

NATURE OF THE WORK, EARNINGS AND OCCUPATIONAL OUTLOOK

Physicians are dedicated to serving the health care needs of society through diagnosing and treating illness, injury, and disease. About one third of physicians in the U.S. work in primary care, acting as the first health professional consulted by patients. Most primary care physicians provide comprehensive health care to patients and families and tend to see the same patients over a long period of time. When necessary, primary care physicians refer patients to medical specialists and surgeons for further expertise. Most physicians work in small offices, clinics or in group medical practices where they see patients. Physicians often work long, irregular hours, and rotate shifts for emergency calls, as well as travel between the office and hospital to care for patients. Anesthesiologists, pathologists, radiologists, surgeons, and emergency physicians, spend the majority of their time working in hospitals or surgical outpatient centers.

Though earnings vary according to number of years in practice, type of practice, geographical location, and specialty, the total median annual income of physicians was \$208,000 ([Occupational Outlook Handbook, 2018](#)). The salary can also range from \$241,273 to \$525,000 depending on the specialty and area of practice (OOH 2018). With recent changes in the health care system, there are fewer individual practices, and more physicians joining medical groups or networks. Employment of physicians and surgeons is projected to grow 13% from 2016 to 2026; job growth is projected due to increased demand for healthcare services by the growing and aging population. Job prospects should be good for physicians looking to practice in rural and low-income areas, which are often underserved (OOH 2018).

UNDERGRADUATE EDUCATION - MAJOR

No particular major is required or preferred for medical school admissions, thus students are advised to select a major they find interesting and in which they can excel. Students should also consider a major that may lead them to an alternate career, should they decide not to pursue a medical education. Whichever major a student declares, their course of study must incorporate the required pre-medical requirements. Many students who select a science major find a great deal of overlap between their major requirements and those required for medical school. Regardless of the choice in major, medical schools prefer that students have a well-rounded liberal arts education.

MEDICAL SCHOOL EDUCATION (4 DEMANDING YEARS)

There are 151 accredited medical schools in the U.S. and 17 accredited Canadian medical schools that award the degree of Medical Doctor (M.D.). Medical school usually requires 4 academic years. Studies begin with 2 years of classroom instruction in the basic sciences. The normal structure and function of human systems are taught through gross anatomy, cell biology, biochemistry, medical genetics, behavioral science, physiology, and neuroscience. Subsequently, the education focus shifts to abnormalities of structure and function, disease, and general therapeutic principles through exposure to microbiology, immunology, pathology, and pharmacology. The following two years involve a series of clinical rotations throughout inpatient and outpatient settings where students work with patients under the supervision of attending physicians and medical residents. During the clinical years, students also have an opportunity to take elective rotations. During the last year of medical school, students make decisions about medical specialty and apply for internship or residency programs in their desired area of expertise ([The Official Guide to Medical School Admissions, 2017](#)).

RESIDENCY AND FELLOWSHIP TRAINING (3-8 YEARS)

Following medical school, graduates begin their graduate medical education or residency, which is paid, on-the-job training in a specialty. The training required varies from 3 to 8 years or more depending on the specialty selected. Family Practice, Emergency Medicine, Pediatrics, and Internal Medicine require 3 years. Training in Obstetrics and Gynecology, Pathology, Anesthesiology, Dermatology, Neurology, Nuclear Medicine, Ophthalmology, Physical Medicine, Psychiatry, Radiology and Radiation Oncology lasts 4 years. The *surgical specialties* including General, Neurological, Orthopedic

Otolaryngology, and Urology and they require 5 years of residency. Most specialties also offer advanced training in a subspecialty usually requiring an additional 1 to 3 years of fellowship following residency.

PRE-MEDICAL PREPARATION

Due to the competitive nature of the medical school application process and rigorous training required, students should carefully consider their motivation and preparation for a career in medicine. In 2018-2019 a total of 52,777 applicants applied to medical school and 21,622 applicants were offered admissions to at least one school. **The fall 2018 entering class had a mean science (all courses classified as Biology, Chemistry, Physics and Mathematics - BCMP) GPA of 3.47, a mean non-science GPA of 3.71 and total GPA of 3.70. MCAT score was 505.6 (Assoc. of American Medical Colleges).**

Additional information:

Various U.S. medical schools do not accept AP units toward the satisfaction of stated pre-requisite courses. All required courses must be taken for a letter grade, not for Credit/No Credit. If courses are repeated, both grades will be calculated in your AMCAS (American Medical College Application Service) grade-point average. Check with the individual medical schools in which you are interested.

