occur throughout your medical school experience, often within your curricular activities. Often, students are given dedicated time in their fourth year of training to fine-tune career exploration opportunities. As you complete your medical degree, faculty, staff, and advisors will be a source of trustworthy advice that will help guide you toward a satisfying career as a physician.

We won't go into detail about postgraduate work here, since you won't need those details until later. But, in a nutshell, the primary purpose of graduate medical education (GME) is to give medical school graduates the skills and knowledge they need to become competent, independent physicians in their desired specialty.

Residency and Fellowship Training

Residency training — the first level of GME — ranges in length from three to eight or more years and is necessary for board certification. (Refer to Table 3.2.) Residency programs are conducted primarily in clinical settings

Table 3.2. U.S. Residents by Specialty, 2019-2020

Specialty	Number of U.S. Residents
Allergy and Immunology	308
Anesthesiology	6,698
Colon and Rectal Surgery	106
Dermatology	1,594
Emergency Medicine	8,293
Family Medicine	13,725
Hospice and Palliative Medicine	374
Internal Medicine*	1,511
Medical Genetics	60
Neurological Surgery	1,515
Neurology	3,062
Nuclear Medicine	78
Obstetrics and Gynecology	5,677
Ophthalmology	1,512
Orthopedic Surgery	4,342
Otolaryngology	172
Pain Medicine	386
Pathology-Anatomic and Clinical	2,324
Pediatrics	9,323
Physical Medicine and Rehabilitation	1,453
Plastic Surgery	226
Plastic Surgery-Integrated**	961
Preventive Medicine	347
Psychiatry	6,618
Radiation Oncology	771
Radiology-Diagnostic	4,551
Sleep Medicine	182
Surgery-General	8,809
Thoracic Surgery	236
Thoracic Surgery-Integrated**	193
Urology	1,734

*The most popular subspecialties declared by U.S. residents in 2018-2019 in internal medicine (total: 29,243) were cardiovascular disease (3,105), gastroenterology (1,792), hematology and oncology (1,843), and pulmonary disease and critical care medicine (1,999).

**Integrated programs differ from subspecialty programs in that they include core surgical education.

Source: AGME Data Book, 2020 for the 2020-2021 academic year.

(for example, in hospitals, outpatient clinics, community health centers, and physicians' offices) and require residents to participate fully in patient diagnoses and treatment. As a resident, you'll work under the supervision of physician faculty as you develop experience in your chosen specialty, become proficient with common and uncommon illnesses and conditions, attend conferences, teach less-experienced colleagues, and generally adjust to the demands of practicing medicine.

Just as medical schools vary, so do residency programs. Depending on the specialty you choose, you might complete a preliminary year of broad clinical training before focusing on your specialty. This practice is common in anesthesiology, dermatology, and radiology. In other fields, such as family medicine and pediatrics, you'll enter the specialty track directly. (Your medical school advisor and the CiM program can provide more information as you approach this stage of your medical education.)

After residency training, you can continue your graduate medical education by completing fellowship training. This second level of GME usually prepares physicians to subspecialize, but some fellowships are for training in other areas, such as research or education administration.

Graduate medical education can be a challenging and rewarding stage of your career. Many physicians look back on their residency and fellowship years as a time when they gained invaluable lessons that they carry with them throughout their career.

Interprofessional Education

The delivery of medical care is increasingly a team-based, collaborative effort that includes doctors, nurses, pharmacists, physical therapists, and other health care professionals. Caring for a patient effectively and efficiently depends on practitioners from all disciplines becoming familiar with one another's roles, perspectives, languages, and communication styles.

Because medical educators across the levels of medical education want to help you develop

your knowledge and ability, your medical education is likely to involve some form of interprofessional education. You'll learn to share resources, work as a unit, and participate in other activities that encourage interaction among various categories of health care providers. Through these exercises, you'll all become more adept and successful working as a team and, ultimately, be able to deliver higher-quality patient care.

Licensure and Certification: Ready to Practice Independently

All medical school graduates must demonstrate command of the same fundamental concepts before becoming licensed physicians. Physicians' mastery of these fundamentals is ensured through the standards of the **National Board of Medical Examiners** (NBME) and the **Federation of State Medical Boards** (FSMB). These two bodies jointly sponsor the **United States Medical Licensing Examination** (USMLE). This exam is the final assessment of your ability to assume independent responsibility for delivering medical care and is administered in three steps, each at a particular stage of medical education:

- **Step 1:** Usually taken at the end of your second year of medical school, Step 1 tests whether you understand and can apply sciences basic to the practice of medicine. Its focus is on principles and systems of health, disease, and methods of therapy.
- **Step 2:** Many medical schools require you to take and pass Step 2 before you graduate. It's actually two tests in one — the first evaluates your clinical knowledge (CK) and the second your clinical skills (CS). Basically, Step 2 assesses your ability to provide patient care under supervision.
- **Step 3:** After you've completed your first year of residency training, you're eligible for Step 3 — the concluding test that determines your readiness to apply your medical knowledge and clinical skills without supervision, with an emphasis on patient management in outpatient settings.

After you complete your educational and training programs and achieve passing scores on the USMLE, you can apply for licensure in any of the 50 states, 10 Canadian provinces, three U.S. territories, and the District of Columbia.

But... there is one additional step: certification. Although it's not required for medical practice, as licensure from a state or provincial medical board is, certification in a specialty is strongly encouraged. Physicians apply voluntarily for this additional credential, which is granted by the American Board of Medical Specialties (ABMS) and involves a comprehensive exam. Those who have satisfied all ABMS requirements are certified and known as "diplomates" of the specialty board.

Continuing Medical Education: Lifelong Learning

Finally, as you likely have realized, your medical education will be a lifelong process. As medicine continues to advance and change, you'll have opportunities to learn new skills to stay current with exciting and innovative developments.

The fast pace of change in medicine makes continuing education essential, so most states require participation in accredited continuing medical education (CME) activities. Physicians participate in CME programs throughout their careers, ensuring they stay up to date with the rapid advancements in their specialties and maintain their clinical competence. Offered by medical schools, teaching hospitals, and professional organizations, these CME programs are reviewed by the **Accreditation Council for Continuing Medical Education** to ensure that such programs achieve and uphold high standards.

CME reflects a commitment to lifelong learning that's a hallmark of the medical profession. If you're interested in what your CME efforts will entail, go to accme.org.



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 3.1

Thinking About Medical Specialties

First things first: You do not need to know your medical specialty now — or even need to be thinking about it. However, many applicants envision themselves in a specialty before beginning medical school based on prior experiences and medical interests.

The second thing to keep in mind: Changing your mind about what type of physician you want to be is not a sign that you're less committed to the profession. We know from responses to the AAMC Matriculating Student Questionnaire (MSQ) and Graduation Questionnaire (GQ) that most medical students are either undecided or change their minds about their specialty preference during medical school. It's natural and expected that your choices will evolve as you gain new educational and clinical experiences. Keep your options open to allow for new experiences to inspire you.

That said, if you're an applicant with some exposure to specialties before medical school, you may find it helpful to keep a journal or notes about your experiences while they're fresh in your mind, which you can use once you enter medical school and begin the [CiM program](#). You'll likely find it helpful to refer to these notes once you've matriculated as you progress through medical school.

Here are some prompts to help you consider your specialty experiences:

- Do you have a specialty or specialties in mind? _____

- What is your experience with that specialty? _____

- Have you shadowed in that specialty with different physicians or in different settings? _____

- Have you shadowed in more than one specialty? If so, list them here: _____

- Take a moment to compare your experiences. Write down how they were similar and different and how you felt about each. _____

You can also visit your school's career center for more guidance about exploring medical careers. A career center may help you find shadowing and other opportunities that can expose you to career options. You could also speak with people who have already completed any experiences you're considering.

A note about shadowing: In recent years, due to the Health Insurance Portability and Accountability Act, or HIPAA, it may be more difficult to obtain permission to shadow a physician. Some programs facilitate paid experiences domestically and abroad, though they can be quite expensive. Check with your prehealth advising office to see if they have experience with a particular program to make sure it's legitimate and safe.

For more information about shadowing, lab, and volunteer experiences, refer to:

- **Shadowing a Doctor** — aamc.org/shadowing
- **Getting Lab Experience** — aamc.org/research-experience
- **Finding Health Care-Related Volunteer Opportunities** — aamc.org/healthcare-volunteer

Building Toward Greater Diversity



Christiana Obioma

University of Oklahoma College of Medicine
Class of 2023

"As a Nigerian-American student, diversity has always been an important aspect of my life. When I began the journey to pursue a career in medicine, I quickly learned how vital diversity and inclusion are to the medical field.

After completing the health care specialist training in the United States Army, I began volunteering extensively in communities and clinics with diverse backgrounds and unique challenges. Reflecting on my interactions with patients and observing physician-patient interactions made me realize

that it is imperative that the physician population is tailored to cater to the diverse patient populations in the United States.

Building a team of diverse health care professionals is a continuous process that, to me, starts with early medical and health literacy. With this core belief, it was important to me to attend a medical school that constantly worked to promote and incorporate diversity and inclusion in their curriculum. That is why I decided to attend the University of Oklahoma College of Medicine.

The disparities in morbidity and mortality I observed during the COVID-19 pandemic are some of the key reasons it's essential for medical schools to recruit and educate a diverse student population. A diverse physician workforce will provide better patient care. It is vital to promote and teach equality in health care when serving people from different backgrounds, cultures, socioeconomic status, and sexual orientation. Promoting a diverse future physician population able to relate to different patient populations will foster a physician-patient relationship that focuses on the patient as a whole — not just the disease. I hope such a workforce will also greatly reduce disparity in health care.

A medical curriculum with early promotion of diversity and inclusion will better foster physician-patient relationships rooted in trust, empathy, and understanding. This will ultimately result in improved patient outcomes and health."

Defining Diversity

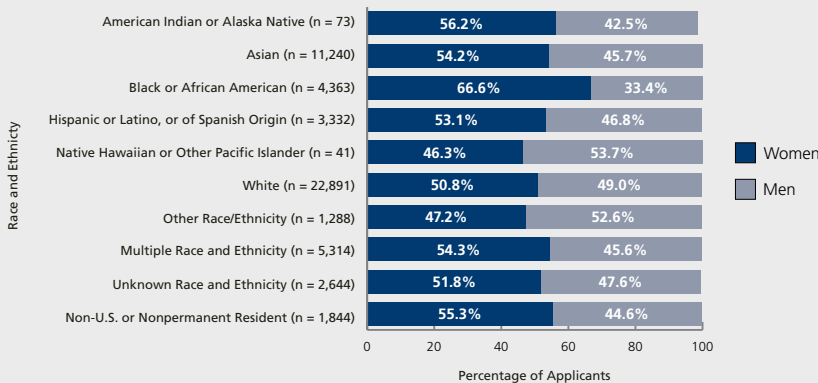
When people hear the word *diversity*, many only probably think in terms of race and ethnicity. And while it is certainly important to have more racial and ethnic minority populations represented in medicine, the concept of diversity is much more expansive.

Diversity refers to the richness of human differences — socioeconomic status, race, ethnicity, language, nationality, sex, gender identity, sexual orientation, religion, geography, disability, age, and individual

aspects such as personality, learning styles, and life experiences. Let’s look at diversity through the lens of available AAMC data.

- **First, consider race and ethnicity.** While diversity extends beyond this particular characteristic, it remains a critical component. The data show, for example, that just 8.2% of applicants identified as Black or African American only, 6.3% identified as Hispanic or Latino only, and 0.1% identified as American Indian or Alaska Native. (Refer to Figure 4.1.)

Figure 4.1. Applicants to U.S. medical schools by race/ethnicity (alone) and sex, 2020-2021.

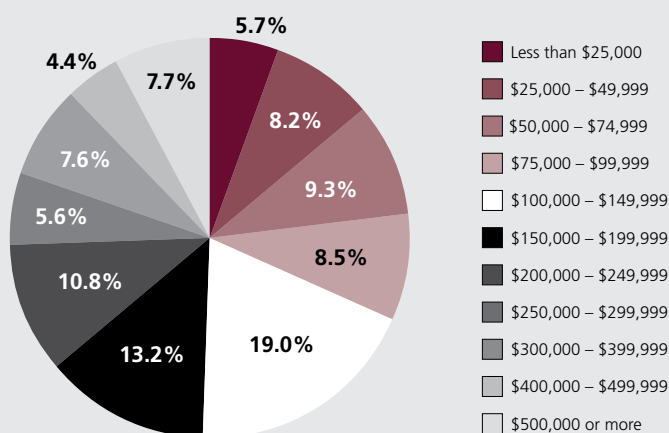


Note: Applicants who did not report sex were excluded. “Alone” refers to race/ethnicity data that are displayed for individuals who selected only a single racial/ethnic category. The “Multiple Race/Ethnicity” category includes those who selected more than one race/ethnicity response.

Source: AAMC Data Warehouse, Applicant Matriculant File.

- **What about family income?** Data show this is an area of great imbalance, and there is a need for greater socioeconomic diversity in medicine. Parental income of students entering medical school skews heavily to the upper range, with a median income of \$140,000. (That’s almost double the estimated U.S. median family income of \$78,500 in 2020, reported by the U.S. Census Bureau.) One in four students comes from a home in which their parents earn \$250,000 or more a year. (Refer to Figure 4.2.)
- **Another perspective — sex.**
For the second year in a row, women made up the majority of students enrolled in MD-granting institutions. In 2020-2021, women made up the majority of applicants within each race/ethnicity except for those who identified as Native Hawaiian or Other Pacific Islander or Other Race/Ethnicity. Additionally, as Figure 4.1 displays, there are significantly fewer Black or African American men applicants than applicants from other groups. In 2015, the AAMC published *Altering the Course: Black Males in Medicine* to better understand this trend and explore solutions (aamc.org/blackmalesinmed).
- **Benefits of diversity extend beyond education.** Increased diversity brings benefits that extend beyond the classroom. Research has shown that diversity in the physician workforce contributes to increased access to health care. Diversity among clinician scientists has been linked to an increase in research dedicated to diseases that disproportionately affect racial and ethnic minorities.

Figure 4.2. Parental income of entering medical students, 2020.



Source: AAMC 2020 Matriculating Student Questionnaire (MSQ).

AAMC Programs and Resources

The AAMC is committed to improving health for all. Considering the benefits of diversity, the AAMC is engaged in a number of programs and initiatives to help increase diversity to include students from a broad range of backgrounds. While these programs are open to all students, they are tailored to the challenges and needs of individuals from groups underrepresented in medicine. Here are some of these initiatives:

Career Fairs and Enrichment Programs

Medical schools throughout the country provide various programs and resources designed to recruit students and prepare them for medical education. Often referred to as pipeline, pathway, or enrichment programs, some are held during the school year and others are in the summer. They are designed for high school students, college students, and those who already have completed undergraduate study. It's a good idea to explore your local medical school's website to see what opportunities may be available.

The AAMC sponsors several programs:

- Minority Student Medical Career Fair.** This event is typically held each fall in conjunction with Learn Serve Lead: The AAMC Annual Meeting. Students are encouraged to come explore the possibilities in medicine and science. College and high school students, parents, prehealth advisors, school administrators, and others interested in careers in medicine and science can meet diversity affairs and admissions officers from U.S. medical schools and other health professions schools. Topics for discussion include medical school preparation, enrichment programs, admissions policies and procedures, financial aid, and more. Attendees can also participate in interactive medical and health activities and workshops. The AAMC also hosts other career fairs in conjunction with meetings for admissions officers, student affairs staff, and biomedical researchers. Information about these events is available at aamc.org/medicalcareerfair.
- Summer Health Professions Education Program (SHPEP).** The Robert Wood Johnson Foundation's Summer Health Professions Education Program is a free, six-week academic enrichment program for college freshmen and sophomores interested in careers in medicine, dentistry, pharmacy, nursing, public health, optometry, physical therapy, and physician assistant roles. Components of the program include science- and quantitative-based courses, learning and study skills seminars, career development activities,

clinical experiences, integration of wellness topics, and a financial planning workshop. Funded by the Robert Wood Johnson Foundation and offered at 12 U.S. academic health centers, the program includes a stipend, housing, meals, and travel assistance. For additional information, visit shpep.org.

- **Medical School Virtual Fair.** Since 2016, the AAMC has connected with more than 70,000 aspiring medical students and applicants through its annual Virtual Medical School Fair. This virtual event connects aspiring medical students and applicants with medical school admissions officers, prehealth advisors, representatives of centralized application services, and other medical school staff from across the United States and Canada. The event is free for attendees and provides the opportunity to connect virtually with admissions officers as well as AAMC staff with expertise in admissions, diversity affairs, financial aid, the MCAT exam, AMCAS application, and SHPEP, among other topics.

Aspiring Docs® — An AAMC Resource to Increase Diversity in Medicine

Having a diverse workforce of physicians and scientists is essential to providing the best care and improving the health of all.

The AAMC's Aspiring Docs® website provides resources and inspiration to help you get started on your path to medicine. The website includes inspiring stories from medical students and doctors about how they overcame challenges, videos of medical students answering questions from applicants, and one-page fact sheets to help you prepare to apply. To see what other applicants are saying about being a premed, and to read what medical students and residents are doing every day, follow the Aspiring Docs Diaries blog (aspiringdocsdiaries.org). You can email aspiringdocs@aamc.org if you'd like to submit a blog post!

Anatomy of an Applicant

Through the Anatomy of an Applicant resource project, the AAMC seeks to amplify the stories of diverse medical school applicants and demystify the core competencies to encourage and shape future applicants' pathways to medical school.

The Anatomy of an Applicant project features interview excerpts from medical students, their prehealth advisors, and the admissions officers who accepted them to get an insider's perspective of their pathway to medicine and how they demonstrated the core competencies for entering medical students through the different parts of their application. To see what former applicants have to say about their nontraditional journeys to medical school, read through the Anatomy of an Applicant profiles (aamc.org/corecompetencies).

Additional AAMC Resources

The AAMC also offers a wide variety of publications, online tools, and other information on the Minorities in Medicine website at aamc.org/students/minorities and the Diversity and Inclusion website at aamc.org/diversity. Among the resources you will find are:

Medical Students With Disabilities: Resources to Enhance Accessibility. This guide informs users about current resources available to medical schools as they accept and matriculate a growing number of medical students with a wide range of disabilities. Specifically, this publication emphasizes the assistive technologies available for medical students. You can order a copy of this guide at members.aamc.org/eweb/DynamicPage.aspx?webcode=PubHome.

Summer Enrichment and Pipeline Programs. This site includes a free database to help students locate summer enrichment programs on medical school campuses. You can search by school, state, region, area of focus, and length of program. Go to services.aamc.org/summerprograms to explore programs of interest.

Medical Minority Applicant Registry (Med-MAR). During the MCAT registration, students who are economically disadvantaged or from racial and ethnic groups historically underrepresented in medicine can select the Medical Minority Applicant Registry (Med-MAR) option to be included in the registry. This web-based program provides medical schools with basic biographical information and MCAT scores of registered examinees, thereby giving institutions opportunities to enhance their diversity efforts. Go to aamc.org/medmar for more information.

For information about the definition of “underrepresented” in medicine, visit aamc.org/urm.

Fee Assistance Program. The AAMC believes that the cost of applying to medical school should not be an insurmountable barrier. The AAMC’s Fee Assistance Program is available to students whose financial limitations would otherwise prevent them from taking the MCAT exam or applying to medical school.

Details about the Fee Assistance Program can be found at aamc.org/students/applying/fap and in Chapter 7 of this guide.

Data About Applicants, Matriculants, and Graduates. The AAMC collects and presents detailed data about medical students from different racial and ethnic groups. Most of the data are available free of charge on the AAMC website (and a good deal are included in this guide). (Refer to Table 4.1 at the end of this chapter.) Several resources are likely to be of interest:

- A large collection of data about medical school applicants, matriculants, and graduates are available on the AAMC website at aamc.org/facts.
- The AAMC publication *Diversity in Medicine, Facts and Figures 2019* provides race and ethnicity data on medical school applicants, accepted applicants, matriculants, enrollment, graduates, and faculty. You can access the full report without charge at aamc.org/data-reports/workforce/report/diversity-medicine-facts-and-figures-2019. (This report is updated every three years.)
- Data on medical school faculty, including self-identified information, can be found at aamc.org/data-reports/faculty-institutions/report/faculty-roster-us-medical-school-faculty.

School Programs and Resources

Just as the AAMC is committed to diversity and inclusion, colleges and medical schools are also invested in making medical education accessible to all. Explore these other resources as well.

Premedical School Programs at Undergraduate Colleges. Prehealth advisors have an abundance of information and data at their fingertips. Not only can they help you with the application process and refer you to appropriate contacts, they also know about programs that students from underrepresented groups and disadvantaged backgrounds have found useful.

If your college has a prehealth advisor (and most do), make sure you take advantage of this valuable resource.

Medical School Websites. In addition to the individual profiles in the Medical School Admission Requirements™ website, you’ll want to explore the medical school websites for information on their diversity programs and resources. Go to aamc.org/medicalschoools for a listing of all U.S. and Canadian MD-granting medical schools.

Medical School Diversity Affairs Representatives. Other invaluable resources are medical school diversity affairs representatives. These individuals are dedicated to increasing diversity among medical schools at their institutions and are an excellent source of information for applicants (or potential applicants). You can find contact information for diversity affairs representatives at any U.S. medical school in the Directory of Diversity Affairs Representatives database. It’s searchable by name, location, and institution: members.aamc.org/eweb/StartPage.aspx?Site=AAMC.

Contact information is also available within each medical school profile on the Medical School Admission Requirements website at aamc.org/msar.

Financial Assistance for Medical School. Don’t let the cost of medical school deter you from your dreams. As you’ll learn in Chapter 10, more than four-fifths of medical students across the country receive some form of financial assistance. Medical schools — both public and private — work hard to offer a variety of financial aid plans to ensure that capable students are not denied access to their institutions because of financial limitations. In addition to discussing possibilities for assistance with the financial aid officer at the medical schools that interest you, you should familiarize yourself with general information about financing

a medical education by reading the relevant material in this guide and reviewing the information about loans and other programs at aamc.org/first.

Programs at Medical Schools. Once you’ve enrolled in medical school, you’ll find a variety of academic and personal support programs are available to you. These programs help students from various backgrounds to successfully complete their medical studies, with the ultimate goal of increasing diversity among physicians entering careers in patient care, teaching, and research and eliminating racial and ethnic disparities in health care.

To explore the benefits of diversity, we suggest the following essential readings:

Alsan M, Garrick O, Graziani G. Does diversity matter for health? Experimental evidence from Oakland. *American Economic Review*. 2019;109(12):4071-4111.

Antonio AL, Chang MJ, Hakuta K, Kenny DA, Levin S, Milem JF. Effects of racial diversity on complex thinking in college students. *Psychological Science*. 2004;15:507-510.

Denson N, Chang M. Racial diversity matters: the impact of diversity-related student engagement and institutional context. *American Educational Research Journal*. 2009;46(2):322-353.

Gurin P. The compelling need for diversity in higher education: expert testimony in Gratz, et al. v. Bollinger, et al. *Michigan Journal of Race and Law*. 1999;5:363-425.

Marrast LM, Zallman L, Woolhandler S, Bor DH, McCormick D. Minority physicians’ role in the care of underserved patients: diversifying the physician workforce may be key in addressing health disparities. *JAMA Intern Med*. 2014;174(2):289-291.

Saha S, Guiton G, Wimmers PF, Wilkerson L. Student body racial and ethnic composition and diversity-related outcomes in US medical schools. *JAMA*. 2008;300:1135-1145.

Smith DG. *Diversity’s Promise for Higher Education: Making It Work*. Baltimore, MD: The Johns Hopkins University Press; 2009.

Smith DG and Associates. *Diversity Works: The Emerging Picture of How Students Benefit*. Washington, DC: Association of American Colleges and Universities; 1997.

Whitla DK, Orfield G, Silen W, Teperow C, Howard C, Reede J. Educational benefit of diversity in medical school: a survey of students. *Academic Medicine*. 2003;78:460-466.

No Advisor? Contact the NAAHP for Help

If your institution does not have a prehealth advisor, you can contact the **National Association of Advisors for the Health Professions** (NAAHP). The NAAHP website offers a list of NAAHP members who have volunteered to help students without access to a prehealth advisor from a distance. Learn more about what prehealth advisors do and how to locate one at naahp.org/student-resources/find-an-advisor.

