

Physicians and Surgeons

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Significant Points

- Many physicians and surgeons work long, irregular hours; almost one-third of physicians worked 60 or more hours a week in 2002.
- New physicians are much less likely to enter solo practice and more likely to work as salaried employees of group medical practices, clinics, hospitals, or health networks.
- Formal education and training requirements are among the most demanding of any occupation, but earnings are among the highest.

Nature of the Work

Physicians and surgeons serve a fundamental role in our society and have an effect upon all our lives. They diagnose illnesses and prescribe and administer treatment for people suffering from injury or disease. Physicians examine patients, obtain medical histories, and order, perform, and interpret diagnostic tests. They counsel patients on diet, hygiene, and preventive healthcare.

There are two types of physicians: M.D.—Doctor of Medicine—and D.O.—Doctor of Osteopathic Medicine. M.D.s also are known as allopathic physicians. While both M.D.s and D.O.s may use all accepted methods of treatment, including drugs and surgery, D.O.s place special emphasis on the body's musculoskeletal system, preventive medicine, and holistic patient care. D.O.s are more likely than M.D.s to be primary care specialists although they can be found in all specialties. About half of D.O.s practice general or family medicine, general internal medicine, or general pediatrics.

Physicians work in one or more of several specialties, including, but not limited to, anesthesiology, family and general medicine, general internal medicine, general pediatrics, obstetrics and gynecology, psychiatry, and surgery.

Anesthesiologists. Anesthesiologists focus on the care of surgical patients and pain relief. Like other physicians, they evaluate and treat patients and direct the efforts of those on their staffs. Anesthesiologists confer with other physicians and surgeons about appropriate treatments and procedures before, during, and after operations. These critical specialists are responsible for maintenance of the patient's vital life functions—heart rate, body temperature, blood pressure, breathing—through continual monitoring and assessment during surgery.

Family and general practitioners. Family and general practitioners are often the first point of contact for people seeking health care, acting as the traditional family doctor. They assess and treat a wide range of conditions, ailments, and injuries, from sinus and respiratory infections to broken bones and scrapes. Family and general practitioners typically have a patient base of regular, long-term visitors. Patients with more serious conditions are referred to specialists or other healthcare facilities for more intensive care.

General internists. General internists diagnose and provide nonsurgical treatment for diseases and injuries of internal organ systems. They provide care mainly for adults who have a wide range of problems associated with the internal organs, such as the stomach, kidneys, liver, and digestive tract. Internists use a

variety of diagnostic techniques to treat patients through medication or hospitalization. Like general practitioners, general internists are commonly looked upon as primary care specialists. They have patients referred to them by other specialists, in turn referring patients to those and yet other specialists when more complex care is required.

General pediatricians. Providing care from birth to early adulthood, pediatricians are concerned with the health of infants, children, and teenagers. They specialize in the diagnosis and treatment of a variety of ailments specific to young people and track their patients' growth to adulthood. Like most physicians, pediatricians work with different healthcare workers, such as nurses and other physicians, to assess and treat children with various ailments, such as muscular dystrophy. Most of the work of pediatricians, however, involves treating day-to-day illnesses that are common to children—minor injuries, infectious diseases, and immunizations—much as a general practitioner treats adults. Some pediatricians specialize in serious medical conditions and pediatric surgery, treating autoimmune disorders or serious chronic ailments.

Obstetricians and gynecologists. Obstetricians and gynecologists (ob/gyns) are specialists whose focus is women's health. They are responsible for general medical care for women, but also provide care related to pregnancy and the reproductive system. Like general practitioners, ob/gyns are concerned with the prevention, diagnosis, and treatment of general health problems, but they focus on ailments specific to the female anatomy, such as breast and cervical cancer, urinary tract and pelvic disorders, and hormonal disorders. Ob/gyns also specialize in childbirth, treating and counseling women throughout their pregnancy, from giving prenatal diagnoses to delivery and postpartum care. Ob/gyns track the health of, and treat, both mother and fetus as the pregnancy progresses.

Psychiatrists. Psychiatrists are the primary caregivers in the area of mental health. They assess and treat mental illnesses through a combination of psychotherapy, psychoanalysis, hospitalization, and medication. Psychotherapy involves regular discussions with patients about their problems; the psychiatrist helps them find solutions through changes in their behavioral patterns, the exploration of their past experiences, and group and family therapy sessions. Psychoanalysis involves long-term psychotherapy and counseling for patients. In many cases, medications are administered to correct chemical



Physicians practice in a variety of specialties, including general pediatrics.

imbalances that may be causing emotional problems. Psychiatrists may also administer electroconvulsive therapy to those of their patients who do not respond to, or who cannot take, medications.