About the MCAT:

The Medical College Admission Test (MCAT) is a standardized exam consisting of four multiple-choice sections:

1. Biological and Biochemical Foundations of Living Systems
2. Chemical and Physical Foundations of Biological Systems
3. Psychological, Social, and Biological Foundations of Behavior
4. Critical Analysis and Reasoning Skills

Before attempting the MCAT, students should have completed at least one year each of biology, general chemistry, organic chemistry, and physics as well as one semester of biochemistry. In addition, students should also complete general sociology and psychology courses. It is highly recommended that you take the MCAT in the spring before you apply. Visit: <https://students-residents.aamc.org/applying-medical-school/taking-mcat-exam/> for important information about the MCAT.

Important Note: Almost all U.S. medical schools and many Canadian schools require applicants to submit MCAT exam scores. Many schools do not accept MCAT exam scores that are more than three years old.

OTHER FACTORS CONSIDERED FOR ADMISSIONS TO MEDICAL SCHOOLS

CLINICAL EXPOSURE is strongly recommended for admission to most medical schools. This can include a paid or volunteer position in a doctor's office, local clinic, or a hospital. Most hospitals and clinics gladly accept volunteers (contact the volunteer services office at your local hospital for more information). Medical school admission committees want to know that you have the desire and ability to work with patients. The successful participation in clinical volunteer or job experience can demonstrate this.

RESEARCH experience is increasingly important. Options include volunteering in a lab for a professor, getting a job as a lab assistant at a local university, hospital or pharmaceutical company, or participating in a summer biomedical research program. Visit: <https://www.aamc.org/students/aspiring/experience> for summer undergraduate research programs.

COMMUNITY SERVICE experience is **highly** valued by medical schools. Future doctors should be able to demonstrate compassion and a willingness to give back to their communities. Getting involved in community service efforts on or off campus that are of interest to you can enhance a medical school application.

WORK EXPERIENCE can also be valuable in demonstrating your potential to succeed in medical school. Past success in a work environment can reveal meaningful information to admissions committees. Depending on the setting, work experience can help develop and showcase a variety of skills including communication (oral and/or written) time management, and problem solving.

LETTERS OF RECOMMENDATION are required for application to medical school. The typical letter packet consists of three to five letters, two from science professors, one from a non-science professor and one, or more, from supervisors of relevant work, research, or clinical activities. The purpose of the letters is to provide medical schools with an impression of the applicant from respected academics or persons who are in a position to observe the applicant's work as it relates to the study of medicine. Students are encouraged to create and maintain positive contacts with prospective recommenders early in their academic career.

APPLICATION

The American Medical College Application Service (AMCAS) is a non-profit, centralized application processing service for applicants to the first-year entering classes at participating U.S. medical schools. Most medical schools use AMCAS as the primary application method. Visit <https://www.aamc.org/students/applying/amcas/> for applicant information. It is important to **APPLY EARLY** as most medical schools are on rolling admissions.

COURSE REQUIREMENTS FOR MEDICAL SCHOOLS

Specific undergraduate course requirements vary from program to program. Students should consult each school, and the *Medical School Admission Requirements: U.S. and Canada, (MSAR)* published by the Association of American Medical Colleges (AAMC) for specific requirements. The MSAR is available to purchase at www.aamc.org.

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This is NOT a comprehensive list of prerequisites for all programs. Students maintain responsibility for verifying course selection with individual programs.

IVC Courses that fulfill admission requirements for allopathic (MD) medical schools:

Pre-medical Coursework	IVC Courses
One year of General Chemistry with lab	CHEM 1A & CHEM 1B
One year of Organic Chemistry with lab	CHEM 12A & CHEM 12B
One year of General Biology with lab	BIO 5 & BIO 16 or BIO 80/80H & BIO 81/81H
One year of General Physics with lab	PHYS 2A & 2B or PHYS 4A & 4B & 4C
One year of English (Composition and Literature preferred)	WR 1/1H and WR 2/2H

Strongly recommended courses (required at some schools):

Pre-medical Coursework	IVC Courses
One semester to one year of college-level Math (Calculus)	MATH 3A/3AH and/or MATH 3B/3BH
One course of Statistics	MATH 10 or ECON 10/10H or MGT 10/10/H or PSYC 10/10H
One upper division molecular/cell biology course	No courses equivalent at IVC
One course in Biochemistry	BIO 10
Genetics	BIO 82
Mammalian Physiology	BIO 12
Social and Behavioral Sciences	PSYC 1/1H and SOC 1/1H

Other courses for consideration: anatomy, immunology, histology, microbiology, social sciences, humanities, speech, and a foreign language (Spanish). We recommend pre-health students enroll in courses that meet the General Education requirements to help you develop a broad understanding of the health professions in relation to other disciplines of study.