Table 4.1 Matriculants by U.S. Medical School and Race/Ethnicity (Alone or In Combination), 2020-2021*

State	Medical School	American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Unduplicated Total
AL	Alabama	5	33	13	8	0	134	8	186
AL	South Alabama	0	5	11	1	0	53	2	74
AR	Arkansas	4	22	11	6	0	131	7	173
AZ	Arizona	7	36	6	27	0	57	9	117
AZ	Arizona Phoenix	1	29	1	13	0	56	5	100
CA	California	0	65	5	23	0	37	9	130
CA	California Northstate	0	60	0	3	0	25	7	101
CA	Kaiser Permanente-Tyson	1	18	7	11	1	17	5	50
CA	Loma Linda	2	62	19	19	1	69	5	168
CA	Southern Cal-Keck	0	75	16	33	0	61	13	186
CA	Stanford	1	21	14	14	0	26	8	90
CA	UC Berkeley/SF Joint Prog	0	8	0	1	0	11	1	17
CA	UC Davis	2	31	14	46	1	31	8	127
CA	UC Irvine	1	32	12	17	1	36	8	104
CA	UC Riverside	3	26	11	25	0	14	5	78
CA	UC San Diego	5	55	7	15	2	51	10	133
CA	UC San Francisco	5	53	30	39	0	54	3	161
CA	UCLA Drew	0	4	10	7	0	3	0	24
CA	UCLA-Geffen	0	59	14	15	0	53	11	151
CO	Colorado	3	30	10	11	2	96	10	155
CT	Connecticut	0	23	14	6	0	60	3	110
CT	Quinnipiac-Netter	1	12	11	12	0	62	5	94
CT	Yale	1	31	10	15	0	41	11	100
DC	George Washington	1	51	20	16	1	90	10	178
DC	Georgetown	0	54	12	19	1	106	10	203
DC	Howard	5	12	85	12	1	10	2	118
FL	FIU-Wertheim	1	33	13	36	1	49	9	120
FL	Florida	0	40	20	21	0	68	3	135
FL	Florida Atlantic-Schmidt	0	16	4	12	1	34	5	65
FL	Florida State	0	15	13	25	1	63	3	120
FL	Miami-Miller	0	38	27	49	0	101	11	204
FL	Nova Southeastern-Patel	0	10	5	13	1	23	4	50
FL	UCF	0	31	4	10	0	66	6	120
FL	USF-Morsani	5	55	8	28	1	98	6	189
GA	Emory	0	34	27	11	0	62	1	136
GA	MC Georgia Augusta	4	75	23	18	3	125	6	240
GA	Mercer	0	23	15	6	0	80	2	125
GA	Morehouse	2	8	93	4	0	8	3	105
HI	Hawaii-Burns	1	64	0	3	12	17	1	77
IA	Iowa-Carver	1	31	4	12	0	112	2	152
IL	Carle Illinois	0	16	5	2	1	27	3	47
IL	Chicago Med Franklin	0	71	7	3	0	88	9	189
IL	Chicago-Pritzker	0	36	15	11	0	30	5	90
IL	Illinois	5	73	47	48	0	129	7	299
IL	Loyola-Stritch	0	50	9	8	0	91	12	170
IL	Northwestern-Feinberg	2	71	17	17	0	63	1	160
IL	Rush	0	37	11	13	0	88	6	155
IL	Southern Illinois	0	6	10	6	0	60	0	80
IN	Indiana	3	65	30	40	1	235	12	365

(continued)

Table 4.1 Matriculants by U.S. Medical School and Race/Ethnicity (Alone or In Combination), 2020-2021* *(continued)*

State	Medical School	American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Unduplicated Total
KS	Kansas	2	35	8	7	0	158	9	211
KY	Kentucky	2	22	8	7	0	164	8	205
KY	Louisville	0	25	16	6	0	112	2	159
LA	LSU New Orleans	3	33	16	6	0	143	3	196
LA	LSU Shreveport	1	20	5	5	0	118	2	148
LA	Tulane	0	38	21	6	1	105	7	190
MA	Boston	1	59	9	26	1	61	6	152
MA	Harvard	2	59	18	15	1	75	8	168
MA	Massachusetts	0	33	12	13	0	112	9	162
MA	Tufts	3	49	9	24	1	122	11	200
MD	Johns Hopkins	2	55	12	10	0	41	3	121
MD	Maryland	1	47	17	19	1	78	7	152
MD	Uniformed Services-Hebert	4	36	6	17	1	123	3	169
MI	Central Michigan	0	21	5	5	1	64	9	103
MI	Michigan	4	44	5	15	0	107	11	168
MI	Michigan State	2	27	19	13	0	115	20	188
MI	Oakland Beaumont	0	34	2	6	0	71	14	125
MI	Wayne State	5	66	39	12	0	135	33	291
MI	Western Michigan-Stryker	1	22	5	11	0	52	4	84
MN	Mayo-Alix	5	24	14	10	1	54	5	105
MN	Minnesota	5	35	25	14	1	166	10	241
MO	Missouri Columbia	1	18	11	9	1	86	6	128
MO	Missouri Kansas City	0	32	4	5	0	36	1	124
MO	Saint Louis	2	61	11	8	2	86	3	183
MO	Washington U St Louis	1	31	6	13	1	47	4	104
MS	Mississippi	0	16	17	6	1	125	3	165
NC	Duke	0	15	17	15	1	72	3	121
NC	East Carolina-Brody	1	20	16	5	0	39	5	86
NC	North Carolina	4	42	20	20	1	117	8	193
NC	Wake Forest	1	31	4	19	0	90	8	145
ND	North Dakota	6	7	2	0	0	51	0	67
NE	Creighton	1	42	0	9	0	117	2	167
NE	Nebraska	2	14	0	6	0	111	2	131
NH	Dartmouth-Geisel	3	18	5	8	0	53	5	92
NJ	Cooper Rowan	0	36	9	2	0	54	6	111
NJ	Hackensack Meridian	0	35	18	14	0	59	8	122
NJ	Rutgers New Jersey	0	68	18	27	0	47	12	178
NJ	Rutgers-RW Johnson	1	54	19	27	0	63	8	174
NM	New Mexico	6	21	1	40	0	41	6	97
NV	Nevada Reno	2	17	6	14	0	36	3	70
NV	UNLV-Kerkorian	0	17	2	6	1	31	6	60
NY	Albany	0	42	16	12	0	74	6	143
NY	Buffalo-Jacobs	4	32	18	26	1	122	7	182
NY	CUNY	0	25	22	5	0	9	0	76
NY	Columbia-Vagelos	0	29	17	14	0	79	4	138
NY	Cornell-Weill	1	36	12	18	1	47	3	106
NY	Einstein	1	53	25	23	0	88	6	183
NY	Mount Sinai-Icahn	0	38	13	17	1	76	4	140
NY	NYU Long Island	0	12	1	1	0	11	0	24

(continued)

Table 4.1 Matriculants by U.S. Medical School and Race/Ethnicity (Alone or In Combination), 2020-2021* *(continued)*

State	Medical School	American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Unduplicated Total
NY	NYU-Grossman	0	27	11	17	0	63	1	102
NY	New York Medical	1	58	20	24	2	87	13	212
NY	Renaissance Stony Brook	0	61	8	11	1	51	10	136
NY	Rochester	1	27	10	9	0	49	2	102
NY	SUNY Downstate	2	71	23	32	0	80	10	207
NY	SUNY Upstate	2	28	16	19	1	92	8	160
NY	Zucker Hofstra Northwell	0	32	10	11	0	43	3	99
OH	Case Western Reserve	4	75	13	14	1	103	3	214
OH	Cincinnati	1	27	22	21	1	122	3	182
OH	Northeast Ohio	1	51	5	8	2	82	7	151
OH	Ohio State	1	53	20	25	0	117	7	205
OH	Toledo	0	43	14	10	1	111	6	176
OH	Wright State-Boonshoft	1	21	27	4	1	72	2	118
OK	Oklahoma	12	31	5	5	0	110	8	164
OR	Oregon	8	35	7	17	2	95	7	150
PA	Drexel	2	84	27	21	0	121	16	267
PA	Geisinger Commonwealth	2	22	5	15	0	81	2	115
PA	Jefferson-Kimmel	0	74	13	17	0	149	10	270
PA	Penn State	0	39	4	4	1	101	4	152
PA	Pennsylvania-Perelman	0	51	23	17	0	66	6	155
PA	Pittsburgh	0	48	16	7	1	76	6	149
PA	Temple-Katz	0	43	32	32	0	124	4	218
PR	Caribe	0	1	0	74	0	7	0	75
PR	Ponce	1	2	3	145	0	22	1	150
PR	Puerto Rico	0	0	2	110	0	12	1	110
PR	San Juan Bautista	0	2	1	58	0	6	2	63
RI	Brown-Alpert	1	42	12	18	0	76	0	144
SC	MU South Carolina	3	27	17	18	0	115	3	173
SC	South Carolina Columbia	0	12	2	4	0	80	1	99
SC	South Carolina Greenville	1	8	15	9	1	78	3	108
SD	South Dakota-Sanford	1	4	1	1	0	66	0	69
TN	East Tennessee-Quillen	1	14	3	6	0	47	6	72
TN	Meharry	2	4	97	4	0	11	2	115
TN	Tennessee	0	34	10	6	0	125	4	170
TN	Vanderbilt	2	20	13	13	2	56	3	94
TX	Baylor	0	53	16	33	0	91	2	186
TX	Houston	2	4	12	11	0	11	0	30
TX	TCU UNTHSC	2	7	3	9	0	42	5	60
TX	Texas A & M	1	67	7	15	0	84	0	175
TX	Texas Tech	1	39	10	27	0	106	3	180
TX	Texas Tech-Foster	1	36	9	23	0	54	4	110
TX	UT Austin-Dell	0	16	2	9	0	28	1	50
TX	UT Houston-McGovern	1	56	18	46	0	138	7	240
TX	UT Medical Branch	0	68	24	45	1	118	4	230
TX	UT Rio Grande Valley	1	15	9	24	0	19	1	55
TX	UT San Antonio-Long	2	85	14	41	0	101	3	212
TX	UT Southwestern	1	88	20	39	0	109	1	228
UT	Utah	0	21	3	10	1	93	3	125
VA	Eastern Virginia	2	42	17	9	2	85	2	151

(continued)

Table 4.1 Matriculants by U.S. Medical School and Race/Ethnicity (Alone or In Combination), 2020-2021* *(continued)*

State	Medical School	American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Unduplicated Total
VA	Virginia	1	46	23	6	0	76	2	155
VA	Virginia Commonwealth	0	66	13	11	1	81	6	186
VA	Virginia Tech Carilion	0	11	3	3	0	35	2	48
VT	Vermont-Larner	1	25	11	8	1	81	6	124
WA	U Washington	11	62	8	22	1	182	9	270
WA	Washington State-Floyd	4	17	1	4	0	56	4	80
WI	MC Wisconsin	4	46	15	22	1	183	7	266
WI	Wisconsin	11	25	14	21	1	115	3	171
WV	Marshall-Edwards	0	8	4	3	0	63	3	80
WV	West Virginia	0	18	3	5	1	83	3	112

Note: Data are not reflective of the number of individuals in each race/ethnicity category, but rather the number of times a particular race/ethnicity category was selected. One individual can self-identify with multiple groups.

Source: AAMC Data Warehouse: Applicant Matriculant File.



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 4.1

Identifying Premed and Application Programs

Use this worksheet to identify programs you may be eligible for. Many programs primarily sponsored by medical schools are available to students across the United States. You can start searching at services.aamc.org/summerprograms and ExploreHealthCareers.org, and then use this worksheet to figure out your options.

Before the Application Process

For example: Summer Health Professions Education Program (SHPEP)

Description: Six-week academic enrichment program that offers students both academic and career experiences that will support their dental or medical school career preparation. For more information, go to shpep.org.

Eligibility: _____

Which academic year(s) would I be eligible to participate?: _____

When am I eligible to apply?: _____ Application deadline: _____

Accepts out-of-state?: ☐ Yes ☐ No ☐ Other: _____

Application requirements: _____

During the Application Process

For example: Medical Minority Applicant Registry (Med-MAR)

Description: During the MCAT registration, students who are either economically disadvantaged or from racial and ethnic groups historically underrepresented in medicine can select the Medical Minority Applicant Registry (Med-MAR). This web-based program provides medical schools with basic biographical information and MCAT scores of registered examinees, giving schools opportunities to enhance their diversity efforts. For more information, go to aamc.org/medmar.

Eligibility: _____

Which academic year(s) would I be eligible to participate?: _____

When am I eligible to apply?: _____ Application deadline: _____

Accepts out-of-state?: ☐ Yes ☐ No ☐ Other: _____

Application requirements: _____

During the Application Process

Program: _____

Description: _____

Eligibility: _____

Which academic year(s) would I be eligible to participate?: _____

When am I eligible to apply?: _____ Application deadline: _____

Accepts out-of-state?: ☐ Yes ☐ No ☐ Other: _____

Application requirements: _____

All About the MCAT® Exam



Idris Kosoko
Meharry Medical College
Class of 2023

“My strategy for the MCAT exam focused on repetition and knowledge application. But to apply those components to my studies, I knew it would be important to have a strong knowledge foundation. When I began the master of health sciences program at Meharry Medical College’s School of Graduate Studies and Research, I focused on the information taught in courses and ensured I was fully learning the material. I knew I could not “brain-dump” after final exams, like I had sometimes done during undergrad.

I studied for the MCAT exam over several months. First, I focused entirely on content review. No one can learn all that is tested in just a few short months! I looked through review sheets covering every subject on the MCAT. I gathered information to prepare for the exam from some of my peers and consulted various resources for tips about the exam that would work for me. The best tips I received were on how to plan the sequence of my review process. Initially I was unsure how to plan a study schedule, but after speaking with other applicants who had already taken the exam, I was able to determine a plan that worked well for me.

My personal study plan sequence began with two weeks of content review, then four weeks of reviewing practice questions (about 60-100 each day), and continued with a combination of taking NBME practice tests and reviewing all materials up until the final two weeks before the exam. I worked hard to incorporate repetition of the review sheets, which helped me solidify the information in my long-term memory. The initial eight weeks were followed by an additional six weeks during which I focused on applying the information I learned by reviewing practice questions. I made sure I answered every question on practice tests and read the explanations on why each answer was right (or wrong). By doing this careful review, I was able to retain answers I missed previously. Repetition and review are the keys to success.”

The Role of the MCAT Exam

Simply put, the MCAT exam helps admissions officers identify which students are likely to succeed in medical school.

That’s done by identifying students who have not only a basic knowledge of the natural, behavioral, and social sciences — the foundation necessary in the early years of medical school — but also strong critical analysis and reasoning skills.

It can be argued that college grades essentially do the same thing. But because an “A” at one school is not necessarily equivalent to an “A” at another, admissions officers don’t have a standard measure against which to evaluate students. The MCAT exam fills that void. As a result, virtually every medical school in the United States, and many in Canada, requires applicants to submit recent MCAT scores.

Admissions officers look at MCAT scores in conjunction with grades and with many other selection factors, including those related to experiences and personal attributes, when making their decisions.

Using all these components, medical school admissions committees are able to substantially increase their success in predicting who will be successful in medical school.

Application programs and institutions that use MCAT scores include:

- AMCAS.
- American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS).
- Texas Medical and Dental Schools Application Service (TMDSAS).
- Ontario Medical School Application Service (OMSAS).
- Other Canadian medical schools requiring MCAT scores.
- American Association of Colleges of Podiatric Medicine Application Service (AACPM).
- Veterinary Medical College Application Service (VMCAS).
- Schools of Public Health Application Service (SOPHAS).

Eligibility

You're eligible to take the MCAT exam if you plan to apply to a health professions program, including:

- MD-granting institutions.
- DO-granting institutions.
- Podiatric (DPM) programs.
- Veterinary medicine (DVM) programs.
- Any other health-related program that will accept MCAT exam results to satisfy a test score admission requirement.

When you register, you'll be required to sign a statement verifying your intention to apply to a health professions school.

International Students

If you're an international student, you're welcome to take the MCAT exam, provided that you meet the eligibility requirements. If you're in a bachelor of medicine/bachelor of surgery (MBBS) degree program or hold the MBBS degree, you may register for the MCAT exam without seeking special permission.

How the Exam Is Structured

The MCAT exam has four multiple-choice test sections:

- Biological and Biochemical Foundations of Living Systems
- Chemical and Physical Foundations of Biological Systems
- Psychological, Social, and Biological Foundations of Behavior
- Critical Analysis and Reasoning Skills

The first three sections listed are organized around foundational concepts in the natural, behavioral, and social sciences. They reflect current research about the most effective ways for students to learn and use science, emphasizing deep knowledge of the most important scientific concepts.

Science education leaders say that some of the most important foundational concepts in the sciences ask students to integrate and analyze information from different disciplines. In that vein, questions in these sections ask you to combine your scientific knowledge from multiple disciplines with your scientific inquiry and reasoning skills. On these three sections of the exam, you'll demonstrate four different scientific inquiry and reasoning skills:

- Knowledge of scientific concepts and principles.
- Scientific reasoning and problem solving.
- Reasoning about the design and execution of research.
- Data-based and statistical reasoning.

The fourth section, Critical Analysis and Reasoning Skills, is similar to many of the verbal reasoning tests you've taken in your academic career. It includes passages and questions that test your ability to comprehend and analyze what you read. This section asks you to read and think about passages from a wide range of disciplines in the humanities and social sciences, including population health, ethics and philosophy, and studies of diverse cultures. The passages are followed by a series of questions that lead you through the process of comprehending, analyzing, and reasoning about the material you've read. This section was developed specifically to measure the analytical and reasoning skills you'll need to be successful in medical school.

What the Exam Measures

The different sections of the MCAT exam are carefully designed to test the concepts and skills most needed by entering medical students.

The Biological and Biochemical Foundations of Living Systems and the Chemical and Physical Foundations of Biological Systems sections are designed to:

- Test introductory-level biology, organic and inorganic chemistry, and physics concepts taught in yearlong courses.
- Test biochemistry concepts at the level taught in many colleges and universities in first-semester biochemistry courses.
- Test cellular and molecular biology topics at the level taught in many colleges and universities in introductory biology sequences and first-semester biochemistry courses.
- Target basic research methods and statistics concepts described by many baccalaureate faculty as important to success in introductory science courses.
- Have you demonstrate your scientific inquiry and reasoning, research methods, and statistics skills, as applied to the natural sciences.

The Psychological, Social, and Biological Foundations of Behavior section is designed to:

- Test your knowledge and use of the concepts in psychology, sociology, and biology that provide a solid foundation for learning about the behavioral and sociocultural determinants of health in medical school.
- Target concepts taught at many colleges and universities in first-semester psychology and sociology courses.
- Target biology concepts that relate to mental processes and behavior taught at many colleges and universities in introductory biology.
- Target basic research methods and statistics concepts described by many baccalaureate faculty as important to success in introductory science courses and described in many introductory psychology and sociology courses.
- Have you demonstrate your scientific inquiry and reasoning, research methods, and statistics skills, as applied to the social and behavioral sciences.

The Critical Analysis and Reasoning Skills section is designed to:

- Test your comprehension, analysis, and reasoning skills by asking you to critically analyze information provided in reading passages.
- Include content from ethics, philosophy, studies of diverse cultures, population health, and a wide range of social sciences and humanities disciplines.
- Provide you with all the information you need to answer questions in the passages.

MCAT Scores

You'll receive five scores from your MCAT exam: one for each of the four sections and one combined, total score. The MCAT exam is not graded on a curve; it's equated. The equating process compensates for small differences in difficulty between test forms and ensures that scores have the same meaning no matter when you take the exam or what test form you get. In your score report, you'll receive the information below.

Section Scores

Each of the four sections — Biological and Biochemical Foundations of Living Systems; Chemical and Physical Foundations of Biological Systems; Psychological, Social, and Biological Foundations of Behavior; and Critical Analysis and Reasoning Skills — is scored from a low of 118 to a high of 132, with a midpoint of 125. You'll receive a score for each of the four sections. (Figure 5.1 shows a sample score report.)

Figure 5.1. Sample MCAT score report.

Section	Score	Confidence Band ¹	Percentile Rank of Score ²	Score Profile ³
Chemical and Physical Foundations of Biological Systems	124	123 ◆ 125	42%	
Critical Analysis and Reasoning Skills	123	122 ◆ 124	35%	
Biological and Biochemical Foundations of Living Systems	127	126 ◆ 128	72%	
Psychological, Social, and Biological Foundations of Behavior	127	126 ◆ 128	65%	
MCAT Total	501	499 ◆ 503	48%	
Notes				
<p>1. Test scores, like other measurements, are not perfectly precise. The confidence bands around test scores mark the ranges in which the test taker's true scores probably lie. The diamond shapes and shading show the test taker's true scores are more likely to be their reported scores (in the second column) than the other scores in the confidence bands.</p> <p>2. The percentile ranks of scores are the percentages of test takers who received the same scores or lower scores. The percentile ranks are updated on May 1 every year to reflect the results from the three most recent previous calendar years.</p> <p>3. For the four sections, non-overlapping confidence bands show a test taker's likely strengths and weaknesses. Overlapping confidence bands suggest that there are not meaningful differences in performance between sections.</p>				

Total Score

Your scores for the four sections are combined to create your total score. The total score ranges from 472 to 528. The midpoint is 500.

For example, if you scored 127 on the Biological and Biochemical Foundations of Living Systems section; 124 on the Chemical and Physical Foundations of Biological Systems section; 127 on the Psychological, Social, and Biological Foundations of Behavior section; and 123 on the Critical Analysis and Reasoning Skills section, your total score would be 501.

Confidence Bands

Like other standardized tests, the MCAT exam is an imperfect measure of what test-takers know and can do. Examinees' scores can be affected by factors like fatigue, test anxiety, and distractions during the test. Then again, an examinee's score might be boosted if they were recently exposed to some of the topics included on the exam. The inclusion of the confidence bands is meant to remind admissions officers not to overemphasize small differences in test scores.

Percentile Ranks

The percentile ranks show how you scored relative to other MCAT examinees. You'll receive a percentile rank for each individual section score and for your overall total score. Each percentile rank represents the percentage of examinees who received the same score as you or a lower score. The ranks show your scores compared with the scores of other examinees.

Score Profiles

Score profiles are included to show your strengths and weaknesses across the four sections of the exam. This section of the score report can help you determine how to focus your preparation if you decide to retake the exam.

Learn more about the score scale and score report at aamc.org/students/applying/mcat/scores.

Valid MCAT Scores

Each medical school sets its own policy about how much time can elapse between when you take the exam and when you apply, as well as the latest exam date it will accept during the application cycle. To find out the acceptable timing for the schools you're interested in, contact them directly or visit the MSAR website, which also has a table showing which schools are accepting scores from the previous version of the MCAT exam in their admission cycles: aamc.org/msar.

Preparing for the Exam

While there's no one way to prepare for the MCAT exam, giving yourself adequate time to prepare is critical. The amount of time you'll need to prepare really depends on you. Have you completed all the coursework covering the topics on the exam? Do you feel confident in all content areas? Are there some topics or skills you feel require more in-depth study or practice? Are you comfortable with the online testing format?

Students who take the MCAT exam and then complete the Post-MCAT Questionnaire report how much time they spent preparing for the exam (aamc.org/data/pmq). You can see a breakdown in the PMQ report showing how many weeks and hours students spent preparing. While there is no right or wrong way to prepare for the MCAT exam, you may find it useful to break down studying into manageable chunks — you can't tackle everything at once. This will also help give you a sense of the amount of time you'll need so you can prepare at a comfortable pace. The best study plans are those you can tailor to your needs.

To develop your own study schedule:

- Get started by using this guide: *How to Create a Study Plan for the MCAT Exam*, available as a PDF (offers.aamc.org/mcat-study) or an online tool in the MCAT Official Prep Hub (aamc.org/mcatprep).
- See how other examinees prepared with this collection of 21 testimonials: *How I Prepared for the MCAT Exam* (students-residents.aamc.org/applying-medical-school/taking-mcat-exam/how-i-prepared-mcat-exam). Check out their study schedules, strategies, and the resources they used, and note their best advice about how to prepare.

To understand what's on the exam:

- Review this interactive content tool: **What's on the MCAT Exam?** (students-residents.aamc.org/mcatexam). It offers an overview of the exam sections, as well as details about the foundational concepts and skills you'll be asked to demonstrate on the exam. Each concept or skill has a link to a relevant Khan Academy MCAT Collection Tutorial.
- Read **The Official Guide to the MCAT® Exam** (aamc.org/officialmcatguide), which is the only official comprehensive overview of the exam. It includes 120 practice questions and solutions. The e-book is available through Amazon.
- Visit students-residents.aamc.org/mcatessentials to read **The MCAT® Essentials for Testing Year 2021**.

To study the content on the exam:

- Visit **Khan Academy's MCAT Collection**. A series of video-based tutorials covering all areas the MCAT exam tests, the Khan Academy's MCAT collection was created in collaboration with the AAMC and the Robert Wood Johnson Foundation. Learn more at khanacademy.org/test-prep/mcat.
- Review **A Roadmap to MCAT Content in Sociology and Psychology Textbooks** (aamc-orange.global.ssl.fastly.net/production/media/filer_public/50/1c/501c642f-8183-4224-a9d6-6aeef5c0b43e/mcat_psych_soc_road_map_2019.pdf). Publishers of introductory psychology and sociology textbooks have provided detailed information on where in their textbooks to find the concepts you'll need for the Psychological, Social, and Biological Foundations of Behavior section of the MCAT exam. Some of the textbooks in the roadmap are free, available online, and in e-book format.
- Review **A Road Map to MCAT Critical Analysis and Reasoning Skills in the Khan Academy Collection** (students-residents.aamc.org/media/11296/download). The AAMC mapped the skills assessed in the CARS section of the MCAT exam to the free videos, worked examples, and practice passage sets in the Khan Academy's MCAT Collection.
- Review **A Road Map to MCAT Content In Biochemistry Textbooks** (students-residents.aamc.org/media/11526/download). The AAMC reached out to publishers of biochemistry textbooks for detailed information on where to find the biochemistry concepts you'll need for the MCAT exam.

The AAMC has many official products written by the test developers to help you practice. There are full-length practice tests, as well as other resources that allow you to practice with large banks of questions. Learn more at aamc.org/mcatprep.

Test Dates, Registration, and Fees

The 2021 MCAT exam dates are posted on the MCAT website (students-residents.aamc.org/mcatregister). Although the AAMC selects exam dates to ensure scores are available to meet most medical school application deadlines, we recommend you check the specific scheduling requirements of the schools of your choice, provided in the [MSAR website school profiles](#).

To be sure you get the most complete and up-to-date information about the MCAT exam, it is crucial that you read *The MCAT® Essentials for Testing Year 2021* (available online at students-residents.aamc.org/mcatessentials) before you register for the exam. After you've read it, you can register online through the MCAT Registration

System. The most current information on exam fees, including costs for making changes and testing internationally **can also be found on the MCAT website**. There are no additional charges for distribution of your test scores to AMCAS or any other application services or institutions that use MCAT scores.

Many medical schools prefer that applicants take the MCAT exam in the spring rather than the summer because of the short time between the availability of late-summer scores and school application deadlines, so consider taking the MCAT exam 12 to 18 months before your expected entry into medical school.

However, it's important to remember that you should not take the exam before you feel ready. With limits in place for how often you can take the MCAT exam in a given year or over a lifetime (read the "Retaking the Exam" section of this chapter), you should have completed basic coursework and feel comfortable with your knowledge of introductory-level biology, general and organic chemistry, and physics — as well as first-semester psychology, sociology, and biochemistry — before you take the exam.

For more guidance on deciding when to take or retake the exam, please consult with your prehealth advisor.

Fee Assistance Program

The AAMC believes the cost of applying to medical school should not be a barrier to aspiring doctors. Therefore, the AAMC Fee Assistance Program helps qualifying examinees with MCAT registration fees, test preparation products, and other relevant AAMC products and services. To use the Fee Assistance Program, you must be approved for the benefit before registering for the exam. The benefits are not retroactive; you won't be given a refund for any resources or fees incurred before you qualify. Learn whether you're eligible for the Fee Assistance Program at aamc.org/fap.

Testing With Accommodations

The AAMC is committed to giving all individuals an opportunity to demonstrate their proficiency on the MCAT exam, which includes ensuring access to people with disabilities in accordance with relevant law.

If you have a disability or medical condition you believe requires an adjustment to the standard testing conditions, we encourage you to apply for accommodated testing.

For information about application timeframes and types of documentation needed, as well as how to apply, please refer to aamc.org/mcat/accommodations.

Retaking the Exam

It can be a tough decision, but if you're not happy with your performance on the MCAT exam, you have the option to take it again.

There are times when a retake is well worth considering. Perhaps you discovered that your coursework or study didn't cover the topics as thoroughly as you needed. Or there's a large discrepancy between your grade in a relevant subject and your score on a particular section. Or maybe you simply didn't feel well the day of the exam. In all these cases, prehealth advisors may be of great help, and we recommend you discuss the issue with yours. However, be aware that you can't choose which scores are sent to medical schools; admissions committees will see the results of all attempts at the exam you choose to score. Additionally, there are limits on how often and how many times you may take the MCAT exam: You may take the exam up to three times in a testing year, up to four times in two consecutive years, and up to seven times in a lifetime. Voided exams and "no shows" count toward your attempts in a year or over your lifetime (however, these attempts are not included in the score report sent to medical schools).

Score Reporting

Your scores will be available in the MCAT Score Reporting System, accessible through the AAMC website at apps.aamc.org/score-reporting-web. No matter which option you use for sending your scores to medical schools, all attempts that are scored will be sent to them. You can't withhold any of your MCAT scores from your applications.

You have two options for sending your MCAT scores to medical schools:

- **Send your scores to AMCAS:** AMCAS is the American Medical College Application Service, which most U.S. medical schools take part in and which you will use to manage sending your application to participating institutions. Your MCAT scores are automatically released to AMCAS. This means you don't need to take any additional steps to insert your scores into your application. You can view a list of participating schools at aamc.org/amcas. Read more about AMCAS in Chapter 7.
- **Send your scores to non-AMCAS schools:** If you're applying to non-AMCAS schools and programs, you'll need to send your scores electronically or by mailing a copy of your official score report to the non-AMCAS schools. Instructions are detailed in the MCAT Score Reporting System (students-residents.aamc.org/applying-medical-school/article/sending-scores-non-amcas-insitutions).

Gap Year and Career Changers: Taking the MCAT Exam

If you plan to take a gap year(s) or are changing careers, be thoughtful about preparing for the MCAT exam. Consider factors such as how well you know the content tested on the exam and when you would ideally want to begin medical school. This will help you figure out the best time to take the exam.