Surgeons. Surgeons are physicians who specialize in the treatment of injury, disease, and deformity through operations. Using a variety of instruments, and with patients under general or local anesthesia, a surgeon corrects physical deformities, repairs bone and tissue after injuries, or performs preventive surgeries on patients with debilitating diseases or disorders. Although a large number perform general surgery, many surgeons choose to specialize in a specific area. One of the most prevalent specialties is orthopedic surgery: the treatment of the skeletal system and associated organs. Others include neurological surgery (treatment of the brain and nervous system), ophthalmology (treatment of the eye), orthopedic surgery, otolaryngology (treatment of the ear, nose, and throat), and plastic or reconstructive surgery. Like primary care and other specialist physicians, surgeons also examine patients, perform and interpret diagnostic tests, and counsel patients on preventive health care.

A number of other medical specialists, including allergists, cardiologists, dermatologists, emergency physicians, gastroenterologists, pathologists, and radiologists, also work in clinics, hospitals, and private offices.

Working Conditions

Many physicians—primarily general and family practitioners, general internists, pediatricians, ob/gyns, and psychiatrists—work in small private offices or clinics, often assisted by a small staff of nurses and other administrative personnel. Increasingly, physicians are practicing in groups or healthcare organizations that provide backup coverage and allow for more time off. These physicians often work as part of a team coordinating care for a population of patients; they are less independent than solo practitioners of the past.

Surgeons and anesthesiologists typically work in well-lit, sterile environments while performing surgery and often stand for long periods. Most work in hospitals or in surgical outpatient centers. Many physicians and surgeons work long, irregular hours. Almost one-third of physicians worked 60 hours or more a week in 2002. Physicians and surgeons must travel frequently between office and hospital to care for their patients. Those who are on call deal with many patients' concerns over the phone and may make emergency visits to hospitals or nursing homes.

Employment

Physicians and surgeons held about 583,000 jobs in 2002; approximately 1 out of 6 was self-employed. About half of salaried physicians and surgeons were in office-based practice, and almost a quarter were employed by hospitals. Others practiced in Federal, State, and local government; educational services; and outpatient care centers.

A growing number of physicians are partners or salaried employees of group practices. Organized as clinics or as associations of physicians, medical groups can afford expensive medical equipment and realize other business advantages.

The New England and Middle Atlantic States have the highest ratio of physicians to population; the South Central States have the lowest. D.O.s are more likely than M.D.s to practice in small cities and towns and in rural areas. M.D.s tend to locate in urban areas, close to hospital and education centers.

Training and Other Qualifications

It takes many years of education and training to become a physician: 4 years of undergraduate school, 4 years of medical school, and 3 to 8 years of internship and residency, depending on the specialty selected. A few medical schools offer a combined undergraduate and medical school programs that last 6 rather than the customary 8 years.

Premedical students must complete undergraduate work in physics, biology, mathematics, English, and inorganic and organic chemistry. Students also take courses in the humanities and the social sciences. Some students volunteer at local hospitals or clinics to gain practical experience in the health professions.

The minimum educational requirement for entry into a medical school is 3 years of college; most applicants, however, have at least a bachelor's degree, and many have advanced degrees. There are 146 medical schools in the United States—126 teach allopathic medicine and award a Doctor of Medicine (M.D.) degree; 20 teach osteopathic medicine and award the Doctor of Osteopathic Medicine (D.O.) degree. Acceptance to medical school is highly competitive. Applicants must submit transcripts, scores from the Medical College Admission Test, and letters of recommendation. Schools also consider applicants' character, personality, leadership qualities, and participation in extracurricular activities. Most schools require an interview with members of the admissions committee.

Students spend most of the first 2 years of medical school in laboratories and classrooms, taking courses such as anatomy, biochemistry, physiology, pharmacology, psychology, microbiology, pathology, medical ethics, and laws governing medicine. They also learn to take medical histories, examine patients, and diagnose illnesses. During their last 2 years, students work with patients under the supervision of experienced physicians in hospitals and clinics, learning acute, chronic, preventive, and rehabilitative care. Through rotations in internal medicine, family practice, obstetrics and gynecology, pediatrics, psychiatry, and surgery, they gain experience in the diagnosis and treatment of illness.

Following medical school, almost all M.D.s enter a residency—graduate medical education in a specialty that takes the form of paid on-the-job training, usually in a hospital. Most D.O.s serve a 12-month rotating internship after graduation and before entering a residency, which may last 2 to 6 years.

All States, the District of Columbia, and U.S. territories license physicians. To be licensed, physicians must graduate from an accredited medical school, pass a licensing examination, and complete 1 to 7 years of graduate medical education. Although physicians licensed in one State usually can get a license to practice in another without further examination, some States limit reciprocity. Graduates of foreign medical schools generally can qualify for licensure after passing an examination and completing a U.S. residency.