- **Know when you want to apply:** Many examinees consider taking their MCAT exam in the calendar year before the year they plan to enter medical school. For example, if you are applying in 2021 for entrance to medical school in 2022, you would take the exam in 2021. If you plan to take a gap year(s), think about whether you want to take the exam before, during, or after that time, and build in time to prepare.
- **Mastering the content:** You are the best judge of how prepared you are. First, determine whether you need to take coursework or need more time to study. Some applicants need to take additional coursework, retake coursework that is several years old, or complete postbaccalaureate programs to meet application requirements. Consider this when choosing an exam date because the timeline may affect whether the exam will still be accepted by various medical schools.
- **Retesting and testing limits:** If you think you might need to test more than once in a calendar year, try to schedule an exam date early in the year. This will give you more time to receive your scores and prepare for a retest. Remember: You can take the exam only three times in a single testing year, four times over two consecutive testing years, and seven times in a lifetime.

If you've never taken the MCAT exam and you don't currently have a prehealth advisor to help you prepare, the **National Association of Advisors for the Health Professions** has volunteer advisors available. Find more information at naahp.org.



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 5.1

Getting Ready to Take the MCAT® Exam Checklist

Ask yourself these questions when you're getting ready for the MCAT exam.

- Am I familiar with what will be on the exam? ☐ Yes ☐ No ☐ Unsure
(Find out what's on the exam: students-residents.aamc.org/mcatexam.)
- If no or unsure, what content or sections am I unsure about? _____
- Have I allowed enough time to study and feel comfortable with my knowledge of the exam content?
 - Chemical and Physical Foundations of Biological Systems
☐ Yes ☐ No, I need more time ☐ Unsure
 - Biological and Biochemical Foundations of Living Systems
☐ Yes ☐ No, I need more time ☐ Unsure
 - Psychological, Social, and Biological Foundations of Behavior
☐ Yes ☐ No, I need more time ☐ Unsure
 - Critical Analysis and Reasoning Skills
☐ Yes ☐ No, I need more time ☐ Unsure

If you have areas where you need more study, check out the AAMC's preparation resources, which offer the opportunity to get familiar with the online testing environment. Also, consider forming a study group at your school or with other applicants preparing for the exam. Talk to your prehealth advisor about resources you may have on campus or through your institution.

- Am I within one to two calendar years of wanting to apply to medical school?
☐ Yes ☐ No ☐ Unsure
- Have I spoken with my prehealth advisor? Does my advisor agree that I am ready?
☐ Yes ☐ No ☐ Unsure
- Have I applied to see if I qualify for the Fee Assistance Program?
☐ Yes ☐ No ☐ Unsure
- Do I feel prepared and ready to take the exam?
☐ Yes ☐ No ☐ Unsure

If you answered "no" to many of these questions, consult with your prehealth advisor about developing a plan to take the exam. Refer to aamc.org/mcat for information about creating a study plan. When you're close to registering for a test date, be sure to read the *MCAT® Essentials for Testing Year 2021* for important information on scheduling, registration, test-day policies, and scoring (students-residents.aamc.org/mcatessentials).

Choosing Your Schools



Dominique Tucker

Case Western Reserve University School of Medicine
Class of 2023

“Applying to medical school felt a lot like applying to undergrad; everyone had their own priorities and nonnegotiable needs and wants that made schools seem more, or less, desirable.

Everyone applicant has their own specific list of what matters most: cost of attendance, location, the school’s mission, size, etc. A good approach to narrowing down where to apply is to make a list of items prioritized by what is most and least important to you. When I created my list of schools I felt were the best fit for me, I extensively used the AAMC’s MSAR website

to strategically create a list of schools where I felt not only would I be a competitive applicant but also my values and career goals were reflected.

Lastly, I reached out to a few current students to hear their perspectives after I received my acceptance letter. Speaking to them gave me better insight into how the school’s curriculum was taught, what research opportunities were available, what the school’s culture was like, and other details that weren’t readily available from a web search.

Choosing where to ultimately apply to medical school is difficult. Of course, you should always discuss your school list and your goals with a prehealth advisor or your mentor. But if you focus on your competitiveness as an applicant and think about how each school aligns with your values, goals, and personal or family needs, you should be able to form a list you feel confident about from the 172 MD-granting institutions in the United States and Canada.”

The Overall Mission of the School

Many of the differences among medical schools are obvious. Some schools are located on the East Coast, some on the West Coast. Some are private; others, public. Some have a large entering class; others, small. Some have a single main campus while others have multiple regional campuses. And, as explained in Chapter 3, medical schools vary in the content of their courses, the way they teach, and even the way they grade and evaluate students.

These are all factors you’ll want to consider as you narrow your selection, and we touch on them in the following pages. But the differences go even deeper, and at their core, medical schools have diverse missions and priorities. Because of these distinctions, what is significant to one school may be of only moderate importance to another, and these qualities naturally carry into the selection process.

Deciding where to apply requires you to learn about the differences among schools, but also to analyze yourself — your skills, experiences, career goals, and so forth — to identify the most appropriate matches. Take, for instance, an institution that places a strong emphasis on primary care. Is that the career path you intend to follow? If so, and especially if you can demonstrate your interest through extensive experience related to that area, you become a more attractive candidate on that basis alone.

Other schools may be actively seeking students from specific geographic or rural areas. Others may be looking for students with a high potential for a research career. And others may want to increase the number of doctors who plan to practice in their state (often a goal of public institutions). The differing missions among schools are reflected in their admission policies and standards.

If you need help with this self-analysis, think back to the various experiences you've had over the years. The ones you found especially rewarding or inspirational are likely to correlate with a specific area of interest and, by extension, a career goal.

Did you volunteer for two summers at a clinic in a **rural, underserved area**? Perhaps that's the direction you'd like to take your career. If so, you'll want to seek out medical schools that place a high priority on that area.

Were the part-time jobs you had while doing research particularly gratifying? If you'd like to pursue a **research career**, look for schools that have strong reputations in that area or are known for graduating a large percentage of medical students pursuing research careers.

Your interests and career goals are also demonstrated in other ways. Did you spend your junior year tutoring freshmen and sophomores in entry-level biology or chemistry? Perhaps you'd like to join a **medical school faculty** and educate the next generation of physicians. If so, find medical schools that have a relatively large percentage of graduates in teaching positions, and check whether schools are affiliated with teaching hospitals.

Once again, keep in mind that applying to medical school is a two-way street. While you're looking for a match, so are the schools. Your experiences will provide good insights for the admissions officers and help them determine whether your interests and their missions are congruent. If you don't know which medical career path you want to pursue yet, that's okay. Aim to get as many rich and diverse experiences as possible so you will be a well-rounded applicant.

Kicking Off Your Research

There are several ways you can research schools to identify the ones that best match your own strengths, interests, and goals. Here are some factors to consider in your selection:

- Research reputation and opportunities.
- Community-based experiences and opportunities.
- Geographic location.
- School's teaching methods.
- Program of elective courses.
- Faculty mentorship.
- Placement of recent graduates in specialty residencies.
- Residency programs at hospitals affiliated with the school.

The MSAR website: Start your research with the medical school profiles at aamc.org/msar. Here, you'll find each institution's clear mission statement and a description of its selection factors.

School websites and literature: Also review information provided by schools themselves. Although the specific content varies by school, every school provides detailed material for prospective students.

Advisors: Your prehealth advisor or career counselor will be able to recommend specific schools likely to be a good fit. These advisors have a lot of insight about the application process, so don't overlook this resource. Also, make sure you attend health career fairs to speak with admissions staff from medical schools and participate in premed or prehealth student organizations.

The Educational Program

It's easy to get hung up on a specific region or location, or you may recognize the name of a prestigious school and want to go there simply because it sounds impressive. Consider all your options, though. As you weigh your decision, you'll want to consider the differences among the educational programs themselves.

There's likely going to be a strong relationship between a school's mission and its **curriculum**. You'll be able to gauge whether an institution's objectives align with your interests by analyzing course requirements and elective programs. A medical school with a mission to graduate more primary care doctors may, for example, have a track that provides additional training in that area. A school that emphasizes research may require their students to write a thesis or devote an extended period of time to scholarly pursuits.

As you do your research, also consider what **teaching methods** you find most effective. Do you do well with self-directed or participatory learning exercises, or do you prefer a learning environment with the more traditional, lecture-based style? Although most medical schools use an educational model that combines a variety of methods, every program adapts its own design. Are you looking for classes that promote small-group discussions and problem-based learning exercises? Or are you more comfortable with a traditional teaching approach? Eventually, these are great topics to discuss with current students, but a good starting point for your exploration is a school's website, as well as the AAMC's curriculum directory (aamc.org/initiatives/cir).

There are many other factors you might want to think about. How will you be evaluated? At what point must students pass the first two steps of the USMLE before advancing in their education? What level of academic support is available? Is there a mentor system, for instance? What about cultural organizations and support services for minority and first-generation students — are they available? Questions such as these will undoubtedly enter into your final decision-making.

How Do GPA and MCAT Scores Factor In?

Don't choose schools based solely on where you think your grades and MCAT® scores will be accepted. While there's no question that your educational record is important and admissions officers seek candidates who are likely to succeed academically in their programs, it's important to realize that academics alone do not predict who will become an effective physician, and admissions officers know that all too well.

There are many instances in which a "high-scoring" applicant is not accepted to a medical school — while an applicant with lower-than-average grades and scores is — which tells you that admissions officers are looking at other factors.

Admissions officers are taking a more holistic approach to evaluating applicants. Through this practice, admissions officers assess candidates more broadly, looking not only at their GPA and MCAT scores but also at their experiences and personal attributes.

You can read about the holistic approach to admissions in Chapter 8, "The Admission Decision."

Attending Medical School in Your Home State

State residents enrolled in state-supported medical schools pay lower tuition than nonresidents. In addition, in-state residents are often given preference for admission (compared with out-of-state residents) for at least some of their spaces because the school receives state government support. With this in mind, you may want to strongly consider the public institutions in your state as you decide where to apply. Note that residency requirements are established by each state. Check with individual medical schools for policies regarding qualifying for in-state or residential status.

Nationally, 60.3% of 2020 matriculants attended schools in their home states.

International Students

There's only a small number of international students — those who are not U.S. citizens or permitted to reside permanently in this country — at U.S. medical schools. If you are an international applicant, know that private medical schools are more likely to accept international students than public schools, and most medical schools require completion of premedical coursework at a U.S. college or university. For more information, refer to the Aspiring Docs® fact sheet on applying as an international applicant at aamc.org/aspiringdocs.

Public or Private?

You may also be deliberating between public and private institutions. Typically, the most cost-effective option is a public medical school in the state where you live. If you're from out of state, the cost differential between a public and a private school virtually disappears. (Refer to Table 10.1 in Chapter 10.) But don't automatically assume, even if you're interested in a state school near your home, that the private route will be more expensive under all circumstances. Some private institutions have large endowments that allow them to provide significant scholarship aid to qualifying students. These scholarships lower the "effective" tuition rate and permit those students to graduate with less educational debt than if they had attended a public medical school in their home state.

Cost is only one consideration, though. Another element to be aware of when investigating differences between private and public institutions is the school's mission — and how it might relate to your own aspirations and interests. Although all medical schools — public or private — have different missions, certain public institutions may have specific goals related to their state, such as increasing the state's supply of physicians. If the school is in your home state and you'd like to live and work there after graduation, that will be a factor from both your perspective and the school's. Other public institutions were founded by state legislators with an emphasis on the needs of a particular patient population — such as elderly, rural, or underserved groups — which should enter into your evaluation if that objective corresponds to your own career intentions.

Additional Factors to Consider

"Additional" doesn't mean less significant. Many other factors may be important to you as you search for a good fit, including:

Location. Perhaps you simply prefer a specific geographic region. Do you want to be close to family and friends? Do you prefer a warmer or cooler climate? Are you a fan of the East Coast or the South or the West? What about a bustling city environment versus a rural one? These factors play to your comfort level, and all are valid considerations. Beyond that, though, location can also relate to your career goals, as well as to a school's mission. If you hope to specialize in geriatrics, for example, a medical school located in an area with a higher-than-average proportion of older adults may be your best choice.

That's looking at it from your perspective. Consider, for a moment, the school's perspective. In some cases, a school may be seeking students from particular geographic regions to bolster its diversity, and you'll want to consider the impact — if any — that your own state residence might have on your application to medical schools in other areas. On the other hand, some schools look for local, in-state students who will continue to work and contribute to communities in that state. Review each school's mission statement to see what they're seeking in their applicants.

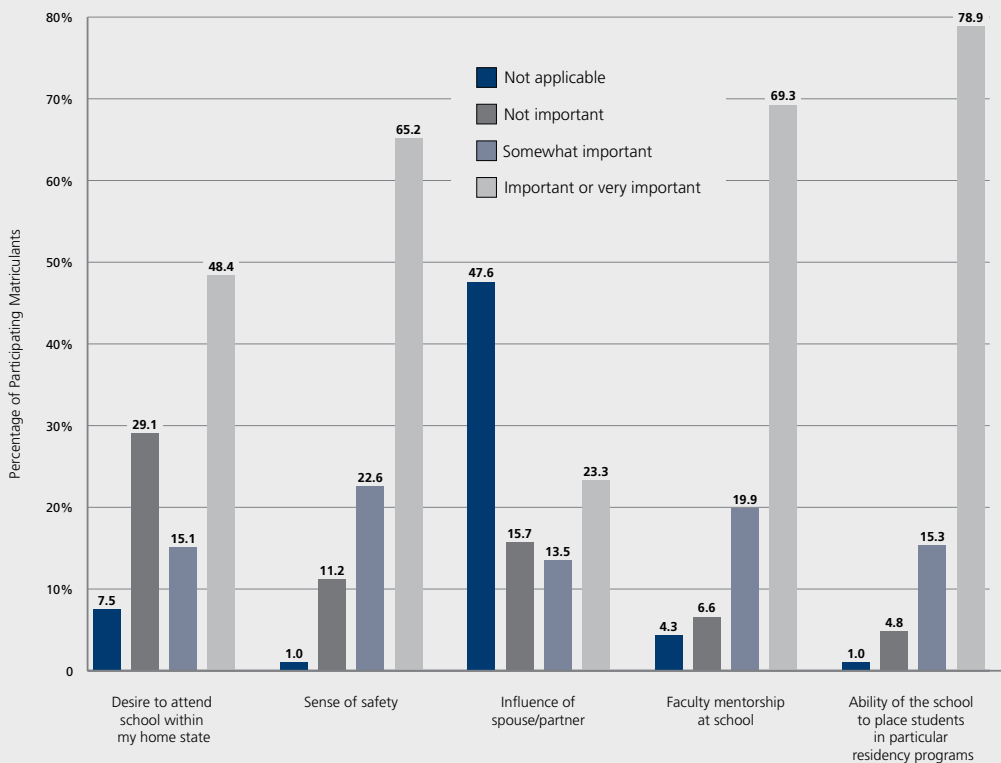
Size and demographics. The size and demographics of the medical school — both in terms of its student body and its faculty — may be a consideration for you as well. The school entries in the [MSAR website](#) contain data on the prior year's entering class, including the number of students by race, sex, age, and other self-reported factors.

Costs. Medical education is expensive, and the expenses associated with particular institutions will no doubt factor into your decision. You won't know what your actual costs will be (or the degree of assistance you

will receive) until a school sends you a financial aid package in conjunction with its acceptance offer. Still, by looking through the school profiles in the MSAR website, you can get a general idea of the relative expenses of each institution and take those numbers into consideration as you narrow your selection.

Figure 6.1 shows how matriculating students felt about specific factors in deciding which school to attend.

Figure 6.1. Matriculating students' responses to this question: In choosing the medical school you now (or will) attend, how important were the following factors?



Source: AAMC 2020 Matriculating Student Questionnaire (MSQ).

Special Regional Opportunities

Finally, you should be aware that some states without a public medical school participate in special interstate and regional agreements that give their residents access to a medical education. Currently, there are five interstate agreements:

- Delaware Institute of Medical Information and Research
dhss.delaware.gov/dhss/dhcc/dimer.html
1-302-577-3240
1-800-292-7935
- Maine Medical Education Foundation Loan
famemaine.com/maine_grants_loans/maine-medical-education-foundation-loan
1-800-228-3734
- University of Utah School of Medicine contract with Idaho
medicine.utah.edu/students/programs/md/admissions/residency-non-residency.php
1-801-581-7498
- Western Interstate Commission for Higher Education
wiche.edu/psep/medi
1-303-541-0200
- WWAMI (Washington, Wyoming, Alaska, Montana, and Idaho) Program
uidaho.edu/academics/wwami/about
1-208-885-6696

Learn more about each of these regional opportunities by visiting their websites or calling their program offices.



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 6.1

Factors to Weigh Before Applying

Use this worksheet to identify and assess the schools where you may apply.

The MSAR website allows you to filter your search for different medical schools by class size, location, community service requirement, and other features (aamc.org/msar). Every medical school has a different curriculum and style. This worksheet can help you determine which factors are important to you.

School name: _____

Factor	Ideal fit	Good fit	No opinion	Unsure	Not a fit	Notes
Course offerings						
Class size						
Location						
Research programs						
Technology						
Interviews and/or meetings with faculty						
Reputation						
Technology						
Tuition and financial aid						
Programs for minority or disadvantaged students						
Teaching methods						
Combined-degree offerings						
Campus tour						
Rural or community offerings						
Residency placement						

Impression of school: ☐ Favorable ☐ Undecided ☐ Unfavorable

Likelihood of applying: ☐ Will apply ☐ Undecided ☐ Unlikely to apply

Follow-up questions to ask: _____

Applying to Medical School



Bridger Rodoni

University of Michigan Medical School

Class of 2022

“I started the application process by working on my personal statement. It was important to me to establish certain core elements I hoped to present about myself to each admissions committee. To do this, I started by writing down the most meaningful events of my life. From there, I identified patterns and similarities among these experiences and started to center my essay around those themes, paying attention to how those themes could be applied to medicine. For example, when I wrote about my experience as a college football player, I discussed how I furthered my resilience, time management skills, and ability to work within large, diverse teams. Each of

these skills is critical to working effectively within medicine, regardless of specialty. Explicitly stating that in these short essays showed the reader what I took away from each activity in my application.

This also allowed me to select the activities I wanted to feature in other areas of my application. When I wrote about these activities, I didn’t just describe what I did; instead, I communicated the lessons I learned from each experience. As I finished reviewing each activity, I realized they all shared some commonalities. Working in agriculture, doing research, and teaching each developed complementary skills that reinforced the core attributes I communicated in my personal statement and interview responses. Ultimately, these themes represented the qualities I bring to the table. This allowed me the opportunity to explicitly state the lessons I took away from each experience and clearly demonstrate my core competencies that I would bring as an entering medical student.

As you go through this process, you must express an inner truth in your application. To put your best self out there, speak about what matters most to you or had the biggest impact on you. Tailoring your application to a specific school, though, may do a disservice to you. Instead, present yourself as genuinely as possible. Do so in a way that allows the person who reads your application to better determine your fit and potential for success within their program. This will ultimately benefit you personally and professionally and will help you endure the challenges of medical school.”

Responsibilities of the Medical School Applicant

As a medical school applicant, you have certain responsibilities. These are reviewed at length at the end of this chapter, but some of the most critical are:

- Meeting all deadlines.
- Completing the AMCAS application accurately.
- Knowing the admission requirements at each school.
- Promptly updating your AMCAS application with any change in contact information.

- Responding promptly to interview invitations.
- Filing for financial aid as soon as possible.
- Withdrawing from the schools you will not attend.

For more details, read the AAMC's Application and Acceptance Protocols for Applicants and Admissions Officers later in this chapter.

American Medical College Application Service®

You may have heard about the American Medical College Application Service (AMCAS®) from your prehealth advisor, your career counselor, or even your classmates. AMCAS is a centralized medical school application processing service offered by the AAMC and used by almost every medical school in the country. This service does not screen applicants; rather, it provides admissions officers with the information and tools they need to select the applicants who are the best fit for their institution.

AMCAS offers many benefits to applicants. The most obvious one is that it allows you to apply to as many medical schools as you want with a single application (although many schools require a secondary application, discussed later in this chapter). It also provides applicants with a single point of transmission for official transcripts, letters of evaluation, and other supporting documentation.

Even if you're not yet ready to begin the application process, you can familiarize yourself with it at aamc.org/amcas. There, you'll find an application overview, tips for completing an application, frequently asked questions, video tutorials, and the comprehensive *2021 AMCAS® Applicant Guide* (students-residents.aamc.org/media/5186/download).

If you have previously registered for the MCAT exam, the Fee Assistance Program, or other AAMC programs and services, you've already created an AAMC username and password and received an AAMC ID. Use this same information to access the AMCAS application site. If you don't already have an AAMC ID number, you'll need to register online to create a username and password before you begin your application.

AMCAS Application Sections

The AMCAS application has nine sections. That may sound like a lot, but remember — you don't have to complete it all at once. You can save your work and return to your application as many times as you want until you finish and are ready to submit it. Here's an overview of what to expect:

1. **Identifying Information.** This section asks you to enter your name, birth information, and gender identity or expression.
2. **Schools Attended.** Here, you'll enter high school and college information. Once you've completed this section (and the Identifying Information section), you'll be able to create a Transcript Request Form to request official transcripts from your registrar.
3. **Biographic Information.** You'll use this section to enter your contact information, citizenship status, legal residence, ethnicity, language(s) spoken, and other biographic information. Also, you'll indicate your immigration status in the citizenship subsection. If the U.S. government approved your Deferred Action for Childhood Arrivals (DACA) application, select "DACA" from the designated drop-down list.
4. **Coursework.** You'll enter grades and credits for every course you've enrolled in at any U.S., U.S. territorial, or Canadian postsecondary institution that appears on your official college transcript(s). You're required to provide information for all the college-level courses you've taken, even if you took them during high school. For courses attempted through a study abroad program, carefully follow the instructions outlined in the *2021 AMCAS® Applicant Guide*. List study abroad coursework under the foreign college, the foreign listing of your home institution, or the institution at which it was attempted. Do not enter the coursework twice.

5. **Work/Activities.** Here, you'll enter any work and extracurricular activities, awards, honors, or publications you'd like to bring to the attention of the medical schools. You may list up to 15 experiences. You'll then choose the three you consider to be the most meaningful and have up to 1,325 characters to explain why each experience was particularly meaningful to you.
6. **Letters of Evaluation.** In this section, you'll provide information about people writing letters of evaluation on your behalf. You may want to review the AAMC's Letters of Evaluation Guidelines, a useful tool developed to help your letter writers. (This step is covered in more detail later in the chapter.)
7. **Medical Schools.** In this section, you'll designate the medical schools to which you want to submit an application. In addition, you can designate which letters of evaluation you wish to send to specific schools.
8. **Personal Statement.** Here, you'll compose an essay about why you want to go to medical school. (This is discussed more thoroughly later in this chapter.)
9. **Standardized Tests.** And finally... your MCAT scores. In this section, you'll review your MCAT scores and enter any additional test information, such as GRE scores. Any MCAT scores from 2003 or later will automatically be released to AMCAS. Please note: It's important to include all the MCAT exams you're scheduled to take on your AMCAS application and update this information as appropriate after you submit your application.

This is a simplified overview of the AMCAS application. Read the [2021 AMCAS® Applicant Guide](#), and explore the various resources for a more thorough understanding of the application on the AMCAS website at aamc.org/amcas.

Transcript Requests via AMCAS

In addition to completing your AMCAS application, you must request that official transcripts from all postsecondary institutions you've attended be sent to AMCAS. AMCAS provides a Transcript Request Form to facilitate this process with your registrar(s). If you've taken courses at a junior college, community college, trade school, or other professional school — regardless of whether you earned credit — within the United States, Canada, or U.S. territories, you must provide an official transcript from that institution. This requirement also applies to any college courses you took in high school. For most applicants, all official transcripts must be received no later than two weeks after the deadline for application materials. Please refer to the [2021 AMCAS® Applicant Guide](#) and the [AMCAS website](#) for detailed information about official transcript requirements.

Limited Changes After Submission

It's important to check your work carefully before you hit "submit" because you're limited in what changes you can make after submission. You can change your contact information (such as addresses and emails) and add schools or letters of evaluation, but other than that, your application will be submitted to schools exactly as it was completed.

Application Processing and Verification

Once AMCAS has received your submitted application and all required official transcripts from each postsecondary school where you were registered, the AMCAS verification process begins. AMCAS verifies the accuracy of your academic record by comparing the information you entered on your application with what's on your official transcripts. During the verification process, AMCAS converts transcript grades to AMCAS grades based on conversion information provided by colleges and universities and calculates an AMCAS GPA. The AMCAS GPA gives medical schools a standard way to compare applicants' academic records. AMCAS GPAs may differ from the GPA shown on your records at the institutions you attended. Once verification is complete, AMCAS makes your application and MCAT scores available to all the medical schools you designated (MCAT scores from 2003 and later are automatically included).

The Application and Admission Cycle

The AMCAS application usually opens to applicants in early May of each year and opens for submission in early June. Participating schools begin receiving transmission of verified application data from AMCAS in late June.

The deadlines for receipt of primary applications to medical schools that participate in AMCAS typically range from the Early Decision Program deadline in early August to the end of December. (Information on secondary applications is discussed later in this chapter.) However, there's no single application timetable because each school establishes its own deadlines for receipt of required materials. You can find specific dates on medical school websites and in the school profiles on the [MSAR website](#).

Medical schools vary in the timing of their admission decisions. Most schools use rolling admissions, selecting students for interviews and making admission decisions as applications are received, rather than waiting until after a specific date to begin their evaluation process. All medical schools must wait until mid-October to start offering acceptance letters. You can find out if a medical school uses rolling admissions by checking its website.

For the 2021 AMCAS application cycle, applicants on average applied to 17 schools. The U.S. medical schools not participating in AMCAS for the 2021 entering class are mostly in Texas. The medical schools in Texas listed below participate in the Texas Medical and Dental School Application Service (TMDSAS) for those pursuing the MD degree. You can learn more about this application service and apply to these schools through TMDSAS at utsystem.edu/tmdsas. Applicants pursuing MD-PhD degrees at all schools but one (Texas Tech University Health Sciences Center Paul L. Foster School of Medicine) can do so through AMCAS, however.

If you're interested in schools that do not participate in AMCAS, please contact them directly for application instructions:

- Baylor College of Medicine
- CUNY School of Medicine – Sophie Davis Biomedical Education Program
- McGovern Medical School at the University of Texas Health Science Center at Houston
- Texas A&M Health Science Center College of Medicine
- Texas Tech University Health Sciences Center Paul L. Foster School of Medicine
- Texas Tech University Health Sciences Center School of Medicine
- University of Houston College of Medicine
- University of Texas Health Science Center at San Antonio Joe R. and Teresa Lozano Long School of Medicine
- University of Texas Medical Branch School of Medicine
- University of Texas Southwestern Medical School

You should also contact schools directly for application information if you wish to pursue a joint degree program, such as a baccalaureate-MD or an MD-PhD.

As far as interviews go, many admissions committees begin meeting with candidates in late summer and continue through spring. However, most interviews are held during the winter months. (This part of the admission cycle is discussed in Chapter 8.) By March 30, medical schools will have issued enough acceptances to at least equal the size of their first-year entering class.

Personal Statements and Letters of Evaluation

As you'll learn in Chapter 8, "The Admission Decision," admissions officers want to know more about you than just where you went to college, the courses you've taken, your grades, and your MCAT scores. They want to know you on a more personal level. That's why an essay and letters of evaluation are integral components of your medical school application.

Your Personal Statement

Every applicant is required to submit a personal essay of up to 5,300 characters (about one page) in length. This is your opportunity to distinguish yourself from other applicants and provide admissions officers with insights about why you're interested in medicine — and why you would be a dedicated and effective physician.

Most admissions committees place significant weight on this section, so take the time to craft an organized, well-written, and compelling statement. Here are some questions you may want to consider while writing your essay:

- Why do you want a career in medicine?
- What motivates you to learn more about medicine?
- What should medical schools know about you that isn't described in other sections of the application?

In addition, you may wish to include information such as:

- What hardships, challenges, or obstacles have influenced your educational pursuits?
- Are you able to explain significant fluctuations in your academic record not explained elsewhere in your application?

It's a good idea to use specific examples in your essay. Instead of writing "Challenges in my childhood led me to consider medicine at an early age," write, "The summer I turned 8, my 11-year-old sister was diagnosed with neuroblastoma, and I witnessed firsthand the compassion and understanding with which the doctor dealt with my parents. It was during those first few difficult months that I decided I wanted to be a physician."

Additionally, ensure that your essay is interesting, follows a logical and orderly flow, and relates to your reasons for choosing medicine and why you believe you'll be successful in medical school and as a physician. Beyond that, be sure to use correct grammar and avoid typographical errors and misspellings.

For MD-PhD Applicants

If you're applying to MD-PhD programs, you'll be required to write two additional essays: a relatively brief one focusing on your reasons for pursuing the combined degree and a lengthier one (about three pages) describing your research activities. You can read more about these additional essays in the *2021 AMCAS® Applicant Guide* or get further guidance from your prehealth advisor or career counselor.

Early Decision Programs

One of your first decisions will be whether to apply to a medical school through the Early Decision Program (EDP) or the regular application process. Although criteria for accepting EDP applicants vary among schools, programs frequently require that applicants show extraordinary credentials. A small percentage of applicants apply through the EDP, and only about half of medical schools offer the option. You can learn more about program requirements at aamc.org/students/applying.

Letters of Evaluation

In the Letters of Evaluation section, you'll provide information about the people writing your letters. Although you can add up to 10 letter entries, medical schools do not necessarily wish to receive 10 letters per applicant. Most schools request only two or three letters. You can find the minimum and maximum letters accepted by each school on the MSAR website. AMCAS accepts letters of evaluation on behalf of participating medical schools. This service enables medical schools to receive all letters electronically from AMCAS and allows letter writers to send their letter to AMCAS, rather than to each individual school. AMCAS permits additional letters so you have the option to designate specific letters for specific schools. For more information and a current list of schools participating in the AMCAS Letter Service, refer to aamc.org/aboutamcasletters.

Medical schools have various requirements for letters of evaluation, but they all require letters in one form or another. If your college has a prehealth advisor, medical schools will probably require a letter from this individual (or from the prehealth committee, if your school has one), as well as a letter from at least one faculty member. In instances where there is no prehealth advisor, many medical schools may ask for additional letters from faculty and often specify that at least one comes from a science professor.

Some medical schools don't specify who should write your letters and welcome additional letters beyond the required ones. However, be aware of any limits on the number they will accept. In all cases, you should review medical schools' websites or the [MSAR website](#) for information on specific letter requirements.

Medical schools want letters from people who are in a position to judge your ability to be successful in medical school, which includes not only your academic capabilities and accomplishments, but also your personal characteristics and skills.

Secondary Applications

Your primary application is your AMCAS application, which provides admissions officers with much of the information they need. However, most medical schools also require a school-specific "secondary" application because it allows them to assess students' reasons for applying to that particular school. (Medical schools will notify you if they would like you to fill out a secondary application, although you can also find out by looking at their profiles on the MSAR website.) Secondary applications may call for additional letters of evaluation, supplemental writing samples, and updated transcripts. Go to the websites of the medical schools you're interested in to learn more.

Application Fees

Medical school application fees fall into four general categories:

- **AMCAS application.** For the 2021-2022 application cycle, the AMCAS application fee plus designation to one school was \$170, and it cost \$42 for each additional school. Check the AMCAS website for the latest application fee information. Remember, some schools don't use AMCAS, and you may pay different fees in those instances.
- **Secondary application.** In 2021, fees for secondary applications ranged from \$0 to \$200.
- **College service fees.** Your college registrar may charge a small fee to send your transcript to AMCAS. Occasionally, you'll incur a fee to send your letters of evaluation to AMCAS.
- **MCAT exam fees.** Although technically not part of the application fee, the costs associated with the MCAT exam are a necessary component of the overall process. The initial registration fee for the MCAT exam is currently \$320 and covers the cost of the exam and distribution of your scores. In addition, you may incur fees for late registration, changes to your registration, or testing at international test sites.

Read more about the MCAT exam in Chapter 5, and get up-to-date information on the MCAT website (aamc.org/mcat). For more information on application fees, go to aamc.org/first/factsheets.

Criminal Background Check

The AAMC facilitates a national background check on all accepted applicants to participating medical schools via Certiphi Screening, Inc. This service provides required background checks to medical schools and prevents you from paying additional fees to each medical school to run these checks independently. For more information, go to aamc.org/amcascbc.

Be aware that participating medical schools may also require applicants to undergo a separate national background check process, if it's required by their own institutional regulations or applicable state law.

Fee Assistance Program

The AAMC believes the cost of applying to medical school should not be a financial barrier to people interested in becoming physicians.

The AAMC Fee Assistance Program helps MCAT examinees and AMCAS applicants who, without financial assistance, would otherwise be unable to take the MCAT exam and apply to medical schools that use the AMCAS application. Visit the Fee Assistance Program website at aamc.org/fap for details about the program's eligibility requirements and to access the application. You'll be able to use your Fee Assistance Program award benefits for up to two calendar years. Benefits expire Dec. 31 the year after they are awarded, regardless of when in the year you apply for, and receive, the award. **You may only apply for fee assistance once per calendar year. Fee Assistance Program benefits are never retroactive.**

Applicants who are approved for fee assistance in 2021 will receive MCAT, AMCAS, and MSAR benefits.

MCAT Benefits

- Reduced registration fees for up to four MCAT exam dates.
- Reduced rescheduling fees for MCAT exam dates.
- A suite of MCAT prep products and resources (you'll receive more details about these benefits if you're awarded fee assistance).
- Up to \$800 toward an updated psychoeducational or medical evaluation if it's required to support your MCAT accommodations application.

Regardless of how many times you're awarded fee assistance, you'll receive MCAT prep product benefits only once.

MSAR Benefits

- Complimentary access to the MSAR website for two years (\$36 value).

AMCAS Benefits

- Waiver for all AMCAS fees for one application submission with up to 20 medical school designations (\$968 value).

Additional fees will be charged for each medical school designation beyond the initial set of 20.

Special Note About Deferred Entry

In recent years, most medical schools have developed delayed-matriculation policies to allow accepted applicants to defer entry without giving up their spot. Deferrals are granted only after acceptance. These programs usually require that you submit a written request, and some schools also ask for a report at the end of the deferral period. Matriculation delays are usually granted for one year, although some schools occasionally defer for longer periods of time. Some institutions may require delayed matriculants to sign an agreement not to apply to other medical schools in the interim, while others permit applications to other schools. If you're interested in this option, seek specific information from schools you applied to. You can find out more about each school's policy by viewing their profile on the MSAR website.

Gap Year and Career Changers

If you're applying to medical school after spending more than a year out of college, you'll need to get transcripts from any additional coursework or degree programs you've completed since your undergraduate graduation. Even if you applied previously to medical school, you'll need to resubmit official transcripts. Also, you must resubmit letters of evaluation to AMCAS each time you apply.

For more information about gap years, please look for the "Making the Most of Your Gap Year" fact sheet at students-residents.aamc.org/applying-medical-school/article/making-most-your-gap-year.

AAMC Application and Acceptance Protocols for Applicants and Admissions Officers

The AAMC recommends certain protocols, outlined in the following boxes, to help ensure that all MD and MD-PhD applicants receive timely notification about the outcome of their application and protect schools and programs from having unfilled positions in their entering classes. Admissions officers and prehealth advisors often refer to these protocols as "traffic rules." Prospective applicants, their advisors, and admissions staff at medical schools and programs should all be aware of these application and acceptance protocols for applicants.

What This Means for You (the Applicant)

These protocols were developed to ensure fairness for both applicants and medical schools. By reading and acknowledging the guidelines, as well as agreeing to adhere to them, applicants and medical schools affirm they understand the timelines and stresses involved with making these important decisions. They also acknowledge that their decisions affect the choices of other applicants and schools in the midst of making acceptance and admission decisions. Admissions officers know that most applicants are anxiously awaiting notifications, but their committees are also diligently working to build the next class for their medical schools. These rules help ensure that everyone does their best to make timely, ethical, and fair decisions during this hectic time. The protocols are periodically reviewed by the AAMC Committee on Admission and approved by the AAMC Council of Deans. The following protocols were approved May 7, 2018.

Application and Acceptance Protocols for Applicants

The AAMC recommends the following steps to help ensure that all MD and MD-PhD applicants receive timely notification about the outcome of their applications and to protect schools and programs from having unfilled positions in their entering classes. These protocols are often referred to as “Traffic Rules” by admissions officers and prehealth advisors. Prospective applicants, their advisors, and admissions staff at medical schools and programs should all be aware of these Application and Acceptance Protocols for applicants. An applicant’s actions during the admissions process should be conducted in the spirit of professionalism and ethics expected of a future physician.

These guidelines are not intended to supersede the policies, timelines, or discretion of individual schools or programs. Each applicant is expected to become familiar with the procedures and requirements of each school to which they apply. The AAMC understands that an individual’s circumstances (e.g., delays in receiving financial aid offer or other compelling personal reasons) may warrant exception from one or more of the following protocols and defers to each school’s judgment in such cases. Below are AAMC recommendations for applicants to an MD or MD-PhD program:

1. Understand and comply with these Applicant Responsibilities as well as with the application, acceptance, and admission procedures at each school or program to which you apply.
2. Provide accurate and truthful information in all aspects of your application, interview(s), acceptance, and admission processes for each school or program to which you apply.
3. Submit all application documents (e.g., primary and secondary application forms, transcript[s], letters of evaluation/recommendation, fees, etc.) on or before the school or program’s published deadline date.
4. Notify all relevant medical school application services of any change, permanent or temporary, to your contact information (e.g., mailing address, telephone number, and email address).
5. If you will be unavailable for an extended period of time (e.g., during foreign travel, vacation, holidays) during the application/admission process:
 - a. Provide instructions regarding your application, and, if applicable, delegate the authority to respond to any offers of acceptance to a parent or other responsible individual in your absence.
 - b. Inform all schools or programs at which your application remains under consideration of this person’s name, contact information, and authority to act on your behalf. Include dates of your unavailability and inclusive dates for the designation of authority to act on your behalf.
6. Respond promptly to a school’s or program’s invitation for an interview. If you cannot appear for a previously scheduled interview, notify the school or program **immediately** that you need to cancel.
7. Begin promptly the steps necessary to determine your eligibility for financial aid. This may include filing need-analysis forms early and encouraging your parents (when required) to file the appropriate income tax forms.
8. In fairness to other applicants, if you have decided before April 30 not to attend a medical school or program that has offered you an acceptance, **promptly** withdraw your application from that school(s) or program(s).
9. Out of respect for other applicants, if you receive an offer of acceptance from more than one school or program:
 - a. Withdraw your acceptance from any school or program you do not plan to attend as soon as you have made that decision;
 - b. On or before April 15, narrow your selection(s) to no more than three schools or programs and withdraw your acceptance(s) from all other schools or programs; and
 - c. On or before April 30, choose the school or program to which you plan to matriculate and promptly withdraw your acceptances from all other schools or programs.
10. If you receive additional acceptances following April 30, it is your responsibility to promptly notify any school(s) you have decided to not attend. Your decision should be made by the deadline established by the medical school(s).
11. To the extent you have not already done so in furtherance of paragraphs 9 and 10 above, withdraw your acceptance(s) from all other schools or programs as soon as you matriculate at a U.S. or Canadian school or program. For the purposes of these protocols, *matriculation* means that a student has begun a pre-matriculation program, attended orientation immediately preceding enrollment, or enrolled in classes at a medical school.

Approved by the Council of Deans Advisory Board, May 7, 2018

*If any date falls on a weekend/holiday the recommendation(s) will apply to the following business day.

Application and Acceptance Protocols for Admissions Officers

The AAMC application policies are established protocols for applicants and admissions officers.

The AAMC recommends the following guidelines to ensure that MD and MD-PhD applicants are afforded timely notification of the outcome of their applications and timely access to available first-year positions and that schools and programs are able to reasonably anticipate accepted applicant matriculation in order to avoid unfilled positions in their entering classes. For the purposes of these protocols, matriculation means that a student has begun a pre-matriculation program, attended orientation immediately preceding enrollment, or enrolled in classes at a medical school.

These protocols are often referred to as “Traffic Rules” by admissions officers and prehealth advisors. These recommendations are distributed for the information of prospective MD and MD-PhD students, their advisors, and personnel at the medical schools and programs to which they have applied, and they are offered in the spirit of undertaking the admission process with the high degree of integrity expected of the medical profession. These guidelines are not intended to supersede the policies, timelines, or discretion of the individual schools or programs. The AAMC understands that an individual's circumstances (e.g., delays in receiving financial aid offer or other compelling personal reasons) may warrant exception from one or more of the following protocols, and defers to each school's judgment in such cases.

The AAMC recommends that each MD or MD-PhD granting school or program:

1. Comply with established procedures to:
 - a. Annually publish, amend, and adhere to its application, acceptance, and admission procedures.
 - b. Abide by all conditions of participation agreements with application services (if using).
2. Promptly communicate admissions decisions:
 - a. By October 1, notify Early Decision applicants and the American Medical College Application Service® (AMCAS®) of Early Decision Program (EDP) admission actions.
 - b. From October 15 to March 15, notify AMCAS within five business days of all admission actions, either written or verbal, that have been communicated to an applicant.
 - c. From March 16 to April 30, notify AMCAS within two business days of all admissions acceptance, withdrawal, or deferral actions, either written or verbal, that have been communicated to an applicant. All admission actions are listed and defined on the AAMC website.
 - d. From May 1 to the first day of class, notify AMCAS of all admission actions within 24 hours.
 - e. Notify AMCAS of each student's matriculation within 24 hours.
 - f. An acceptance action is defined as the point at which a medical school communicates a written or verbal acceptance offer to an applicant.
 - g. An acceptance offer to any dual-degree program that occurs after an initial acceptance should follow the above timelines.
3. Notify all Regular MD program applicants of their acceptance on or after October 15* of each admission cycle, but no earlier. Schools and programs may notify applicants of admission decisions other than acceptance prior to October 15.
4. By March 15 of the matriculation year, issue a number of acceptance offers at least equal to the expected number of students in its first-year entering class and report those acceptance actions to AMCAS.
5. On or before April 30, permit **ALL** applicants (except for EDP applicants):
 - a. A minimum of two weeks to respond to their acceptance offer.
 - b. To hold acceptance offers or a waitlist position from any other schools or programs without penalty (i.e., scholarships).
6. After April 30:
 - a. Permit all applicants:
 1. A minimum of five business days to respond to an acceptance offer. This may be reduced to a minimum of two business days within 30 days of the start of orientation.
 2. To submit a statement of intent, a deposit, or both.
 - b. Recognize and respect the challenges of applicants with multiple acceptance offers, applicants who have not yet received an acceptance offer, and applicants who have not yet been informed about financial aid opportunities at schools to which they have been accepted.
7. In addition to any condition included in a school's offer letter, after April 30, each school may exercise its school-specific procedures to confirm an accepted applicant's intention to matriculate or to ensure that it fills each seat in its entering class. If a school is unable to confirm an applicant's intention to matriculate, the school may choose to rescind the acceptance.
8. Each school's initial deposit(s) should not exceed \$100 and (except for EDP applicants) and should be refundable at least until April 30. If the applicant enrolls at the school, the school should credit the deposit toward tuition.
9. Making an offer of admission to an applicant who has already matriculated at another school could result in the other school having an unfilled slot in its class. Each school is encouraged to take reasonable measures, including asking applicants under consideration whether they have already matriculated at another medical school, and carefully consider that information when deciding whether to make an offer to an applicant.
10. Each school, consistent with its own privacy policies, should appropriately safeguard information related to an individual's application for admission or financial aid.
11. Each school should treat all letters of evaluation submitted in support of an application as **confidential**, except in those states with applicable laws to the contrary. The contents of a letter of evaluation should not be revealed to an applicant at any time.

Approved by the Council of Deans Advisory Board, May 7, 2018

*If any date falls on a weekend/holiday, the recommendation(s) will apply to the following business day.

AMCAS Choose Your Medical School Tool

What is the Choose Your Medical School tool?

The AAMC American Medical College Application Service (AMCAS) created this tool to support medical schools' enrollment management processes and help applicants communicate their intentions about which medical schools they plan to attend. Schools will only be able to access information about their accepted and alternate-list (waitlist) applicants. Applicants should use the tool at the direction of the schools to which they have applied.

How does this tool work?

It is important to review and follow each individual school's admission instructions, policies, deadlines, and requirements. We recommend visiting each school's admissions website, checking the Medical School Admission Requirements website, and directly communicating with the schools to which you are applying to make sure you understand and follow their specific instructions.

Beginning **Feb. 19**, applicants holding one or more acceptance offers can select "Plan to Enroll" in the AMCAS application at any school from which they have received an acceptance offer. Making this selection allows schools to view in aggregate the number of applicants who selected "Plan to Enroll" for their schools.

- Until April 30, applicants can, at the time they make this selection, continue to hold other acceptances, remain on alternate lists, and continue to interview at other schools.
- If applicants receive new offers, they can update their selection at any time, but they can select only one school at a time.
- A school will only be able to see the aggregate number of their applicants who have selected that school or another school in the AMCAS tool to assist them with their enrollment management.
- If an applicant selects "Plan to Enroll" at another school, AMCAS will not identify the applicant or the other school.

Beginning **April 30**, accepted applicants will have two options to select: "Plan to Enroll" or "Commit to Enroll." Selecting "Commit to Enroll" indicates that the applicant has made a final selection and withdrawn all other applications.

- Starting April 30, the AMCAS tool will identify the applicants making either selection. This applicant-specific information will be visible only to schools where the applicant has a current acceptance or alternate-list position.
- If an applicant selects "Commit to Enroll" to a school, all other schools where the applicant also holds an acceptance or alternate-list offer will be notified but will not know the name of the school selected.
- **Selecting "Commit to Enroll" does not automatically withdraw applications from other medical schools. Applicants must communicate directly with all schools about their final decision according to each school's specific policy.**

What reports will medical schools be able to run?

Medical schools will have access to the following reports:

- **Feb. 19:** Medical schools can run an aggregate report to find out how many applicants in their pool have selected "Plan to Enroll" at their school versus another school.*
- **April 30:** Medical schools can run detailed reports to identify accepted and alternate-list applicants who have selected "Plan to Enroll" or "Commit to Enroll" at their school versus another school.
- **Post-cycle:** Medical schools can see where applicants in their pool matriculated (released in October of the matriculating year).

*In accordance with current protocols, applicants have until April 30 to start narrowing their accepted offers to one. Until then, the AMCAS tool cannot identify applicants to schools.

Timeline: What Applicants and Medical Schools Can Do and When

Date	Milestone	Applicant Activity	Medical School Actions
Feb. 19*	"Plan to Enroll" becomes available for applicants to select in the AMCAS application.	Applicants can begin to select "Plan to Enroll" for their top medical school choice. Applicants should use the tool at the direction of the schools to which they have applied.	Medical schools can run an aggregate report to determine how many applicants in their pool have selected "Plan to Enroll" for their school or for another school.**
April 15*	Applicant protocols ask applicants to narrow their acceptance offers to three.	Applicants holding more than three offers should narrow their offers of acceptance to three, with no limit on alternate-list offers.	Medical schools continue to submit timely admissions actions to the AMCAS program.
April 30*	"Commit to Enroll" becomes available to applicants in the AMCAS tool. "Plan to Enroll" remains available to applicants in the AMCAS tool.	Applicants should use the tool at the direction of the schools to which they have applied and can select "Plan to Enroll" or "Commit to Enroll" in the AMCAS tool. "Commit to Enroll" indicates that they have made their final selection and have withdrawn all other applications. This does not automatically withdraw applicants from other medical schools.	Medical schools can run detailed reports to identify their accepted and alternate-list applicants who have selected "Plan to Enroll" or "Commit to Enroll" at their school versus another school.
Post-cycle (around October)	AMCAS application cycle closes.	Applicants have matriculated.	Medical schools can see where applicants in their pool matriculated.

*AMCAS will email applicants who have an acceptance about the best practices of the Choose Your Medical School tool and the significance of the protocols.

**Schools will only be able to access information on applicants who were accepted to their school. Schools will not be able view students who hold zero acceptances.

Example of Applicant Who Reviewed School-Specific Policies

February

Feb. 1

Alex the AMCAS applicant holds four acceptances and is on three alternate lists.

Feb. 19

Alex selects “Plan to Enroll” for Medical School A in the AMCAS tool.

March

March 15

Alex receives a better offer from Medical School B and changes his “Plan to Enroll” selection from Medical School A to Medical School B. He is holding four acceptances and remains on three alternate lists.

April

April 15

Alex narrows his selection to three acceptances and withdraws his acceptance from Medical School C with direct communication. He remains on three alternate lists.

April 30

Alex narrows his selection to one school, Medical School B, and keeps his “Plan to Enroll” status the same. He remains on three alternate lists and has withdrawn from two schools. He has also reviewed the school-specific policy for Medical School B and is not required to select “Commit to Enroll.”

May

May 15

Alex receives an offer from the Medical School D. He accepts and selects “Plan to Enroll” for this school in the AMCAS tool. He withdraws his application from Medical School B with direct communication and remains on two alternate lists.

June

Medical School D matriculates on **June 29** and requires applicants to select “Commit to Enroll” 21 days prior to matriculation.

On **June 8**, 21 days before matriculation, Alex selects “Commit to Enroll” in the AMCAS tool based on the school-specific policy of the Medical School D. He withdraws all other applications with direct communication to those schools.



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 7.1

Identifying Your Letter Writers

Be sure that you're familiar with your school's policy on letters of evaluation. It may provide a committee or composite letter on your behalf. If you're responsible for selecting individuals to write your letters of evaluation, look for someone who knows you well and can speak to your readiness for medical school. These letters can be very valuable, so you should be thoughtful in selecting who you ask to write on your behalf.

How to choose an appropriate letter writer and keep track of your interactions with them

Maintain a journal or log that indicates where you've worked and volunteered and what classes you've taken. It's important to keep track of the faculty members and supervisors you work with because those people will likely be able to write you a strong letter of evaluation when it comes time to apply. Keep notes about time spent working on particular projects so you can remember what you did. When you finish working with a particular person, you can ask them to write you a reference letter.

Letter writer's name	Why this person would be a good advocate for me	Contact info	Letter complete?
[Example] Dr. Nelson	Can speak to my research and writing experience from biology lab	email@school.edu	<input checked="" type="checkbox"/> Yes!
			<input type="checkbox"/> Yes!
			<input type="checkbox"/> Yes!
			<input type="checkbox"/> Yes!

The Admission Decision



Ellie Fratt

Kaiser Permanente Bernard J. Tyson School of Medicine
Class of 2024

“My biggest advice to ease application cycle stress is simple: prepare early. Be as organized as possible. For example, I found it helpful to plan responses on secondary applications around essay questions common to multiple schools. After you submit your secondary applications, if you don’t have a premed advisor, reach out to one at your undergraduate school or through the National Association of Advisors for the Health Professions [“Find an Advisor”](#) site. Ask the advisor, a friend, or a coworker to help you simulate mock interviews so you can be as relaxed and prepared as possible when interview days arrive. Often, the most difficult part is feeling comfortable and natural

highlighting your strengths and ensuring the things that make you “you” come through in your interviews. For example, when I was asked to tell the interviewers about myself, I made it a point to talk about myself outside of what was in my application — my love for hiking, camping, running, and working out, and how that love came from my family of biologists and runners. Don’t be afraid to let your personality and your passions shine!

Unfortunately, rejections are an inevitable part of the application cycle for applicants to medical school. I tried to look at rejections as confirmations that other schools were better fits for me. In retrospect, I realize I may not have actually been happy or successful at many schools I applied to due to geography, curriculum, or other factors — and those were the schools that rejected me.

I ultimately committed to the Kaiser Permanente Bernard J. Tyson School of Medicine because it aligned with my values and goals. The school emphasizes research, has smaller class sizes, and a nonlecture-based curriculum. I also have a strong interest in exploring health care systems and am ecstatic to be at a school with an entire health systems science curriculum. Getting to know my future classmates over innumerable Zoom calls as we made our final decisions sealed the deal for me; I knew I would be surrounded by people similar to myself, who were passionate, curious, kind, and supportive.”

Holistic Review of Medical School Applicants

What does holistic review mean, and how does it affect the admission review process?

Holistic review is a flexible, individualized way of assessing an applicant. The review considers all an applicant’s experiences, attributes, and academic metrics (E-A-M) and, when taken together, how the individual may contribute value as a medical student and future physician. When admissions committees select individual applicants, they intentionally try to create a broadly diverse class to help fulfill their school’s mission.

Each medical school’s admissions office evaluates applicants based on the mission, goals, and diversity interests of that institution. Admissions committees must decide which applicants will best serve the needs of their patients, the community, and the medical profession at large. They seek a broadly diverse student

body because diversity of backgrounds and perspectives has consistently been shown to drive educational and professional excellence. Schools look for applicants with a track record that demonstrates the knowledge, skills, attitudes, and behaviors that will best prepare them to navigate challenges and thrive as both learners and physicians. Depending on its mission, one school might look for applicants who demonstrate service to communities underserved by the current health care system, while another school may seek applicants who have shown creativity and independent productivity in scholarly activities.

Admissions officers carefully review a multitude of criteria — rather than focusing on just one or two facets — to gain an appreciation of the whole person. Many applicants believe that admissions officers weigh high GPAs and MCAT® scores above all else. While these academic metrics are important components of an admission decision, they are only one part of the overall application package. An applicant's ability to balance multiple priorities and responsibilities as well as the resilience they've shown in handling various challenges are considered along with grades and MCAT scores. This helps explain why there are many cases in which a high-scoring applicant with a near-perfect GPA may not get into medical school, while other applicants with scores and grades below the average do. Admission decisions involve more than academic metrics.

Experiences

Your experiences convey a lot about your interests, responsibilities, capabilities, and knowledge. As a result, medical schools are interested in the path you have taken to get where you are at this stage in your life. They also take a close look at what you've learned along the way. It helps them gauge not only how likely you are to be successful in their programs, but also to what degree you'll support their mission and contribute value as a physician.

Chapter 2, on undergraduate preparation, mentioned how important your extracurricular activities may be to an admissions committee — and not just clubs and organizations within your college, but also outside of school. Your experiences — particularly those related to medicine or research — are an important component that affects your competitiveness as a candidate. For instance, if you are balancing a 20-to-30-hour-a-week job to pay for school while attending classes or have responsibilities caring for a younger sibling or elderly relative, those experiences are important to share with admissions committees. They communicate information about your different attributes and provide additional context for interpreting your grades. Your experiences — and the insights you gained from them — also help admissions committees identify what's unique about you and how you may contribute to their school and the practice of medicine.

Beyond that, the degree to which you contributed to and participated in these activities is vital. Medical schools value a demonstration of true commitment, so if you've made a significant contribution to an organization or taken on increasing levels of responsibility, make that clear to the admissions committee. They're interested not only in what you've done, but how you think those experiences have influenced who you are and what you want to do. A series of short-term involvements (volunteering a day here, spending an afternoon there) does not really convey a deep interest, and this lack of motivation is apparent to admissions officials. They're looking for substantial, committed participation in areas that are truly important to you. Only then are they able to gain some insights into your real interests and judge how well your goals and their missions align.

Again, the mission of each school will play a large part in how your experience is evaluated. For example, institutions whose goal is to increase the number of physicians practicing in underserved areas will focus attention on the summer you spent volunteering in a free clinic or doing rural or urban community outreach on health promotion. In general, medical schools especially value community and volunteer experience related to the health care field.

Concept of “Distance Traveled”

Here's another thing to consider: Admissions officers are likely to place significance on any obstacles or hardships you've overcome to get to this point in your education. This concept, known as “distance traveled,” refers to those life challenges you've faced and conquered. Medical schools view these instances as admirable

experiences indicative of some very positive traits, such as resilience and persistence. As with other experiences, you can help the admissions committee better understand and appreciate your unique contributions by not only describing such experiences, but also describing how they have influenced you and your desire to be a physician.

Experiences likely to be important to admissions committees:

- Serving as the primary caregiver for an ill family member.
- Helping to support your family financially.
- Overcoming obstacles or hardships.
- Being employed.
- Working, volunteering, or shadowing in a health care setting.
- Participating in research.
- Participating in and leading community-based or volunteer organizations.

Attributes

Admissions committees want to know if you have what it takes to become a competent and compassionate doctor. This includes the ability to master the science and medicine behind it all, of course, but it also requires that you have some key personal attributes. Admissions committees use various methods to determine whether you have those attributes. While personal experiences, such as volunteering for three consecutive summers at a medical clinic, certainly convey dedication and help demonstrate your proficiency in these areas, admissions committees will look to your personal statement, letters of evaluation, and interviews to gauge whether you have the desire to build on these experiences in medical school.

Are you empathetic? Do you have integrity? Can you communicate effectively and with people different from yourself? Traits such as these are necessary to develop into the kind of physician needed for the future.

Examples of attributes likely to be important to admissions committees:

- Adaptability.
- Critical thinking.
- Integrity.
- Logical reasoning.
- Oral communication skills.
- Resilience.
- Personal maturity.
- Reliability.
- Self-discipline.
- Work habits.
- Compassion.
- Cultural competence.
- Intellectual curiosity.
- Motivation for medicine.
- Persistence.
- Proficiency in a second language.

Medical schools analyze a broad range of attributes, including those related to the applicant's skills and abilities, personal and professional characteristics, and demographic factors.

- **Skills and abilities** could include active listening, critical thinking, and multilingual ability.
- **Personal and professional characteristics** could include resilience, intellectual curiosity, and empathy.
- **Demographic factors** could include socioeconomic status, race, and gender.

In addition to these general qualities, medical schools give weight to specific characteristics that align with their missions. Examples could include research inquisitiveness, empathy, teamwork, curiosity, and a desire for knowledge about health care delivery systems.

Academic Metrics

Admissions committees need to determine whether you have the academic skills and knowledge necessary to succeed in medical school. Committee members will consider your academic record and MCAT scores to measure your knowledge and abilities objectively.

Academic History

Your academic history helps admissions committees determine whether your study skills, persistence, course of study, and grades predict success at their medical school. Committee members carefully review your college transcript and consider:

- Grades earned in each course and lab.
- Grade trends in the last two years of schooling.
- Number of credit hours carried in each academic period.
- Distribution of coursework among the biological, physical, and social sciences and the humanities.
- Need for remediation of unsatisfactory academic work.
- Number of incomplete grades and course withdrawals.
- Number of years taken to complete the degree program.
- The amount of advanced coursework completed in addition to the standard prerequisites and requirements.

MCAT Scores

Admissions committees can better predict success when they add MCAT scores into the mix. That's because there can be significant differences in grading scales and standards from college to college, and MCAT scores provide a standardized measure by which to compare applicants. In fact, the ability of admissions officers to predict who will be successful in the first two years of their programs increases by as much as 50% (gauging by first- and second-year medical school grades) when they look at MCAT scores in conjunction with undergraduate GPAs rather than grades alone.

As a result, the better your grades and the higher your scores, the more likely you are to be accepted. It is important to remember there's still a wide range of MCAT scores and GPAs among accepted applicants and that those are used in conjunction with other factors, as discussed earlier in this chapter.

Making the Evaluation

Admissions committees gauge all three of these areas — experiences, attributes, and academic metrics — and how they relate to each other in several ways. Although each medical school establishes its own criteria, schools usually prefer applicants who balanced science and humanities coursework, carried respectable course loads, and, generally, earned 3.0-4.0 GPAs (on a 4.0 scale).

Several elements within the application process speak to your experiences and attributes. Your personal comments essay, as mentioned in Chapter 7, gives you the opportunity to tell committee members about your extracurricular activities, distance traveled, volunteer efforts, and medical-related work experience. The personal attributes that accompany these activities can often be inferred. For example, a role as an officer in a school club conveys leadership experience. Working in a medical clinic summer after summer demonstrates motivation to pursue medicine. A long history of volunteering with fundraisers for cancer research suggests teamwork and compassion. Applicants can speak to these experiences in their statements and during interviews to further underscore these connections.

Your letters of evaluation, also described in Chapter 7, attest to your personal attributes. Ask your professors and advisor (and other evaluators) to address your persistence, strong work habits, and self-discipline. The faculty and administrative staff at your undergraduate school will know how to craft a letter of evaluation, but for others, you might want to suggest a few key concepts.

Then there are the academic metrics. As you may know, your academic record is part of your AMCAS application and includes both your college transcript(s) and MCAT scores. From there, committee members can determine whether you have the grades, range of coursework, and foundation of knowledge they seek in their successful applicants.

Schools consider your experiences, attributes, and academic metrics in combination. Together, they give shape to what you, as an applicant, may contribute to their medical school and to health care at large. It's not only about what you did and what you know, but also who you are and what you bring to the learning environment and the medical profession.

The Interview Is Key

If you've been invited to an interview, you should feel confident because you've already impressed your reviewers with your strong personal statement, background, letters of evaluation, and academic history. The typical interview day gives you a chance to tour the medical school's facility and meet the students, faculty, and staff you may be interacting with for the next several years. Take this opportunity to assess the culture and learning environment and explore whether the school might be a good fit for you. Now, you have an opportunity to shine. Medical schools usually interview significantly more applicants than their class size, and this is why the interview is likely to be the number one determining factor at this point in the admission process. Other factors include how you interact with others and how you react to stressful questions.

The fact that interviews are given at all is a significant distinction of medical schools; some professional schools don't require them. The medical school interview attests to the degree to which admissions officers seek — and medical schools value — qualities and characteristics such as empathy, self-awareness, communication ability, and interpersonal skills that can best be judged in a direct interview. You can take the following steps to ensure you're prepared for it.

Know the Basics

Whether it's for a new job or for a seat in a medical school's entering class, certain similarities exist in all interviewing situations. To prepare, a good start is to review any interviewing books in your school's library or prehealth advisor's office, find out whether your advisor or premed club offers a mock-interview session, and search online for tips and interview resources. The Aspiring Docs® library offers two fact sheets that describe the most common types of interviews and tips on how to prepare yourself. Check out the fact sheets at aamc.org/aspiringdocs.

Know What Type of Interview to Expect

It helps to be ready for several different interview formats. At some schools, interviews are held with individual admissions committee members; at others, group interviews are the norm. While most interviews are held on the medical school campus, some schools have designated interviewers in different geographic regions to

minimize time and expense for applicants. Information about a school's interview policies and procedures is usually provided to applicants in the initial stages of the selection process. Check the [MSAR website](#) to find the types of interviews offered, such as one-on-one, panel, multiple mini interview, and video interview.

Be Comfortable With Different Interviewing Styles

You probably have had some experience interviewing for summer and part-time jobs and possibly for your undergraduate school, so it won't surprise you that interviewers have their own styles and follow different formats. Some interviewers follow a structured design, asking questions from a predetermined list and assigning numeric scores to each answer. Others prefer a more free-flowing conversation and provide the applicant with an opportunity for more dialogue and conversation. Increasingly, schools are using the multiple mini interview (MMI), which typically consists of six to 10 very short interviews that each revolve around a specific scenario. The MMI assesses communication skills, specifically verbal and nonverbal skills that cannot be measured using standardized written exams or reviewing coursework transcripts.

For more information, review the MMI fact sheet at students-residents.aamc.org/applying-medical-school/article/what-its-participate-multiple-mini-interviews-mmis.

Do Your Research

Being able to speak knowledgeably about the medical school shows you're interested and invested in their particular program. Investigate the school thoroughly by reviewing its profile on the [MSAR website](#), the school's website, the information packet sent to you, and any articles you can find. Your time is limited, so don't waste it by asking questions you can answer on your own by reading the school's website, reviewing their materials, or found on the MSAR website. Try to talk with current students to get an accurate sense of what the school is like from a student's perspective. You'll want to impress your interviewer not only with your potential for success, but also with your interest in the specific institution. You can demonstrate these qualities through your answers to the interviewer's questions, as well as by the questions you ask.

Be Ready to Ask Questions

There will come a point in your interview when you'll be asked if you have any questions, and it's an opportunity you don't want to pass up. Not only can you clarify any remaining issues, but you'll have another way to demonstrate your commitment, astuteness, and interest in that particular school. With that in mind, prepare two or three questions specific to that school. Need a way to generate ideas? Check out the AAMC's "Thirty-Five Questions I Wish I Had Asked" at aamc.org/35questions.

Practice

Most admissions committee members are experienced interviewers who want to learn about the "real" person you are. Be honest and open during your meeting, and do not try to just give the answers you think the interviewer wants to hear. Keep the interview conversational. If you're apprehensive about the process, asking a trusted advisor or friend to conduct mock interviews with you can help build your confidence.

Remember, the interview is an opportunity to discuss your personal history and motivation for pursuing a career in medicine. It also gives you a chance to address any aspects of your application that merit emphasis or explanation. Be sure to present yourself in the best possible light by preparing thoroughly for your meeting. Think about how you conduct yourself among current students and staff during informal meetings, too. Every interaction can create an impression of who you are, and how you present yourself usually comes up during a post-interview discussion.

A Few Last Reminders for Your Interview Day

When it comes to what to wear, a good rule of thumb is to dress for the job you seek. In short, look professional. Your interview is likely to be coupled with a tour of the campus, so be sure to wear shoes and an outfit that you're comfortable walking in.

Your interview day is a long one. You'll be doing a lot of talking and meeting numerous people. It's okay to bring a water bottle or drink with you. It's very important to be aware that everyone on campus you encounter is someone who can give feedback about you — positive and negative. Be sure to use good manners, be courteous to everyone, and show your enthusiasm. Lastly, keep your phone out of sight and on silent. You should not have it out at any time during the interview or campus tour. Remember, the people you speak with are evaluating not only your academic potential but also how you conduct yourself professionally and whether you're a good fit for their medical school.

Your Interview Rights and Responsibilities

Although interviewers are instructed by admissions officers and guided by federal statutes on what are unfair or discriminatory preadmission inquiries, there may be an occasion when an interviewer asks an inappropriate question. (Refer to examples in the box at right.)

You have the right not to answer what you sense is an inappropriate question. If such a question is asked, try to relax and provide a thoughtful and articulate response (two essential characteristics of a good physician). You may also respectfully decline to answer the question and explain that you were advised not to answer questions that you sensed were inappropriate.

You have the responsibility to report being asked an inappropriate question to help prevent further occurrences. Medical schools may establish formal procedures that enable applicants to report such incidents in a confidential manner.

Medical schools may inform you of these procedures prior to interviews and assure you that reporting an incident will not bias your evaluation.

If a medical school did not inform you of its procedures and an incident occurs, use these guidelines. If possible, report the incident in confidence to an admissions officer during the interview day, including the interviewer's name and the interview question(s) asked. Otherwise, email this information to an admissions officer within 24 hours of the interview, noting the date and time of the incident. Furthermore, you have the right to ask if another interview is deemed necessary to ensure an unbiased evaluation of your application to that medical school.

Some interviewers use the interview to assess how well you function under stress and may purposely ask challenging questions to observe how you respond under pressure.

How you communicate will be a critical part of the encounter; however, this does not give an interviewer the right to ask you inappropriate questions in their attempt to challenge you during the interview.

Examples of inappropriate questions:

- Q. What is your race, ethnicity, religion, sexual orientation, political affiliation, marital status, opinion on abortion and/or euthanasia, income, value of your home, credit score, etc.?*
- Q. Are you planning on having children during medical school?*
- Q. Do you have any disabilities?*
- Q. Will you require special accommodations?*
- Q. Have you ever been arrested?*
- Q. Have you ever done drugs?*
- Q. How old are you?*

Sample responses to inappropriate questions:

- Q. What are your plans for expanding your family during medical school?*
- A. Can you please clarify your question?**
I want to make sure that I'm providing information that is most relevant to my candidacy.
- Q. Have you ever done drugs?*
- A. I am uncomfortable discussing my medical history and possible use of prescription medication.**

Core Competencies and Anatomy of an Applicant

While each medical school has its own process for reviewing candidates, many medical schools use the **15 Core Competencies for Entering Medical Students**, which has been endorsed by the AAMC Group on Student Affairs Committee on Admissions. These competencies provide a framework to consider when communicating how your work, activities, and life experiences demonstrate your readiness for medical school. Successful medical school applicants are able to show that they possess skills, knowledge, and capabilities in the 15 defined areas shown in Table 8.1.

Table 8.1. Core Competencies for Entering Medical Students Endorsed by the AAMC Group on Student Affairs Committee on Admissions

Preprofessional Competencies	Thinking and Reasoning Competencies	Science Competencies
<ul style="list-style-type: none">• Service Orientation• Social Skills• Cultural Competence• Teamwork• Oral Communication• Ethical Responsibility to Self and Others• Reliability and Dependability• Resilience and Adaptability• Capacity for Improvement	<ul style="list-style-type: none">• Critical Thinking• Quantitative Reasoning• Scientific Inquiry• Written Communication	<ul style="list-style-type: none">• Living Systems• Human Behavior

To help explain the competencies and provide real examples, the AAMC created Anatomy of an Applicant (aamc.org/corecompetencies), a resource that shares the pathways of medical students, along with commentary from their prehealth advisors and the admissions officers who accepted them. This resource was developed in direct response to inquiries from applicants, prehealth advisors, and admissions officers who asked the AAMC for help in better understanding how applicants can convey their aptitude in the core competencies. It provides guidance on how the core competencies could be developed and demonstrated through an applicant’s experiences in preparation for medical school.

The work and activities you are already involved with, and your life experiences, likely demonstrate these competencies. For example, you can show competency in scientific inquiry by excelling in scientific research, or you can illustrate competency in service orientation by leading a service trip. As you’ll see in the [Anatomy of an Applicant student profiles](#), one experience can offer evidence of proficiency across multiple competencies.

These profiles share the personal stories of medical students — their paths to medical school and what they identify as their strongest competencies. Anatomy of an Applicant also includes competency definitions, the parts of an application and what they tell schools about you, and self-assessment worksheets.



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 8.1

Possible Questions to Ask During Interviews

As you research the medical schools you're interested in attending, use this worksheet to keep track of questions you may want to ask during your interview. Print or save this page for individual schools, and review it the night before your interview or bring it with you. You can find many questions here: aamc.org/35questions.

Name of medical school: _____

Type of interview: _____

Date of interview: _____

Questions about:

1. Curriculum _____

2. Student involvement _____

3. Special programs _____

4. Financial aid _____

5. Facilities _____

6. Academic evaluations _____

7. Student support _____

8. Residency placement _____

9. Other _____

Applicant and Acceeptee Data

A quick look at the 2020-2021 entering class:

- In 2020-2021, 53,030 people applied to the 2020 entering class across all MD-granting medical schools.
- By fall 2020, 23,105 applicants had been offered an acceptance to at least one medical school, and 22,239 accepted applicants had matriculated.

These accepted applicants possessed a broad range of MCAT scores — from 477 to 538, with a median score of 512 — and undergraduate grade point averages ranging from 2.14 to 4.00, with a median GPA of 3.79. Accepted applicants also reported a wide variety of personal characteristics and life experiences, with over 80% reporting community service experiences. Women outnumbered men among accepted applicants for the fourth consecutive year. The number of accepted applicants identifying as Black or African American, American Indian or Alaska Native, and Hispanic, Latino, or of Spanish origin increased from the previous year.

This chapter contains relevant data on the entire applicant pool, as well as accepted and not accepted applicants, for the 2020 entering class. All data presented in this chapter are accurate as of Oct. 29, 2020.* In the following charts:

- “All applicants” refers to all applicants to the 2020 entering class.
- “Accepted applicants” refers to those applicants accepted to at least one medical school.
- “Not accepted applicants” refers to those applicants not accepted to any medical school.

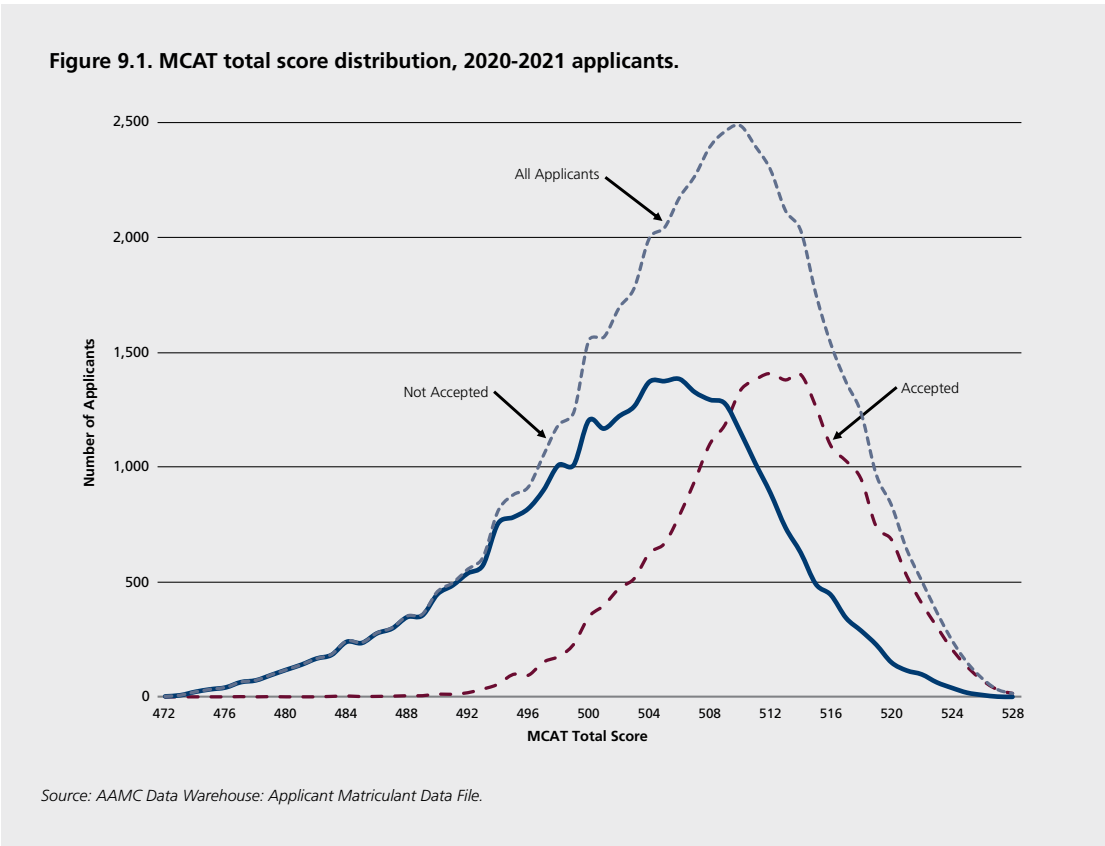
In the following pages, we provide data related to performance on the MCAT exam, undergraduate GPA, MCAT scores and undergraduate GPA combined, undergraduate major, gender, age, type of application, and race and ethnicity.

*Source: AAMC Data Warehouse: AAMC Applicant Matriculant Data File.

The applicant resources team thanks Brianna Gunter, AAMC senior research analyst, for her significant contributions to this chapter.

Performance on the MCAT Exam

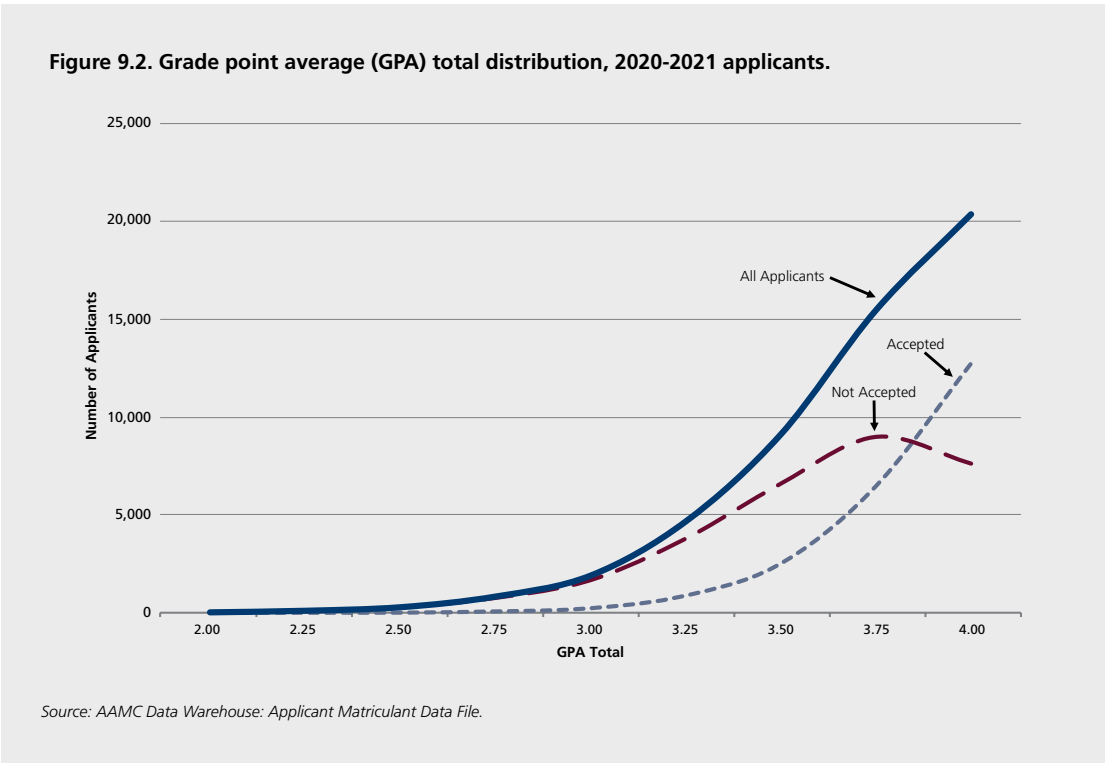
Figure 9.1 summarizes the overall performance of the 2020-2021 applicants who submitted scores from the MCAT exam. The figure shows that these 2020-2021 applicants achieved total scores ranging from 472 to 528; the median score for applicants for 2020-2021 was 507. Accepted applicants had total scores ranging from 477 to 528; 14 accepted applicants had total scores of 487 or below (an average score of about 121 on each section of the test). The total MCAT score most commonly achieved by accepted applicants was 512.



No score on a single MCAT section and no total MCAT score guarantees admission to medical school. Figure 9.1 shows that a substantial number of applicants with total MCAT scores of 512 and above were not accepted. This finding reveals the importance of factors other than MCAT performance — including undergraduate academic performance and a variety of personal characteristics and experiences — in the medical student selection process.

Undergraduate Grade Point Average

Figure 9.2 presents information about the undergraduate academic performance of 2020-2021 applicants.



All applicants had cumulative total undergraduate GPAs ranging from under 1.0 to 4.0, and a majority were between 3.75 and 4.0. Accepted applicants' total undergraduate GPAs ranged from just under 2.14 to 4.00, and 77 accepted applicants had total undergraduate GPAs of 2.75 or below. The turning point where more applicants were accepted than rejected began with a GPA of 3.75.

As is the case with the MCAT data, the GPA data in Figure 9.2 show that no undergraduate GPA ensures admission to medical school. Although applicants with total GPAs in the range of 3.75 to 4.0 were more likely to be accepted to medical school, a significant number of such applicants were not accepted.

Again, these findings underscore the importance of other factors such as personal characteristics and life experiences in the medical student selection process.

MCAT Score

Table 9.1 combines MCAT scores and undergraduate GPAs for all 2018-2019 through 2020-2021 applicants to medical school who submitted scores from the new exam. Note that these results are presented without regard to any of the other selection factors. If the data don't reflect your particular circumstances, please go to aamc.org/data/facts to see acceptance rates for specific demographic groups.

Table 9.1. MCAT Total Scores and Total GPAs of Applicants and Acceptees, 2020-2021 (Aggregated)

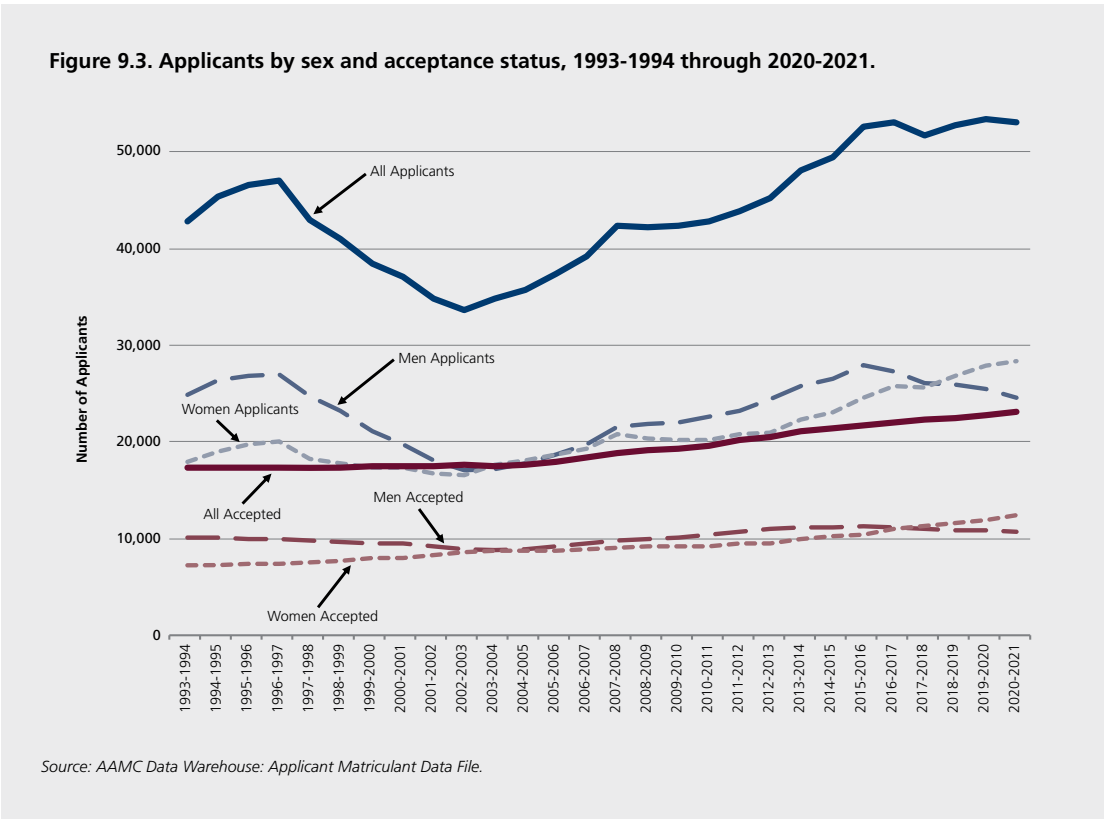
GPA Total	Acceptees (Accs), Applicants (Apps), and Percentage of Applicants Accepted	MCAT Total									
		472-485	486-489	490-493	494-497	498-501	502-505	506-509	510-513	514-517	518-528
3.80-4.00	3.80-4.01	3.80-4.02	3.80-4.03	3.80-4.04	3.80-4.05	3.80-4.06	3.80-4.07	3.80-4.08	3.80-4.09	3.80-4.10	7,871
	Applicants	151	302	713	1,603	3,357	5,687	8,663	9,885	8,873	9,087
	Accs/Apps	1.3	1.7	6.6	18.2	29.7	43.7	59.2	73.2	80.5	86.6
3.60-3.79	Acceptees	4	7	57	277	964	2,049	3,702	4,929	3,858	2,556
	Applicants	370	582	1,229	2,446	4,196	6,336	7,975	7,932	5,347	3,253
	Accs/Apps	1.1	1.2	4.6	11.3	23.0	32.3	46.4	62.1	72.2	78.6
3.40-3.59	Acceptees	5	12	48	259	727	1,291	2,047	2,427	1,695	957
	Applicants	592	785	1,502	2,584	4,004	5,045	5,686	4,905	2,776	1,374
	Accs/Apps	0.8	1.5	3.2	10.0	18.2	25.6	36.0	49.5	61.1	69.7
3.20-3.39	Acceptees	3	7	32	145	404	683	883	932	590	287
	Applicants	709	786	1,375	2,038	2,820	3,135	3,023	2,315	1,203	506
	Accs/Apps	0.4	0.9	2.3	7.1	14.3	21.8	29.2	40.3	49.0	56.7
3.00-3.19	Acceptees	4	4	18	82	220	340	397	363	197	121
	Applicants	803	705	948	1,370	1,595	1,641	1,530	1,084	455	223
	Accs/Apps	0.5	0.6	1.9	6.0	13.8	20.7	25.9	33.5	43.3	54.3
2.80-2.99	Acceptees	4	3	11	26	82	129	126	95	55	33
	Applicants	612	515	633	669	745	758	586	361	179	73
	Accs/Apps	0.7	0.6	1.7	3.9	11.0	17.0	21.5	26.3	30.7	45.2
2.60-2.79	Acceptees	0	5	3	16	40	43	43	30	22	3
	Applicants	456	307	349	344	378	282	203	128	59	16
	Accs/Apps	0.0	1.6	0.9	4.7	10.6	15.2	21.2	23.4	37.3	18.8
2.40-2.59	Acceptees	0	0	3	5	7	10	15	9	6	-
	Applicants	316	159	176	154	129	100	64	38	18	-
	Accs/Apps	0.0	0.0	1.7	3.2	5.4	10.0	23.4	23.7	33.3	-
2.20-2.39	Acceptees	0	0	0	2	5	4	5	3	-	-
	Applicants	197	78	81	61	43	36	31	22	-	-
	Accs/Apps	0.0	0.0	0.0	3.3	11.6	11.1	16.1	13.6	-	-
2.00-2.19	Acceptees	0	0	1	0	-	1	-	-	-	-
	Applicants	95	28	32	13	-	10	-	-	-	-
	Accs/Apps	0.0	0.0	3.1	0.0	-	10.0	-	-	-	-
1.41-1.99	Acceptees	0	-	0	-	-	-	-	-	-	-
	Applicants	48	-	10	-	-	-	-	-	-	-
	Accs/Apps	0.0	-	0.0	-	-	-	-	-	-	-

Note: Cells with dashes contain less than 10 observations, and blank cells contain no observations.

Source: AAMC Data Warehouse: Applicant Matriculant File.

Sex

Figure 9.3 presents information about the number and sex of all applicants and accepted applicants for entering classes from 1992-1993 to 2020-2021. In 2020-2021, the applicant pool decreased 0.6% from the previous year.



The number of men applicants to the 2020-2021 entering class decreased by 874 from the number of men applicants to the previous year's entering class. The number of women applicants to the 2020-2021 class increased by 496 from the previous year's number.

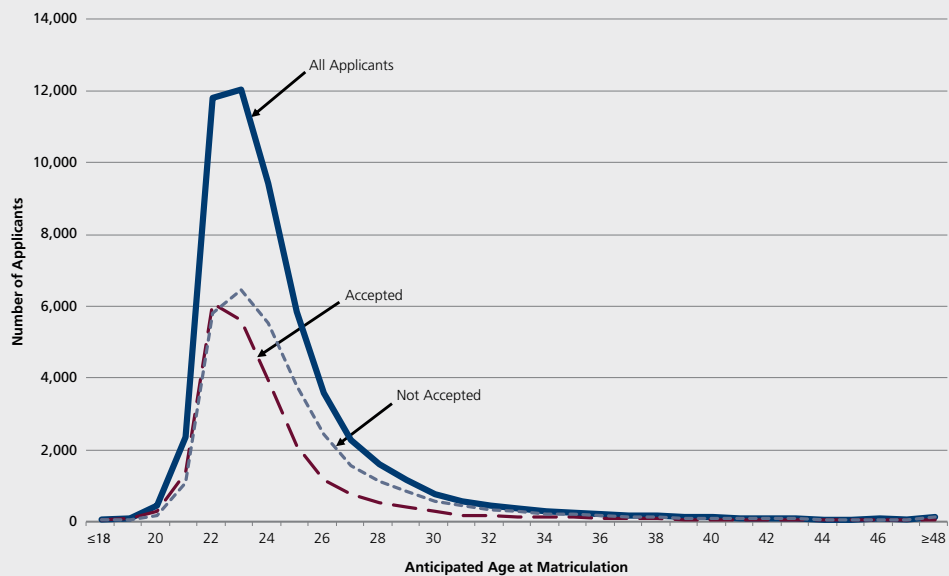
Although the number of accepted applicants remained fairly constant from 1992-1993 to 2002-2003, it started to increase in 2003-2004, from 17,542 that year to a high of 23,105 in 2020-2021. The number of accepted men applicants has fluctuated since 1992-1993, with a low of 8,810 in 2003-2004 and a high of 11,271 in 2015-2016. The number of accepted women applicants has increased, with small fluctuations, from a low of 7,255 in the 1994-1995 entering class to a high of 12,417 in 2020-2021. The gap between men and women applicants has gradually shifted. From 2005-2006 to 2017-2018, men applicants outnumbered the number of women applicants. Beginning in 2018-2019, women applicants have outnumbered men applicants. In 2020-2021, 3,723 more women than men applied to medical school. The gaps between accepted men and accepted women applicants has also shifted. Since 2017-2018, the accepted women applicants has outnumbered the men applicants. For the 2020-2021 entering class, 1,773 more women than men were accepted.

The national ratio of men to women applicants was 49.2-to-50.8 for the 2003-2004 entering class — the first time that the number of women applicants to medical school was greater than the number of men applicants. For the 2005-2006 entering class, there were once again more men applicants than women applicants, with a men-to-women ratio of 50.2-to-49.8. This trend continued until 2017-2018, when female applicants outnumbered males, with a male-to-female ratio of 49.5-to-50.4. This continued to be the case in 2020-2021 (46.4-to-53.4).

Age

Figure 9.4 shows that the age distribution for all applicants to the 2020-2021 entering class was broad. The number of applicants between 21 and 28 years of age at the time they were expected to matriculate totaled 48,242; the number of applicants under 21 was 394; and applicants over 28 numbered 4,394. Figure 9.4 shows a similar finding for accepted applicants to the 2020-2021 entering class; 23,105 accepted applicants were between 18 and 53 years of age at the time of expected matriculation.

Figure 9.4. Age distribution, 2020-2021 applicants.



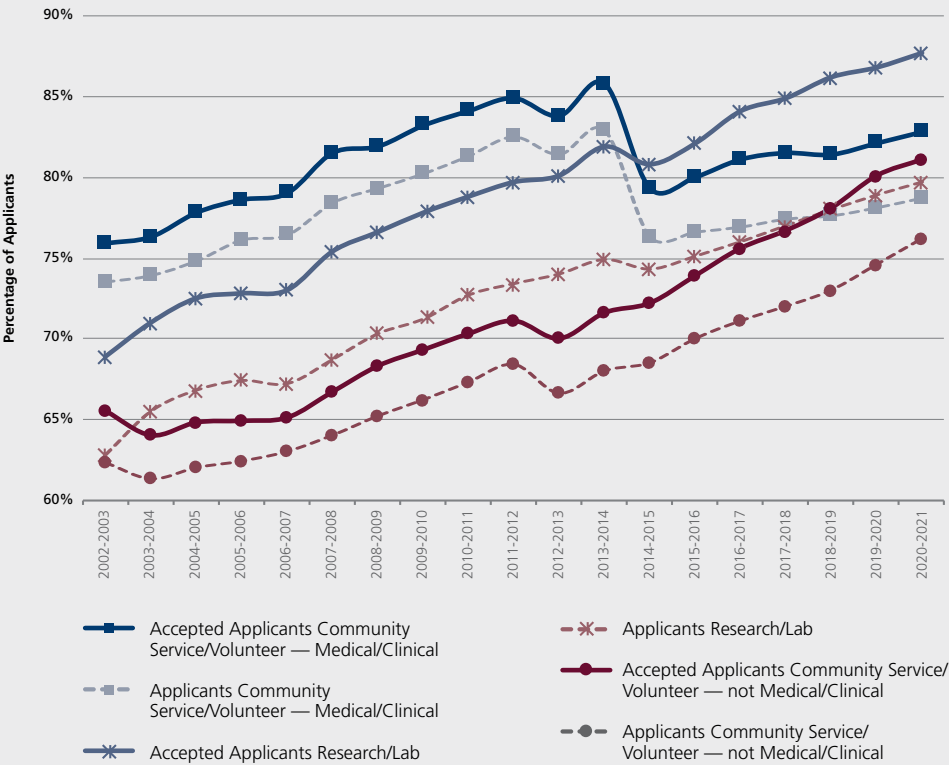
Source: AAMC Data Warehouse: Applicant Matriculant Data File.

Applicant and Accepted Applicant Experiences

Figure 9.5 summarizes the volunteer and research experiences of AMCAS applicants and accepted applicants to the 2020-2021 entering class. The figure shows a clear increase in the percentage of both applicants and accepted applicants reporting volunteer medical, community service, and research experience since 2002. For the 2020-2021 entering class:

- 83% of accepted applicants reported community service and/or volunteer medical or clinical experience, an increase of about 7% since 2002.
- 79% of applicants reported community service and/or volunteer medical or clinical experience, an increase of about 5% since 2002.
- 88% of accepted applicants reported research and/or lab experience, an increase of about 19% since 2002.
- 80% of applicants reported research and/or lab experience, an increase of about 17% since 2002.
- 81% of accepted applicants reported nonmedical or nonclinical community service and/or volunteer experience, an increase of about 16% since 2002.
- 76% of applicants reported nonmedical or nonclinical community service and/or volunteer experience, an increase of about 14% since 2002.

Figure 9.5. Percentage of AMCAS applicants and accepted applicants reporting selected experiences, 2002-2003 through 2020-2021.

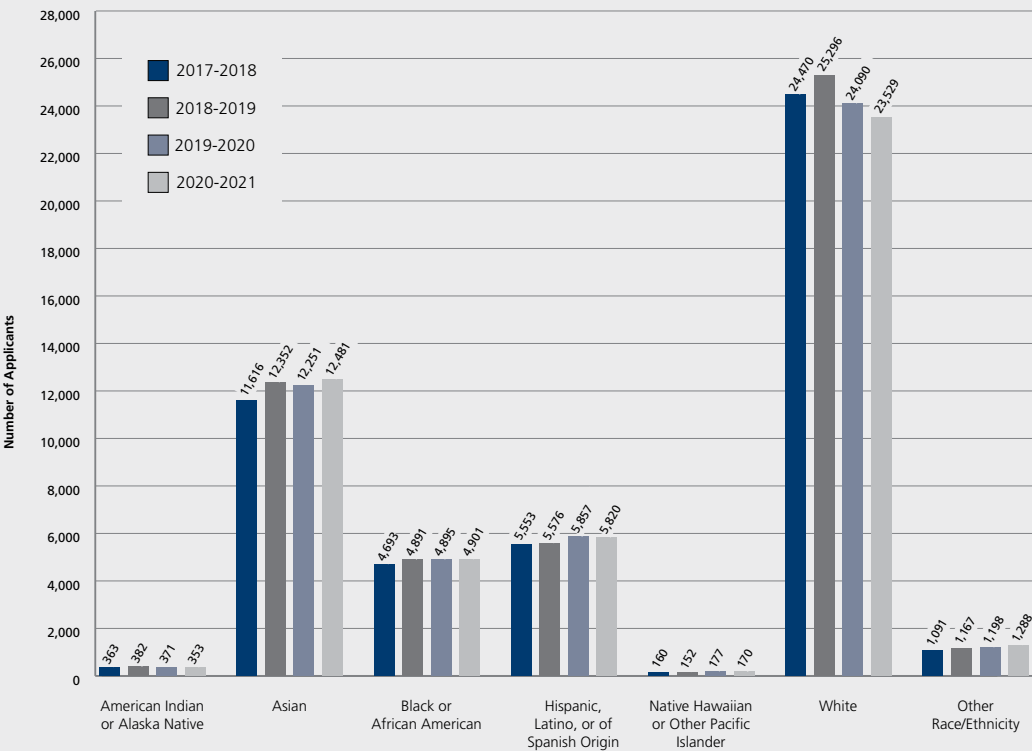


Source: AAMC Data Warehouse: Applicant Matriculant Data File.

Racial/Ethnic Self-Identity

Figure 9.6 shows self-reported race and ethnicity data for applicants to the 2017-2018 entering class through the 2020-2021 entering class. Applicants can select multiple races and ethnicities, so the sum of those shown does not equal the total number of applicants. Also, we could not include applicants for whom we have no race and ethnicity data. Additional information for applicants from groups underrepresented in medicine is available in Chapter 4.

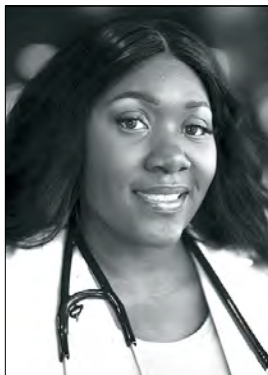
Figure 9.6. Distribution of self-identity: all applicants, 2017-2018 through 2020-2021.*



*Self-identities are reported for U.S. citizens or permanent residents only and may be alone or in combination with some other self-identity.

Source: AAMC Data Warehouse: Applicant Matriculant Data File.

You Can Afford Medical School



Sotonye Douglas, MS

Frank H. Netter MD School of Medicine at Quinnipiac University
Class of 2023

“So, you’re interested in becoming a doctor, but you don’t know what that means financially. Having gone through this process, I want to share some helpful tips and important things to consider.

First, create a timeline. Ask yourself, when do I want to apply? When your timeline for applying is set, you can begin to prepare for the opening of application season. Of course, this includes asking for letters of evaluation and essays, but people sometimes forget about finance — the costs associated with applying, interviewing, and ultimately, attending medical school.

After you submit your primary application, you’ll likely receive secondary applications. And hopefully, after your secondary applications are in, you will begin to receive invitations to interview. Keep in mind the following:

- What are the locations of the schools you’re interested in and estimated transportation costs (flights, gas, tolls)?
- Where will you stay for your interview? Can you stay with a friend or relative, or will you need to stay in a hotel?
- Will you need to rent a car or arrange a ride from the hotel to campus?
- What is the proximity of the schools to one another? Will it be possible to schedule interviews close together?
- Do you have something appropriate to wear for the interview?

After receiving an acceptance, speak to the financial aid office about grants and loans, and research scholarships or loan repayment programs. (The AAMC has a free database on loan repayment and forgiveness programs.) Keep in mind, once you commit to your medical school, you’ll need to budget for:

- Medical school deposit.
- Onboarding costs.
- Apartment/living expenses.
- Transportation.
- White coat ceremony.

Overall, applying to and attending medical school will be expensive. But being aware of potential costs and working closely with financial aid officers at your medical school will help you plan effectively.”

Building a Strong Financial Plan

You'll need to develop a strategy to cover the costs associated with your education. Don't let the numbers discourage you. There's help available.

When you look at the figures in Table 10.1, the financial challenges may seem overwhelming. Annual tuition, fees, and health insurance for the first year at state medical schools in 2020-2021 averaged about \$41,438 for residents and \$58,246 for nonresidents; at private schools, the average was \$61,490 for residents and \$57,619 for nonresidents.

According to recent surveys conducted by the AAMC, 73% of newly graduated MDs have medical school education debt, and 62.7% reported receiving some degree of help through scholarships, stipends, and grants (which you don't have to repay). So it can be done, and it is... by tens of thousands of medical students every single year. But first, you need a plan.

Before you actually borrow money, it's important to understand — and adhere to — the basic principles of successful money management. With that in mind, the three basic recommendations that follow should help you build a strong financial foundation.

1. Live Within Your Means

If you don't have a plan of action for your finances, all other efforts to afford medical school and handle your monies wisely will be undermined. Having a spending plan is the cornerstone of a solid financial foundation. Let's face it: Money will be tight during medical school, and a realistic spending plan will be critical to your financial well-being. A well-crafted plan will help you maintain better control of your spending, ensure you cover your essential expenses, and prepare you for unexpected expenses by building an emergency fund.

Creating a budget involves only a few steps:

- Income — Document incoming funds, which will likely be in the form of financial aid (loans, scholarships, or grants).
- Expenses — Identify outgoing expenses, like rent, food, and tuition.
- Discretionary income — Calculate your discretionary income to see if your spending plan allows you to live within your means.
- For assistance in creating a realistic budget, contact the financial aid office of the medical school you're interested in attending. Often, they can provide some approximations of the average amount of student loan monies available to live on and the expected costs of necessities while attending medical school.

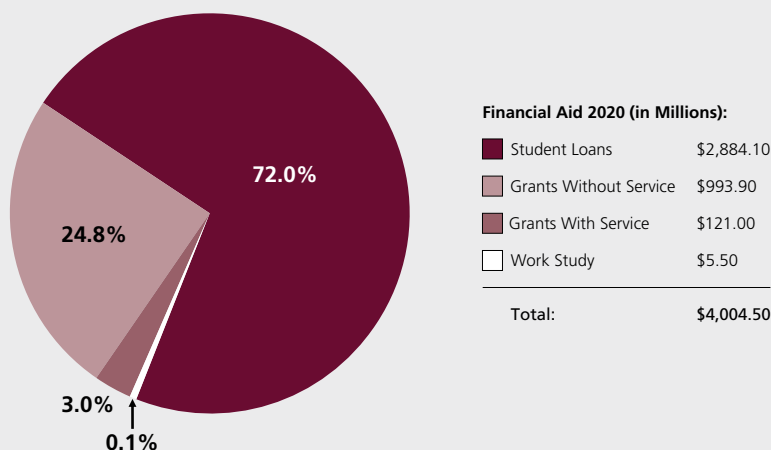
Table 10.1. Tuition, Fees, and Health Insurance for 2020-2021 First-Year Students in U.S. Medical Schools (in Dollars)

Private Schools	
Student Category	Average Cost
Resident	\$61,490
Nonresident	\$57,619
Public Schools	
Student Category	Average Cost
Resident	\$41,438
Nonresident	\$58,246

Source: 2020-2021 AAMC Tuition and Student Fees Questionnaire.

Your Total Income — Your Total Expenses = Your Discretionary Income

Figure 10.1. Distribution of financial aid among medical students.



Note: Includes data from the 143 fully accredited medical education programs reporting financial aid information in 2020. Percentages may not sum to 100 due to rounding.

Source: 2019-2020 LCME Student Financial Aid Questionnaire Part I-B.

2. Manage Your Debt Wisely

- Given the costs of medical school, it's understandable that the vast majority of medical students borrow money to fund their education. The median medical education debt for the class of 2020 was \$200,000. The ability to manage debt wisely is important, regardless of one's situation, and it becomes even more critical for you — a prospective medical student — when you consider the degree to which you're likely to rely on loans to help pay for your education.
- Be conscious of the amount you're likely to borrow, and be comfortable knowing that your future income will allow you to repay your student loan debt.
- Educate yourself about various financing possibilities before you arrive at medical school, and diligently search for free money, such as scholarships, grants, and repayment assistance programs.
- Understand your responsibilities — beyond making payments — that come with borrowing student loans. These include knowing what loans you borrowed, where to send payments, and when payments are due. You'll also be responsible for notifying your servicers of any changes to your name, contact information, or enrollment status.
- Stay organized. Maintain accurate financial aid records, copies of application forms, and any related paperwork. This also means opening and reading all mail pertaining to your student loan debt. The MedLoans® Organizer and Calculator is a tool to help you keep your loans organized. Every accepted medical school student is given access to this free tool, found at aamc.org/medloans.
- There are numerous resources to help you manage your debt, including information on building a good credit score by meeting your financial obligations. In doing so, you'll strengthen your ability to qualify for and obtain better interest rates for credit-based loans, land a job, and rent an apartment. For more information, go to aamc.org/first/creditscore.

- There's an abundance of resources to help you through this process — including those provided by your prehealth advisor, the pages that follow in this book, and the AAMC's FIRST program. FIRST provides resources to help medical school applicants and students make smart decisions about student loans, effectively manage their education debt, and expand their financial skills. The AAMC also provides financial management assistance through a free financial literacy program called Financial Wellness. This program provides practical information on budgeting, credit, debt management, and more. Sign up for your free account at aamc.org/financialwellness.
- The financial aid package offered by each medical school may be a significant factor when you're deciding which offer to accept. For information on this and other considerations, refer to Chapter 6, "Choosing the Schools That Are Right for You."

3. Maintain Good Credit

- As part of the financial aid application, some medical schools may evaluate an applicant's credit history. If an applicant has credit issues, some medical schools may delay an applicant's matriculation. Applicants in this situation are advised to contact the medical school's financial aid staff to discuss options and next steps.

Tips to Help Your Credit Score

- Pay your bills on time.
- Limit your credit accounts.
- Keep balances below your credit limit.
- Pay down or eliminate debt whenever possible.
- Stay current on all outstanding credit obligations.
- Check your credit report regularly at annualcreditreport.com.

Types of Financial Aid

How Will You Pay for Medical School?

First, remember that you're not alone. While the ultimate financial responsibility for your medical education rests with you and your family, there are many resources and tools to help you. The financial aid officer at your medical school will assist you, but you'll also want to talk to your prehealth advisor and familiarize yourself with the Financial Aid Fact Sheets from the AAMC's FIRST program (aamc.org/first).

Examples of additional financial resources from FIRST include the Debt, Costs, and Loan Repayment Fact Card (Figure 10.2) and information on student loans (Table 10.2).

Loans

It's likely that your primary financial funding for medical school will come from federal student loans — a form of financial aid. Federal loans are normally the first type of loan offered, and you should evaluate them before considering a private loan. Table 10.2 provides specific information about four of the most common federal loans used by medical students:

- Direct Unsubsidized Loans
- Direct PLUS Loans
- Loans for Disadvantaged Students
- Primary Care Loans

Medical school is expensive. However, strong job security and excellent income potential should enable any medical school graduate, practicing in any specialty, to repay education debt and provide for a secure living and retirement.

Figure 10.2. Medical student education: debt, costs, and loan repayment fact card.

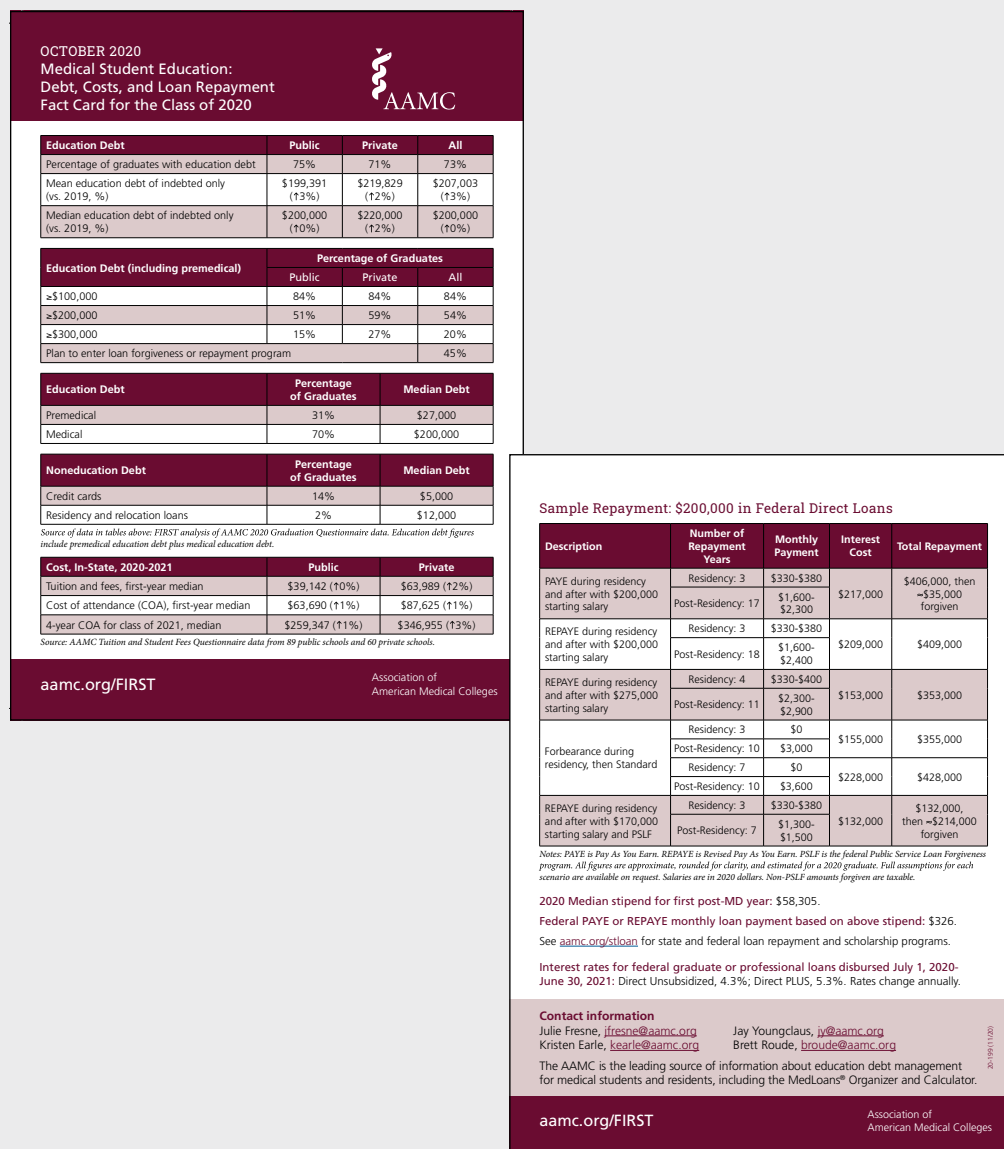


Table 10.2. Federal Student Loans for Medical Students

Characteristics	Direct Unsubsidized Loan	Direct PLUS Loan	Loans for Disadvantaged Students	Primary Care Loan
Lender	The federal government	The federal government	Medical school financial aid office on behalf of the Department of Health and Human Services	Medical school financial aid office on behalf of the Department of Health and Human Services
Based on Need	No	No	Yes ¹	Yes ²
Citizenship Requirement	U.S. citizen, U.S. national, or U.S. permanent resident	U.S. citizen, U.S. national, or U.S. permanent resident	U.S. citizen, U.S. national, or U.S. permanent resident	U.S. citizen, U.S. national, or U.S. permanent resident
Borrowing Limits	Aggregate limit is \$224,000; yearly loan limit is based on eligibility and cost of attendance	Annual cost of attendance minus other financial aid	Up to cost of attendance (third- and fourth-year students may receive additional funds to repay previous educational loans received while attending medical school) ³	Up to cost of attendance (third- and fourth-year students may receive additional funds to repay previous educational loans received while attending medical school) ³
Interest Rate	For loans disbursed after July 1, 2013, the rate is fixed for the life of the loan. These fixed rates are calculated every July 1 and are effective for loans disbursed during the next academic year. For current rates, visit studentaid.gov/understand-aid/types/loans/interest-rates	For loans disbursed after July 1, 2013, the rate is fixed for the life of the loan. These fixed rates are calculated every July 1 and are effective for loans disbursed during the next academic year. For current rates, visit studentaid.gov/understand-aid/types/loans/interest-rates	5%	5%
Interest Subsidy	No	No	While in school, deferment, and grace period	While in school, deferment, and grace period
Grace Period	6 months	None	1 year	1 year
Deferments	While in school and other possible deferment periods based on eligibility (check your promissory note or ask your financial aid officer)	While in school and 6 months after separating from school (post-enrollment deferment)	While in school and during approved eligible activities	While in school and during a primary care residency (check your promissory note or ask your financial aid officer)
Repayment Requirements	Repayment plans and postponement options exist during residency and beyond	Repayment plans and postponement options exist during residency and beyond	10 to 25 years to repay, at the discretion of the institution; may be eligible for federal loan consolidation	10 to 25 years to repay; not eligible for loan consolidation
Prepayment Penalties	None			
Allowable Cancellations	Death or total and permanent disability			

1. Parent financial information is required for consideration for dependent students.

2. Borrower must agree upon signing loan agreement to enter and complete a primary care residency and practice in a primary care field, which together must be a total of 10 years in length or until the loan is repaid in full, whichever occurs first. Parent financial information is required for consideration for dependent students.

3. Both annual and aggregate maximums are subject to change, pending congressional action.

Grants and Scholarships

When it comes to financing your medical education, the best money is free money, often referred to as “gift aid,” which you don’t have to repay. If you are offered grants and/or scholarships, they will likely only cover a portion of your overall educational costs. The source of gift aid can be the federal government, the state government, other outside resources, and/or your medical school. Your medical school financial aid officer is the best source of information about which grants and scholarships may be available to you.

The Financial Aid Application Process

The financial aid process may vary slightly by institution, so you’ll want to discuss each school’s requirements with the financial aid officer. Generally, most schools require that you’re a U.S. citizen or permanent resident, you’re making satisfactory academic progress, and you’re in compliance with Selective Service registration requirements.

Regardless of the medical school, there’s a standard process for applying for federal financial aid.

Step 1. Fill Out the FAFSA

Completing the Free Application for Federal Student Aid (FAFSA) is the first step toward getting federal aid for medical school. Completing the FAFSA online is easy and free. The schools listed on your FAFSA will receive your financial information and determine your eligibility for aid. Some schools may require parental information; check with the medical school’s financial aid staff for specific requirements.

Step 2. Investigate Other Sources of Aid

Contact the medical school’s financial aid staff (or consult their website) to investigate all available financial aid resources.

Step 3. Receive and Reply to the Award Notification

Once your FAFSA and other required forms are received and processed by a medical school’s financial aid office, you’ll receive a financial aid award notification indicating the types and amounts of financial aid you qualify for — along with directions for accepting or declining the aid. Be sure to follow the instructions to receive your financial aid in a timely manner. For more information on aid offers, review the What’s An Aid Offer? Fact Sheet: students-residents.aamc.org/financial-aid/article/what-is-an-aid-offer.

The financial aid office at each school is guided by various principles, regulations, and other factors when offering aid. The aid offer is determined by eligibility for federal aid, available institutional resources, family resources, and the institution’s mission. The school uses the cost of attendance and other factors to make a final determination of aid eligibility. For eligibility and additional details, talk with the financial aid officer at the medical school you plan to attend. If you’re not sure what to ask, review the Top 10 Questions Premeds Should Ask Medical School Financial Aid Officers at students-residents.aamc.org/financial-aid-resources/top-10-questions-premeds-should-ask-medical-school-financial-aid-officers.

How Medical Schools Determine Eligibility for Financial Aid

Medical schools are sensitive to the financial needs of students. Guided by federal regulations, the financial aid officer will determine your aid eligibility by examining the following questions.

How Much Does It Cost?

The cost of medical education includes tuition, fees, books, supplies, equipment, and living expenses. These components make up the school's cost of attendance (COA) and vary by school. You can find out the tuition and fees and COA of each medical school on the [MSAR website](#).

What Are Your Resources?

The next area calculated is the amount you'll be required to pay toward the cost of the education. This amount, called the expected family contribution (EFC), is determined through a need-analysis formula to ensure all students are treated equitably. Both income and assets are considered.

Even though you're considered independent for purposes of federal loans, many institutions require parental financial information to determine eligibility for institutional grants, scholarships, and school-based loans. School officials use this information to assess the student's ability to pay rather than willingness to pay, helping ensure that certain types of aid are awarded to students with the greatest need.

What Additional Resources Are Needed?

Finally, the financial aid office will subtract your EFC from the institution's total cost of attendance. The remainder determines how much aid you'll need for the upcoming academic year. At this point, the medical school will send you an aid offer detailing the amount and type of financial aid available to you.

You'll be asked to accept or decline the offer (or a portion of it). The amount of financial aid an institution offers may be an important factor in choosing which school to attend. Review Chapter 6 for additional information and guidance on making your selection. To further help you analyze your financial aid offer, all accepted applicants are given complimentary access to the MedLoans Organizer and Calculator at aamc.org/medloans. This tool can be used to estimate the total cost associated with borrowing loans for medical school.

Forgiveness and Repayment Assistance Programs

Loan forgiveness and repayment programs are available for students interested in reducing their education loan debt through service. These are great options if your career goals align with those of the particular repayment or forgiveness program. The programs vary in structure, requirements, and award amounts.

The federal government provides both service commitment and loan repayment benefits to medical students interested in pursuing careers in primary care and to those committed to working in medically underserved areas.

Additionally, the federal government has a loan forgiveness program to reward borrowers who choose to work in public service, and borrowers can also take advantage of repayment plans offering loan forgiveness.

The U.S. Armed Forces have programs that offer support to students enrolled in civilian medical schools in exchange for service in the military branch that provided the funding.

Some state programs are available to students and graduates in return for a commitment to serve in the state's areas of need. Review the Loan Repayment/Forgiveness and Scholarship Programs database at aamc.org/stloan.

Federal Loans and Repayment

The benefits of federal student loan programs include:

- **Peace of mind.** Payments are not required until after medical school is over. Payments can even be postponed throughout residency if a borrower doesn't want to make payments during that time.
- **Fixed interest rates.** Rates will not rise (once the loan has been disbursed), and interest rate reductions may even be available if borrowers elect automatic electronic payment and/or make their payments on time.
- **Various repayment plans.** Flexible plans are available to make payments affordable — even during residency.
- **Education tax credits or deductions.** Some borrowers may be eligible for tax benefits; consult Publication 970 from the IRS for more information (irs.gov/forms-pubs/about-publication-970).

As you near graduation, your financial aid office and your loan servicer(s) will supply the details you need to successfully manage your debt after graduation.

For additional details on service commitment and loan forgiveness, please review the Repayment Assistance Through Forgiveness, Scholarships, or Service Fact Sheet at aamc.org/repayasst.

A Final Word About Financing Your Medical Education

The AAMC has a variety of financial information, resources, services, and tools for students and residents interested in learning about debt management. For help with accomplishing your financial goals and understanding your options for paying for medical school, review FIRST's Financial Aid Fact Sheets, watch a video, or sign up to participate in a live webinar at aamc.org/first.



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 10.1

Monthly Budget Worksheet

Budget Worksheet for Students

Monthly Income:

Financial aid _____
Investment income _____
Gifts _____
Other _____
Total Monthly Income _____

Monthly Fixed Expenses:

Tuition and fees _____
Books and supplies _____
Savings _____
Rent/mortgage _____
Phone _____
Taxes (federal, state) _____
Vehicle payments _____
Other transportation _____
Personal loans _____
Education loans _____
Insurance (life and health) _____
Home/renter insurance _____
Auto insurance _____
Auto registration/taxes _____
Other _____
Total Fixed Expenses _____

Monthly Variable Expenses:

Food/household supplies _____
Dining out _____
Clothes _____
Laundry/dry cleaning _____
Gas, oil, auto maintenance _____
Parking _____
Medical/dental/eye care _____
Entertainment _____
Travel/vacation _____
Utilities _____
Music/books/journals _____
Personal care _____
Subscriptions _____
Cable TV and internet _____
Credit card payments _____
Charity/contributions/gifts _____
Savings for interviews/relocation _____
Test prep course/materials _____
Exam/licensing fees _____
Other _____

Total Variable Expenses _____

Plus Total Fixed Expenses _____

Equals Total Monthly Expenses _____

Total Income _____

Less Total Expenses _____

**Equals Total Discretionary
Income (or Deficit)** _____

Baccalaureate-MD Programs



Trisha Kaundinya

MD-MPH Candidate, Honors Program in Medical Education

Northwestern University Feinberg School of Medicine

Class of 2024

BS, BA, Northwestern University

Class of 2020

“While I was still in high school, I became a global impact fellow for Unite for Sight, a nonprofit program focused on providing care for over 2.9 million patients living in poverty, including providing more than 109,000 sight-restoring surgeries, and I became a certified EMT. These experiences helped to me confirm that medicine was the right profession for me. I knew I could either

attend a university with a premed track and then apply to medical school after, or I could pursue a combined undergraduate-MD program. As a high school senior, I applied to both undergraduate universities and combined degree programs.

What I liked about the Honors Program in Medical Education at Northwestern University Feinberg School of Medicine was that it is very flexible during the undergraduate years. This flexibility allowed me to pursue liberal arts coursework, work several jobs, go abroad, and break out of the traditional premed résumé. I also appreciated how students in the program were integrated into both the undergraduate college and medical school.

I think that, in general, direct admission programs for undergrad and medical school can have several advantages — they save you money, save you time, may not require MCAT scores, and have more flexible requirements to matriculate at medical school than a typical applicant. Each program is unique, with differing requirements, length, and policies, so it is critical to understand their differences when you do your research.

Baccalaureate-MD programs tend to be small, and admission is very competitive. Even if you apply or are accepted to a program, you may not decide to attend, and that’s okay. There are many paths to medical school. None of them are wrong. As a second year MD-MPH candidate at the Feinberg School of Medicine, I am grateful I was able to choose this path for my journey to a career in medicine.”

Purposes of Baccalaureate-MD Programs

The purposes of these programs vary by institution and may include to:

- Permit highly qualified students to plan and complete a broad liberal arts education before starting their medical studies.
- Admit highly qualified students with the desired combination of experiences, attributes, and metrics who have demonstrated an early commitment to medicine and whose goals align with the mission of the medical school.
- Enhance diversity in the premedical and medical education environments.

- Reduce the total number of years required to complete the MD degree.
- Educate physicians likely to practice in particular geographic areas or work with medically underserved populations.
- Reduce the costs of a medical education.
- Prepare physician-scientists and future leaders in health policy.

As a potential applicant, familiarize yourself with the mission, statement of goals, and requirements of each combined-degree program you are interested in to ensure an appropriate match between your educational and professional goals and those of the program. This information can usually be found on the medical school's website.

These programs typically represent relationships between a medical school and one or more undergraduate colleges located in the same geographic region. They can be a part of the same university system or span different institutions. Learning about the schools involved in a baccalaureate-MD program can help you better understand the program's mission and features.

Admission is open to highly qualified, mature students at the high school or early college level who are committed to a future career in medicine. Admitted students tend to have a set of life experiences that signal their maturity and commitment. For more information, refer to the [MSAR website](#), specifically the About section for baccalaureate-MD programs. State-supported schools generally admit few out-of-state applicants to their baccalaureate-MD programs; private schools tend to have greater flexibility about state of residency.

While academic requirements vary among the schools sponsoring these programs, they typically include successful completion of prerequisite courses in biology, chemistry, physics, English, mathematics, and social science courses as well as a minimum grade point average and standardized test scores. Calculus and foreign-language courses are also frequently required; a computer science course is sometimes recommended. Admission to the MD portion of the program may occur immediately or after a student completes a prescribed number of semesters with a minimum GPA. In some programs, students are not required to take the MCAT exam; in other programs, a minimum MCAT score must be attained to progress through the program.

Progressing through the program from the undergraduate to the medical curricula is usually contingent on a student achieving specific criteria in terms of standardized test scores, GPA, and meeting the school's expectations for personal and professional behavior.

If you're interested in a combined baccalaureate-MD program, consult your school counselor to ensure you're enrolled in a curriculum that incorporates the courses required for admission to the program and readies you for the premedical phase of this pathway. The requirements may involve specific high school or college courses. If you're a college freshman or sophomore interested in these programs, speak with your school's prehealth advisor. For additional information about specific programs, contact each program directly.

This chapter contains lists of combined baccalaureate-MD programs by state and by number of years to complete them. For information about the programs, refer to the [MSAR website](#).

How to Find and Prepare for Baccalaureate-MD Programs

Baccalaureate-MD programs can be a great option for high school seniors considering careers in medicine. If you're a high school student, talk with your school counselor about programs that may be good options for you. You can use the [MSAR website](#) to search for medical schools with baccalaureate-MD programs. Also, explore opportunities at your school or in your community to get engaged in health care issues and shadow health care professionals. These experiences will help you understand how you fit within a career in medicine and perhaps even the kind of medical setting that suits your interests, aptitudes, goals, and personality.

Each year, new programs are being developed, and many are aimed toward creating an option for students who are traditionally unrepresented in medicine. In Chapter 4, you can read more about diversity initiatives in medicine; in Chapter 7, you can find more information about the holistic review of candidates who apply to medical school. With this in mind, you can use the worksheet at the end of this chapter to evaluate the mission statements of the programs you are interested in and decide which ones may be a good fit for you.

Medical Schools Offering Combined Baccalaureate-MD Programs, by State, 2021-2022

ALABAMA

University of Alabama at Birmingham
Marnix E. Heersink School of Medicine

COLORADO

University of Colorado School of Medicine

CONNECTICUT

University of Connecticut School of Medicine

DISTRICT OF COLUMBIA

The George Washington University School of Medicine
and Health Sciences
Howard University College of Medicine

FLORIDA

Florida Atlantic University Charles E. Schmidt
College of Medicine
University of Central Florida College of Medicine
University of Florida College of Medicine
University of Miami Leonard M. Miller
School of Medicine
University of South Florida Morsani
College of Medicine

GEORGIA

Medical College of Georgia at Augusta University

ILLINOIS

Northwestern University Feinberg
School of Medicine (suspended in 2021)
University of Chicago Pritzker School of Medicine
University of Illinois College of Medicine

MASSACHUSETTS

Boston University School of Medicine

MICHIGAN

Wayne State University School of Medicine

MINNESOTA

University of Minnesota Medical School

MISSOURI

Saint Louis University School of Medicine
University of Missouri - Kansas City School of Medicine

NEVADA

University of Nevada, Reno, School of Medicine

NEW JERSEY

Cooper Medical School of Rowan University
Rutgers New Jersey Medical School
Rutgers Robert Wood Johnson Medical School

NEW MEXICO

University of New Mexico School of Medicine

NEW YORK

Albany Medical College
CUNY School of Medicine
Donald and Barbara Zucker School of Medicine
at Hofstra/Northwell
Renaissance School of Medicine
at Stony Brook University
State University of New York Downstate Medical
Center College of Medicine
State University of New York Upstate Medical
University College of Medicine
University of Rochester School of Medicine
and Dentistry

OHIO

Case Western Reserve University School of Medicine
The University of Toledo College of Medicine
and Life Sciences
University of Cincinnati College of Medicine
(suspended in 2021)

PENNSYLVANIA

Drexel University College of Medicine
Lewis Katz School of Medicine at Temple University
Sidney Kimmel Medical College
at Thomas Jefferson University
University of Pittsburgh School of Medicine

PUERTO RICO

Ponce Health Sciences University School of Medicine

RHODE ISLAND

Warren Alpert Medical School of Brown University

SOUTH CAROLINA

University of South Carolina School
of Medicine - Columbia

TENNESSEE

Meharry Medical College

TEXAS

Baylor College of Medicine
University of Texas Rio Grande Valley
School of Medicine

VIRGINIA

Virginia Commonwealth University
School of Medicine

WEST VIRGINIA

Marshall University Joan C. Edwards
School of Medicine

Medical Schools Offering Combined Baccalaureate-MD Programs, by Number of Years, 2021-2022

6 YEARS

Donald and Barbara Zucker School of Medicine
at Hofstra/Northwell
University of Missouri - Kansas City School of Medicine

6-7 YEARS

Sidney Kimmel Medical College
at Thomas Jefferson University
University of Miami Leonard M. Miller
School of Medicine

7 YEARS

Albany Medical College (8-year option available)
Boston University School of Medicine
(8-year option available)
Cooper Medical School of Rowan University
CUNY School of Medicine
The George Washington University School of Medicine
and Health Sciences (8-year option available)
Medical College of Georgia at Augusta University
Meharry Medical College
Northwestern University Feinberg School of Medicine
(suspended in 2021)
Rutgers New Jersey Medical School
Rutgers Robert Wood Johnson Medical School
The University of Toledo College of Medicine and
Life Sciences (8- and 9-year options available)

University of Florida College of Medicine
University of Illinois College of Medicine
University of Minnesota Medical School
University of Nevada, Reno, School of Medicine
University of South Carolina
School of Medicine - Columbia
University of South Florida Morsani
College of Medicine

8 YEARS

Albany Medical College
Baylor College of Medicine
Case Western Reserve University School of Medicine
Drexel University College of Medicine
Florida Atlantic University Charles E. Schmidt
College of Medicine
The George Washington University School
of Medicine and Health Sciences
Howard University College of Medicine
Rutgers Robert Wood Johnson Medical School
Saint Louis University School of Medicine
State University of New York Upstate
Medical University College of Medicine
Renaissance School of Medicine
at Stony Brook University
University of Alabama at Birmingham
Marnix E. Heersink School of Medicine

University of Cincinnati College of Medicine
(suspended in 2021)

University of Colorado School of Medicine

University of Connecticut School of Medicine

University of New Mexico School of Medicine

University of Pittsburgh School of Medicine

University of Rochester School of Medicine
and Dentistry

Virginia Commonwealth University
School of Medicine

Warren Alpert Medical School of Brown University

Wayne State University School of Medicine

9 YEARS

University of Cincinnati College of Medicine
(suspended in 2021)



Worksheets at the ends of chapters in this guide are available
in fillable PDF format at [aamc.org/msar-resources](https://www.aamc.org/msar-resources).

Worksheet 11.1

Baccalaureate-MD Programs to Consider Applying To

1. **Name of Baccalaureate-MD Program** _____

What is the mission of this program? _____

Why are you interested in this program? _____

No. of Years: _____ Accepts out-of-state? _____ Application deadline: _____

When eligible to apply: ☐ College freshman ☐ High school senior ☐ Other _____

2. **Name of Baccalaureate-MD Program** _____

What is the mission of this program? _____

Why are you interested in this program? _____

No. of Years: _____ Accepts out-of-state? _____ Application deadline: _____

When eligible to apply: ☐ College freshman ☐ High school senior ☐ Other _____

3. **Name of Baccalaureate-MD Program** _____

What is the mission of this program? _____

Why are you interested in this program? _____

No. of Years: _____ Accepts out-of-state? _____ Application deadline: _____

When eligible to apply: ☐ College freshman ☐ High school senior ☐ Other _____

4. **Name of Baccalaureate-MD Program** _____

What is the mission of this program? _____

Why are you interested in this program? _____

No. of Years: _____ Accepts out-of-state? _____ Application deadline: _____

When eligible to apply: ☐ College freshman ☐ High school senior ☐ Other _____

MD-PhD Programs



Emily Hayward

MD-PhD Candidate, Medical Scientist Training Program
University of Alabama at Birmingham
Marnix E. Heersink School of Medicine
Class of 2024

"I grew up dreaming of becoming a physician — using my strengths and expertise to care for others. During my freshman year of college, I learned about MD-PhD programs for the first time. I was thrilled that there was a pathway for students who wanted to translate clinical observations into basic research to improve treatments and outcomes for those in need.

I immediately began to explore each aspect of a potential career as a physician-scientist. When I entered the research lab for the first time, I learned about the mechanisms of disease and how I could investigate important scientific questions. Clinically, I spent as much time as possible with everyone involved in health care, from shadowing providers to volunteering with patients who were kind enough to share their stories. I am forever grateful for each of these individuals who helped me recognize and achieve my dream to pursue the dual degree.

For those highly interested in becoming a physician-scientist, MD-PhD programs present a valuable and unique training opportunity. Students receive intensive training in both medicine and the research underlying and advancing it, often in a simultaneous and intertwined manner.

I encourage those applying to MD-PhD programs to seek an environment in which they can envision being the happiest, healthiest version of themselves. For me, this meant primarily applying to programs with hands-on mentorship and nationally recognized cancer centers, located in an area with a low cost of living that would allow me to rent or buy a small home that could serve as my safe, quiet haven for the next eight or so years. For some of my fellow applicants, on the other hand, seeking health and happiness meant fulfilling dreams of living in a big city, perhaps sharing a living space with several close friends while having the freedom to explore a unique major city and navigate their own way through their degrees. MD-PhD training is lengthy and often challenging. Ultimately, identifying a program and a team of mentors who will support you each step of the way can make all the difference."

The Education of a Physician-Scientist in a Combined MD-PhD Program

According to the AAMC's Student Records System, about 89.8% of 2019-2020 graduates earned an MD-only degree, about 2.7% earned a joint bachelor's-MD degree, and 3.0% earned a joint MD-PhD degree.

Physician-scientists — those trained in both medicine and research — are greatly needed in today's world. A synergy results when experimental thinking and clinical practice are joined, and that combination is found among those who have completed both MD and PhD programs. These individuals help translate the achievements of basic research into active clinical practice and, in doing so, strengthen the link between medical knowledge and research as they study, prevent, diagnose, and treat disease. If this is the path you prefer, you'll enjoy a busy, challenging, and rewarding career.

Advantages of the MD-PhD Dual Degree

One route to a career as a physician-scientist is enrollment in a combined MD-PhD program. Although you can complete a PhD program before or after receiving your MD degree, there are several advantages to pursuing joint MD-PhD education:

- The greatest advantage of the dual-degree program is the integration of research and clinical training. This integrated approach may include training opportunities across departments and interactions with teams of both basic scientists and clinical investigators.
- You can save a significant amount of time. Most MD-PhD programs can be completed in seven or eight years, compared with the nine or more years it would take to earn both degrees independently.
- Students in MD-PhD programs have access to opportunities for research and faculty mentoring to an extent frequently unavailable to MD-only students. As a result, these students are often able to enhance their mastery of the basic science needed to identify patients' underlying clinical problems and, ultimately, use that information to develop improvements in diagnosis and treatment. To learn more about available programs and how to apply, go to aamc.org/mdphd.

Professional School Fair — MD-PhD: Is It Right for Me?

In this videocast, leaders of medical school MD-PhD programs describe undergraduate preparation and application processes and discuss training in MD-PhD programs and postgraduate career opportunities: videocast.nih.gov/summary.asp?Live=11386

Paths to a Research Career

If you're interested in a career in research but you aren't sure whether you want to pursue a dual MD-PhD degree, here are some other options you can explore:

- **PhD in biomedical sciences.** You can earn a PhD in biomedical sciences in graduate programs at medical schools. Such programs typically include one or two years of core coursework, lab rotations to help you select a mentor in your chosen field of research, and three to four years of doctoral research. To learn more about available programs and how to apply, go to aamc.org/phd.
- **MS degree or PhD in clinical investigation.** You might also consider graduate work leading to a master's degree or PhD in clinical investigation. These programs, which you can pursue jointly or after receiving your MD degree, are offered at many medical schools and biomedical graduate schools throughout the country.
- **Year-enrichment program.** Another option is to take a year away from your MD program to conduct research under the direction of a mentor in a scholars' program. Two such programs are the **Fogarty Global Health Program for Fellows and Scholars** and the **National Institutes of Health (NIH) Medical Research Scholars Program**. For details, refer to fic.nih.gov/Programs/Pages/scholars-fellows-global-health.aspx, and clinicalcenter.nih.gov/training/mrsp. In addition, many medical schools offer similar opportunities for their students.

Research Specialties

Like their PhD-only counterparts, people who hold a combined degree can pursue many scientific specialties. Most students earn their PhDs in biomedical disciplines such as biochemistry, biomedical engineering, biophysics, cell biology, genetics, immunology, microbiology, neuroscience, and pharmacology.

It's important to know, however, that not every research specialty is offered at every medical school and that curricula can vary from institution to institution. In some schools, for example, MD-PhD students complete their graduate work in the social sciences or humanities — fields of study outside laboratory disciplines — in areas

such as anthropology, computational biology, economics, engineering, health care policy, mathematics, physics, and sociology.

To learn more, go to students-residents.aamc.org/choosing-medical-career/article/md-phd-social-sciences-or-humanities-it-right-me.

View a summary of MD-PhD programs that offer areas of study in social sciences, humanities, or other nontransitional fields of graduate study: students-residents.aamc.org/media/7186/download.

Clinical Specialties

MD-PhD students can pursue many clinical specialties. The clinical specialty choices of MD-PhD graduates over the past five years indicate strong interest in internal medicine, pathology, and pediatrics.

Compared with MD-only graduates, MD-PhD graduates are more likely to enter residencies in radiation oncology, child neurology, and pathology and less likely to go into family medicine, emergency medicine, and obstetrics/gynecology. The majority of dual-degree students enter research residency programs after graduation. A very small percentage of program graduates choose not to enter clinical residency and go straight into a research postdoctoral fellowship training.

The Typical Program

Almost all U.S. and Canadian medical schools have MD-PhD programs in one or more areas of specialization. (Find a list of MD-PhD programs available at AAMC-member medical schools at students-residents.aamc.org/applying-medical-school/article/mdphd-degree-programs-state.) Some programs are relatively small, with a total of a dozen or so students over eight years of training (one or two new students each year), and others are much larger, with a total enrollment of around 190 (up to 24 new students enrolled annually). The total number of MD-PhD matriculants in the United States in 2020 was 708, with 51.4% women and 48.6% men. (Refer to Table B-8: U.S. Medical School MD-PhD Applications and Matriculants by School, In-State Status, and Sex, 2020-2021 at aamc.org/media/6141/download.)

Although programs differ, some core elements are common to almost all MD-PhD programs. The typical program takes seven to eight years to complete and includes:

- Completion of the first two years of combined medical and graduate school coursework.
- Three to five years of doctoral research, including the completion of a thesis project.
- A return to medical school for core clinical training and electives during the final years of the medical curriculum.

At most schools, integrated approaches to graduate and medical education have been introduced throughout the curriculum — quite extensively in some programs. In addition, most programs engage students in a wide range of other activities to enrich their training experience.

Residency Programs After Graduation

After medical school, most MD-PhD students transition to residencies just like a traditional medical student. A number of residency programs around the country offer highly structured programs in which research is fully integrated into clinical training. These programs differ in their overall composition but generally offer a shortened residency training period. For more information, visit students-residents.aamc.org/choosing-medical-career/article/career-paths-md-phd-graduates.

Application and Admission

Nearly all MD-PhD programs participate in the American Medical College Application Service (AMCAS), described in Chapter 7.

If you choose to pursue a dual-degree program, you'll designate yourself as a combined MD-PhD training applicant and complete two additional essays: one explaining why you are interested in the joint training program and the other describing your research experience. Specifics in the application process — and the prerequisites required for admission — vary from school to school. Some institutions, for example, require GRE scores. For complete information about a dual-degree program that interests you, review the program description at the medical school's website.

Where Physician-Scientists Work

Nearly 80% of MD-PhD graduates who responded to a national survey are employed as faculty in academic medical centers or work at the NIH, research institutes, industry, or federal agencies.

Source: AAMC. National MD-PhD Program Outcomes Study. Washington, DC: AAMC; 2018.
store.aamc.org/downloadable/download/sample/sample_id/162/.

Factors Considered by Admissions Committees

Admissions committee members will review the application materials for the usual experiences, attributes, and metrics important for admitting students to MD-only programs (see Chapter 8). But because MD-PhD applicants plan to become both physicians and scientists, committee members will also look for evidence of an applicant's passion and aptitude for research. They accomplish this largely through reviewing the applicant's personal statement, which includes a description of research experiences and letters of evaluation from faculty or researchers with whom the applicant has worked. In particular, committee members seek confirmation of:

- Relevant and substantive research experience during or after college.
- An appreciation for and understanding of the work of physician-scientists.
- Intellectual drive, research ability, and perseverance.

If you hope to pursue the MD-PhD joint degree, you'll be expected to have clinical experience — through volunteer work, shadowing a physician-scientist, or specific training. Other experiences that admissions committee members look for are similar to those of the MD-only candidate: leadership positions, community service activities, and teaching roles.

Finally, it's important to be aware that although significant weight is placed on an applicant's interest and experience in research activities, the applicant is also expected to demonstrate a degree of academic excellence similar to that of people accepted into an MD-only program. For students entering MD-PhD programs in 2020, for example, the mean GPA and total MCAT score were 3.67 and 511.2, respectively (as reported by AMCAS: aamc.org/media/6151/download). Keep in mind, though, that the range of GPAs and MCAT scores for accepted applicants is quite broad in conjunction with other selection criteria.

Acceptance Policies

Just as application requirements vary from school to school, so do acceptance policies. Some institutions permit an applicant who is not accepted to the MD-PhD dual-degree program to pursue admission to the MD-only curriculum. Other medical schools will accept applications from MD-PhD candidates only for both degree programs together, and failure to gain admittance to one program precludes consideration from the other. Because school policies differ, clarify these matters with individual schools before applying and let admissions office staff know of your interest in pursuing an MD-only program (if that is the case) should they not be admitted to the dual-degree program.

Financing MD-PhD Programs

The sources of funding for MD-PhD programs vary from school to school. Many schools offer full support for both the MD and PhD components of their education, including tuition waivers, stipends, and health insurance. At other institutions, different degrees of support are available, sometimes only for the PhD component of the program. Before applying to an MD-PhD dual-degree program, you should check with individual programs about the level of financial assistance available.

A significant amount of funding comes from institutional sources and both individual and institutional grants. The latter include the Medical Scientist Training Program (MSTP) sponsored by the NIH, as well as other NIH grants. The MSTP currently has 51 participating programs with approximately 1,000 trainees. For more information about the program, go to nigms.nih.gov/training/instpredoc/pages/predocinst-MSTP.aspx.

To review the list of medical schools participating in the MSTP, visit nigms.nih.gov/training/instpredoc/pages/predocinst-MSTP.aspx. You may also want to contact the program officials at the institutions of interest and review school websites for complete information.

Bear in mind that although most MD-PhD programs offer support for their students, additional resources are available. Most require competitive applications submitted by the trainee and a research mentor. Resources include fellowships from both private sources and a number of NIH institutes. Review a list of these opportunities at students-residents.aamc.org/choosing-medical-career/article/financing-your-graduate-education.

Gap Year and Career Changers

If you have a significant break between earning your bachelor's degree and applying to medical school, use some of that time to gain more research and medically related experience (such as working, shadowing, or volunteering in hospitals and clinics). This will help make you a competitive applicant — you can draw on that experience as you complete your medical school applications and interviews.

For more information about gaining research experience, refer to the Aspiring Docs® fact sheet, How to Get Lab Experience, students-residents.aamc.org/applying-medical-school/article/how-get-lab-experience.

Additional Information

For additional information and guidance about applying to and enrolling in combined MD-PhD programs, please visit the AAMC webpage on dual-degree programs at aamc.org/mdphd and contact your prehealth advisor and the MD-PhD program director at the medical schools of interest.

Want to learn more? You can find answers to questions frequently asked by students at students-residents.aamc.org/media/10091/download.

For additional information about MD-PhD programs, refer to:

Brass LF, Akabas MH, Burnley LD, Engman DM, Wiley CA, Andersen OS. Are MD-PhD programs meeting their goals? An analysis of career choices made by graduates of 24 MD-PhD programs. *Academic Medicine*. 2010;85(4):692-701.

Paik JC, Howard G, Lorenz RG. Postgraduate choices of graduates from medical scientist training programs, 2004-2008. *JAMA*. 2009;302(12):1271-1273.

Association of American Medical Colleges. *National MD-PhD Program Outcomes Study*. Washington, DC: AAMC; 2018. store.aamc.org/downloadable/download/sample/sample_id/162.

Yellin J. MD-PhD program graduates: current workplaces, research effort, and types of research they do. *Analysis in Brief*. 2018;18(2). aamc.org/system/files/reports/1/april2018md-phdprogramgraduatescurrentworkplacesresearcheffort.pdf.



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 12.1

MD-PhD Programs to Consider Applying To

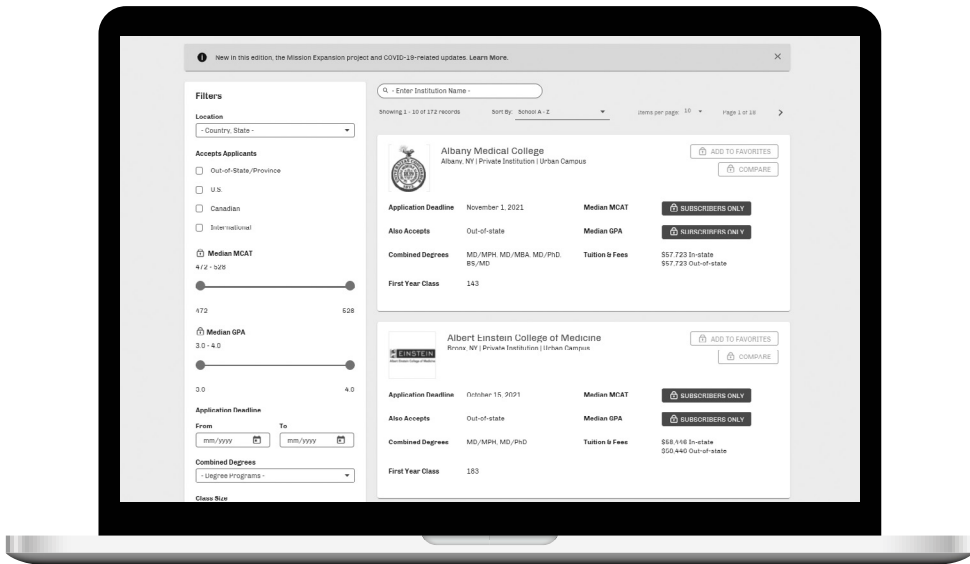
When researching your options, view the AAMC’s table of information on MD-PhD programs online and fill in the chart below to see if you fit the application criteria and may want to apply to the program (students-residents.aamc.org/media/8131/download).

Program Name							
Medical Science Training Program (MSTP) Funded?							
Positions Funded?							
Internal MD Students?							
Internal PhD Students?							
Transfer Students?							
Non-U.S. Citizens or Non-State Residents Accepted?							
GRE Required?							
Summer Positions?							
Consider Applying?							

CHAPTER 13

U.S. Medical Schools

Accredited by the Liaison Committee on Medical Education



MSAR Website — Complete U.S. Medical School Profiles

For complete, detailed information about each U.S. medical school, including MCAT and GPA data, school-specific admission requirements and policies, applicant and acceptee statistics, and side-by-side medical school comparisons, purchase an MSAR subscription. For more information about the MSAR website, a preview of the site, and a complete list of site features, data, and information, visit aamc.org/msar.

U.S. Medical Schools

ALABAMA

University of Alabama at Birmingham
Marnix E. Heersink School of Medicine
University of South Alabama College of Medicine

ARIZONA

University of Arizona College of Medicine - Phoenix
University of Arizona College of Medicine - Tucson

ARKANSAS

University of Arkansas for Medical Sciences
College of Medicine

CALIFORNIA

California Northstate University College of Medicine
California University of Science and Medicine
School of Medicine

Kaiser Permanente Bernard J. Tyson School of Medicine
Keck School of Medicine of the University
of Southern California

Loma Linda University School of Medicine Stanford
University School of Medicine

University of California, Davis, School of Medicine

University of California, Irvine, School of Medicine

University of California, Los Angeles, David Geffen
School of Medicine

University of California, Riverside, School of Medicine

University of California, San Diego, School of Medicine

University of California, San Francisco,
School of Medicine

COLORADO

University of Colorado School of Medicine

CONNECTICUT

Frank H. Netter MD School of Medicine
at Quinnipiac University

University of Connecticut School of Medicine

Yale School of Medicine

DISTRICT OF COLUMBIA

The George Washington University School
of Medicine and Health Sciences

Georgetown University School of Medicine

Howard University College of Medicine

FLORIDA

Charles E. Schmidt College of Medicine at Florida
Atlantic University

Florida International University Herbert Wertheim
College of Medicine

Florida State University College of Medicine

Nova Southeastern University Dr. Kiran C. Patel
College of Allopathic Medicine

University of Central Florida College of Medicine

University of Florida College of Medicine

University of Miami Leonard M. Miller
School of Medicine

USF Health Morsani College of Medicine

GEORGIA

Emory University School of Medicine

Medical College of Georgia at Augusta University

Mercer University School of Medicine

Morehouse School of Medicine

HAWAII

University of Hawaii John A. Burns School of Medicine

ILLINOIS

Carle Illinois College of Medicine

Chicago Medical School at Rosalind Franklin
University of Medicine and Science

Loyola University Chicago Stritch School of Medicine

Northwestern University Feinberg School of Medicine

Rush Medical College of Rush University Medical Center

Southern Illinois University School of Medicine

University of Chicago Division of the Biological
Sciences, The Pritzker School of Medicine

University of Illinois College of Medicine

INDIANA

Indiana University School of Medicine

IOWA

University of Iowa Roy J. and Lucille A. Carver
College of Medicine

KANSAS

University of Kansas School of Medicine

KENTUCKY

University of Kentucky College of Medicine

University of Louisville School of Medicine

LOUISIANA

Louisiana State University School of Medicine
in New Orleans

Louisiana State University School of Medicine
in Shreveport

Tulane University School of Medicine

MARYLAND

Johns Hopkins University School of Medicine

Uniformed Services University of the Health Sciences
F. Edward Hébert School of Medicine

University of Maryland School of Medicine

MASSACHUSETTS

Boston University School of Medicine

Harvard Medical School

Tufts University School of Medicine

University of Massachusetts T.H. Chan
School of Medicine

MICHIGAN

Central Michigan University College of Medicine
Michigan State University College of Human Medicine
Oakland University William Beaumont
School of Medicine
University of Michigan Medical School
Wayne State University School of Medicine
Western Michigan University Homer Stryker M.D.
School of Medicine

MINNESOTA

Mayo Clinic Alix School of Medicine
University of Minnesota Medical School

MISSISSIPPI

University of Mississippi School of Medicine

MISSOURI

Saint Louis University School of Medicine
University of Missouri - Columbia School of Medicine
University of Missouri - Kansas City School of Medicine
Washington University School of Medicine in St. Louis

NEBRASKA

Creighton University School of Medicine
University of Nebraska Medical Center
College of Medicine

NEVADA

Kirk Kerkorian School of Medicine at UNLV
University of Nevada, Reno, School of Medicine

NEW HAMPSHIRE

Geisel School of Medicine at Dartmouth

NEW JERSEY

Cooper Medical School of Rowan University
Rutgers New Jersey Medical School
Rutgers Robert Wood Johnson Medical School
Hackensack Meridian School of Medicine

NEW MEXICO

University of New Mexico School of Medicine

NEW YORK

Albany Medical College
Albert Einstein College of Medicine
CUNY School of Medicine
Columbia University Vagelos College
of Physicians and Surgeons
Donald and Barbara Zucker School of Medicine
at Hofstra/Northwell
Icahn School of Medicine at Mount Sinai
Jacobs School of Medicine and Biomedical Sciences
at the University at Buffalo
New York Medical College
New York University Grossman School of Medicine
New York University Long Island School of Medicine
Renaissance School of Medicine
at Stony Brook University
State University of New York Downstate Medical
Center College of Medicine
State University of New York Upstate Medical University
University of Rochester School
of Medicine and Dentistry
Weill Cornell Medicine

NORTH CAROLINA

The Brody School of Medicine
at East Carolina University
Duke University School of Medicine
University of North Carolina at Chapel Hill
School of Medicine
Wake Forest University School of Medicine
of Wake Forest Baptist Medical Center

NORTH DAKOTA

University of North Dakota School of Medicine
and Health Sciences

OHIO

Case Western Reserve University School of Medicine
Northeast Ohio Medical University
The Ohio State University College of Medicine
University of Cincinnati College of Medicine
The University of Toledo College of Medicine
and Life Sciences
Wright State University Boonshoft School of Medicine

OKLAHOMA

University of Oklahoma College of Medicine

OREGON

Oregon Health & Science University School of Medicine

PENNSYLVANIA

Drexel University College of Medicine

Geisinger Commonwealth School of Medicine

Lewis Katz School of Medicine at Temple University

Pennsylvania State University College of Medicine

Perelman School of Medicine
at the University of Pennsylvania

Sidney Kimmel Medical College
at Thomas Jefferson University

University of Pittsburgh School of Medicine

PUERTO RICO

Ponce Health Sciences University School of Medicine

San Juan Bautista School of Medicine

Universidad Central del Caribe School of Medicine

University of Puerto Rico School of Medicine

RHODE ISLAND

The Warren Alpert Medical School of Brown University

SOUTH CAROLINA

Medical University of South Carolina
College of Medicine

University of South Carolina School
of Medicine - Columbia

University of South Carolina School
of Medicine - Greenville

SOUTH DAKOTA

University of South Dakota School of Medicine
and Health Sciences

TENNESSEE

East Tennessee State University James H. Quillen
College of Medicine

Meharry Medical College

University of Tennessee Health Science Center
College of Medicine

Vanderbilt University School of Medicine

TEXAS

Baylor College of Medicine

McGovern Medical School at the University of Texas
Health Science Center at Houston

TCU and UNTHSC School of Medicine

Texas A&M Health Science Center College of Medicine

Texas Tech University Health Sciences Center
Paul L. Foster School of Medicine

Texas Tech University Health Sciences Center
School of Medicine

University of Houston College of Medicine

The University of Texas Health Science Center
at San Antonio Joe R. and Teresa Lozano Long
School of Medicine

University of Texas at Austin Dell Medical School

University of Texas Medical Branch School of Medicine

University of Texas Rio Grande Valley
School of Medicine

University of Texas Southwestern Medical School

UTAH

University of Utah School of Medicine

VERMONT

Robert Larner, M.D., College of Medicine at the
University of Vermont

VIRGINIA

Eastern Virginia Medical School

University of Virginia School of Medicine

Virginia Commonwealth University School of Medicine

Virginia Tech Carilion School of Medicine

WASHINGTON

University of Washington School of Medicine

Washington State University Elson S. Floyd
College of Medicine

WEST VIRGINIA

Marshall University Joan C. Edwards
School of Medicine

West Virginia University School of Medicine

WISCONSIN

Medical College of Wisconsin

University of Wisconsin School of Medicine
and Public Health

Canadian Medical Schools



Thyrmiga Sathiyamoorthy

University of Toronto Temerty Faculty of Medicine
Class of 2024

“My journey to medical school was not traditional. After my undergraduate studies, I pursued a research master’s degree and then worked in health policy research for a few years before deciding on a career in medicine. As a result, I have had five years of experience in health research examining how policy responses to emerging health risks shape the experiences of equity-seeking populations. In doing this work, I enjoyed listening to people’s stories and wanted to directly work with them to improve their health and well-being. This realization motivated me to pursue becoming a physician.

I chose to attend the University of Toronto Temerty Faculty of Medicine for medical school for several reasons. As a first-generation student who was the first in my family to finish high school, undergraduate studies, and a master’s degree, and now to pursue medicine, I realized that being close to my support system was critical to my success. Second, I have always been interested in working within the Greater Toronto Area due to its unique population of evolving and growing diverse communities with different linguistic, cultural, and psychological needs. Further, the University of Toronto Temerty Faculty of Medicine has a strong emphasis on research involvement and productivity. For me, conducting research and advancing scholarly work is central to my professional identity because I am passionate about strengthening equity efforts in medicine. As a result, it was important to me to apply to and enroll in a program at a Canadian medical school close to my support system that encourages and is committed to teaching research skills throughout the curriculum, which is offered in full at the University of Toronto.”

Selection Criteria

Canadian medical schools vary with respect to the number of years of undergraduate instruction they require of applicants. They also vary in the recommended content covered during premedical undergraduate education. Table 14.1 shows that physics, inorganic and organic chemistry, biology, biochemistry, humanities, and English are the most common required subjects.

Language of Instruction

Three Canadian medical schools — Laval, Montréal, and Sherbrooke, all located in Quebec province — require students to be fluent in French because all instruction is in that language. Instruction at 13 other Canadian schools is in English, and the University of Ottawa offers the MD curriculum in both French and English.

In Canada, universities fall under provincial jurisdiction, and the majority of student spots in each faculty of medicine are allocated to permanent residents of the province in which the university is located.

Not all faculties of medicine accept applications from international students. Conversely, some faculties of medicine may reserve positions for international students, possibly as part of agreements with foreign governments and institutions. Statistics compiled by the Association of Faculties of Medicine of Canada (afmc.ca) show that

most medical schools admit international students. In 2019-2020, for example, 77 U.S. students applied to eight schools, and 3.9% of those students were accepted, according to the Canadian medical schools that supplied data. In the same year, 434 non-U.S. international students applied to the 10 Canadian medical schools that supplied data, and their success rate was 1.6%. The success rate for Canadian applicants to the same schools was 17.6%. Additional information about Canadian medical schools can be found in the Association of Faculties of Medicine of Canada 2021 publication of *Admission Requirements of Canadian Faculties of Medicine* (afmc.ca/sites/default/files/pdf/2021_admission-requirements_EN.pdf).

Positions filled by international students in Canadian medical schools are not necessarily subsidized by provincial or territorial governments. This means that international students, including U.S. students, may pay higher tuition and fees than Canadian residents.

Academic Record and Suitability

Although an excellent academic record is a very important factor in gaining admission to a Canadian medical school, admissions committees also put a great deal of effort into assessing applicants' suitability for a medical career based on other factors, too. Personal suitability is assessed differently by each school, but in general, applicants who can demonstrate they possess the qualities considered important in the practice of medicine may sometimes be admitted even without an outstanding academic record. Conversely, applicants with outstanding records who don't possess these qualities may not gain a place in medical school.

Most applicants to Canadian medical schools are interviewed before acceptance, so the interview information in Chapter 8 is also relevant.

MCAT

Twelve of the 17 Canadian medical schools require applicants to take the MCAT exam: Alberta, British Columbia, Calgary, Dalhousie, Manitoba, McGill, McMaster, Memorial, Queen's, Saskatchewan, Toronto, and Western Ontario.

Tuition and Other Compulsory Fees

Because the medical schools in Canada fall under the jurisdiction of provincial governments, annual tuition and compulsory fees vary considerably. Applicants who reside in the province where the medical school is located may pay annual fees ranging from \$3,601 to \$29,487, with an average of \$16,195 (refer to Table 14.2). Applicants who are Canadian citizens or permanent residents in a different province may pay fees ranging from \$8,360 to \$29,487, with an average of \$18,249; foreign student applicants can expect to pay fees ranging from \$28,615 to \$95,000, with an average of \$52,483.

Other Considerations

Canadian faculties of medicine do not discriminate on the basis of race, religion, or gender in admitting new students. The admission of aboriginal students (First Nations, Inuit, and Métis) is encouraged at Canadian medical schools, and most schools allocate positions specifically for aboriginal applicants, including Laval, Sherbrooke, Montréal, McGill, Ottawa, Queen's, McMaster, Western Ontario, Northern Ontario School of Medicine, Manitoba, Saskatchewan, Alberta, and British Columbia.

Table 14.1. Subjects Often Required or Recommended by Canadian Medical Schools*

Required or Recommended Subject
Biochemistry
Biology
Biology/Zoology
Calculus
College Mathematics
English
Humanities
Inorganic Chemistry
Organic Chemistry
Physics
Social Sciences

*For specific requirements and recommendations, refer to the individual school profiles on the MSAR website: aamc.org/msar (subscription required). You can also view coursework requirements on individual medical school websites.

Source: AAMC MSAR website, 2021.

Table 14.2. Tuition and Student Fees for 2020-2021 First-Year Students at Canadian Medical Schools (in Canadian Dollars)*

Categories of Students	Range	Average**
In-Province	\$3,601-\$29,487	\$16,195
Canada, Out-of-Province	\$8,360-\$29,487	\$18,249
Visa	\$28,615-\$95,000	\$52,483

*Figures based on data provided in fall 2020.

**Average in-province and out-of-province data were derived from all 17 Canadian schools. Average visa data were derived from six schools that accept foreign students.

Source: Association of Faculties of Medicine of Canada. Admission Requirements of Canadian Faculties of Medicine in 2020. AFMC, 2020.

The number of female applicants has leveled off in recent years, with correspondingly consistent proportions of women in schools' entering classes. Women have made up approximately 56% of the applicant pool for the last five years, and the success rate for women was slightly higher than that for men. Overall, 11% of applicants received at least one offer of admission.

Expenses and Financial Aid

Tuition and student fees for Canadian and non-Canadian students in the 2020 entering

class are provided in Table 14.2 and in individual medical school entries on the MSAR website. Expenses vary from school to school and from student to student. Tuition at several Canadian schools is slightly higher for the first year than for successive years. Some financial aid information is provided in the individual school entries. Eligible Canadian students may apply for a Canadian student loan, or they may apply to the Department of Education in their province for a provincial student loan.

Canadian Medical Schools

ALBERTA

University of Alberta Faculty of Medicine and Dentistry
University of Calgary Cumming School of Medicine

BRITISH COLUMBIA

University of British Columbia Faculty of Medicine

MANITOBA

Max Rady College of Medicine, Rady Faculty
of Health Sciences, University of Manitoba

NEWFOUNDLAND

Memorial University of Newfoundland
Faculty of Medicine

NOVA SCOTIA

Dalhousie University Faculty of Medicine

ONTARIO

McMaster University Michael G. DeGroote
School of Medicine
Northern Ontario School of Medicine
Queen's University Faculty of Health Sciences
University of Ottawa Faculty of Medicine
University of Toronto Temerty Faculty of Medicine
The University of Western Ontario – Schulich
School of Medicine & Dentistry

QUEBEC

Faculty of Medicine Université Laval
McGill University Faculty of Medicine
and Health Sciences
Université de Montréal Faculty of Medicine
Université de Sherbrooke Faculty of Medicine

SASKATCHEWAN

University of Saskatchewan College of Medicine



Worksheets at the ends of chapters in this guide are available in fillable PDF format at aamc.org/msar-resources.

Worksheet 14.1

Questions About Canadian Medical Schools to Ask During Interviews

As you research Canadian medical schools you're interested in attending, use this worksheet to keep track of questions you may ask during your interview. Print or save this page for individual schools and review it the night before your interview or bring it with you. You can find many questions here: aamc.org/35questions.

Name of medical school: _____

Type of interview: _____

Date of interview: _____

Questions about:

1. Curriculum _____

2. Student involvement _____

3. Special programs _____

4. Financial aid _____

5. Facilities _____

6. Academic evaluations _____

7. Student support _____

8. Residency placement _____

9. Other _____

Acronyms

AAMC

Association of American Medical Colleges
aamc.org

AMCAS®

American Medical College Application Service®
aamc.org/amcas

CiM

Careers in Medicine®
aamc.org/cim

COA

Cost of attendance

EDP

Early Decision Program
students-residents.aamc.org/applying-medical-school/article/early-decision-program

ERAS®

Electronic Residency Application Service®
aamc.org/eras

FAFSA

Free Application for Federal Student Aid
fafsa.ed.gov

FIRST

Financial Information, Resources, Services, and Tools
aamc.org/first

GQ

Graduation Questionnaire
aamc.org/data/gq

HHMI

Howard Hughes Medical Institute
hhmi.org/programs/science-education-research-training

HIPAA

Health Insurance Portability and Accountability Act

LCME®

Liaison Committee on Medical Education
lcme.org

MCAT®

Medical College Admission Test®
aamc.org/mcat

Med-MAR

Medical Minority Applicant Registry
aamc.org/medmar

MSAR®

Medical School Admission Requirements™
aamc.org/msar

MSQ

Matriculating Student Questionnaire
aamc.org/data/msq

NAAHP

National Association of Advisors for the Health Professions
naahp.org

NBME

National Board of Medical Examiners
nbme.org

NHSC

National Health Service Corps
nhsc.hrsa.gov

NIH

National Institutes of Health
training.nih.gov

NRMP®

National Resident Matching Program
nrmp.org

NSLDS

National Student Loan Data System
nsldsfp.ed.gov

SHPEP

Summer Health Professions Education Program
shpep.org

TSF

Tuition and Student Fees Survey
aamc.org/data/tuitionandstudentfees

USMLE

United States Medical Licensing Examination
usmle.org

VSLO®

Visiting Student Learning Opportunities™
aamc.org/vslo

MSAR

2021

Official Guide to Medical School Admissions



This comprehensive guide to medical school admissions helps you:

- Identify prospective medical schools.
- Navigate the application process.
- Understand admissions decisions.
- Organize and plan with premade worksheets.

The guide is published by the AAMC, an organization that represents U.S. and Canadian medical schools, administers the MCAT® exam, and manages the American Medical College Application Service® (AMCAS®). Visit aamc.org for more information.

Research medical schools

The AAMC also publishes comprehensive online profiles of each U.S. and Canadian medical school, featuring information directly from the MCAT exam and the AMCAS application and through a partnership with medical school admissions offices. When it's time to search for medical schools, subscribe to the AAMC's Medical School Admission Requirements™ (MSAR®) site.

aamc.org/msar



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