M.D.s and D.O.s seeking board certification in a specialty may spend up to 7 years in residency training, depending on the specialty. A final examination immediately after residency or after 1 or 2 years of practice also is necessary for certification by the American Board of Medical Specialists or the American Osteopathic Association. There are 24 specialty boards, ranging from allergy and immunology to urology. For certification in a subspecialty, physicians usually need another 1 to 2 years of residency.

A physician's training is costly. More than 80 percent of medical students borrow money to cover their expenses.

People who wish to become physicians must have a desire to serve patients, be self-motivated, and be able to survive the pressures and long hours of medical education and practice. Physicians also must have a good bedside manner, emotional stability, and the ability to make decisions in emergencies. Prospective physicians must be willing to study throughout their career in order to keep up with medical advances.

Job Outlook

Employment of physicians and surgeons will grow about as fast as the average for all occupations through the year 2012 due to continued expansion of the health services industries. The growing and aging population will drive overall growth in the demand for physician services, as consumers continue to demand high levels of care using the latest technologies, diagnostic tests, and therapies.

Demand for physicians' services is highly sensitive to changes in consumer preferences, healthcare reimbursement policies, and legislation. For example, if changes to health coverage result in consumers facing higher out-of-pocket costs, they may demand fewer physician services. Demand for physician services may also be tempered by patients relying more on other healthcare providers—such as physician assistants, nurse practitioners, optometrists, and nurse anesthetists—for some healthcare services. In addition, new technologies will increase physician productivity. Telemedicine will allow physicians to treat patients or consult with other providers remotely. Increasing use of electronic medical records, test and prescription orders, billing, and scheduling will also improve physician productivity.

Opportunities for individuals interested in becoming physicians and surgeons are expected to be favorable. Reports of shortages in some specialties or geographic areas should attract new entrants, encouraging schools to expand programs and hospitals to expand available residency slots. However, because physician training is so lengthy, employment change happens gradually. In the short term, to meet increased demand, experienced physicians may work longer hours, delay retirement, or take measures to increase productivity, such as using more support staff to provide services. Opportunities should be particularly good in rural and low-income areas, because some physicians find these areas unattractive due to lower earnings potential, isolation from medical colleagues, or other reasons.

Unlike their predecessors, newly trained physicians face radically different choices of where and how to practice. New physicians are much less likely to enter solo practice and more likely to take salaried jobs in group medical practices, clinics, and health networks.

Earnings

Physicians have among the highest earnings of any occupation. According to the Medical Group Management Association's Physician Compensation and Production Survey, median total compensation for physicians in 2002 varied by specialty, as shown in table 1. Total compensation for physicians reflects the amount reported as direct compensation for tax purposes, plus all voluntary salary reductions. Salary, bonus and/or incentive payments, research stipends, honoraria, and distribution of profits were included in total compensation.

Table 1. Total compensation of physicians by specialty, 2002

Anesthesiology	\$306,964
Surgery, general.....	255,438
Obstetrics/gynecology	233,061
Psychiatry	163,144
Internal medicine	155,530
Pediatrics/adolescent medicine	152,690
Family practice (without obstetrics)	150,267

SOURCE: *Medical Group Management Association, Physician Compensation and Production Report, 2003.*

Self-employed physicians—those who own or are part owners of their medical practice—generally have higher median incomes than salaried physicians. Earnings vary according to number of years in practice, geographic region, hours worked, and skill, personality, and professional reputation. Self-employed physicians and surgeons must provide for their own health insurance and retirement.

Related Occupations

Physicians work to prevent, diagnose, and treat diseases, disorders, and injuries. Professionals in other occupations requiring similar skills and critical judgment include chiropractors, dentists, optometrists, physician assistants, podiatrists, registered nurses, and veterinarians.

Sources of Additional Information

For a list of medical schools and residency programs, as well as general information on premedical education, financial aid, and medicine as a career, contact:

► Association of American Medical Colleges, Section for Student Services, 2450 N St. NW., Washington, DC 20037-1126. Internet: <http://www.aamc.org>

► American Association of Colleges of Osteopathic Medicine, 5550 Friendship Blvd., Suite 310, Chevy Chase, MD 20815-7231. Internet: <http://www.aacom.org>

For general information on physicians, contact:

► American Medical Association, Department of Communications and Public Relations, 515 N. State St., Chicago, IL 60610. Internet: <http://www.ama-assn.org>

► American Osteopathic Association, Division of Public Relations, 142 East Ontario St., Chicago, IL 60611. Internet: <http://www.aoa-net.org>

For information about various medical specialties, contact:

► American Society of Anesthesiologists, 520 N. Northwest Hwy., Park Ridge, IL 60068-2573. Internet: <http://www.asahq.org>

► American Board of Anesthesiology, 4101 Lake Boone Trail, Suite 510, Raleigh, NC 27607-7506. Internet: <http://www.abanes.org>

► Society of General Internal Medicine, 2501 M St. NW., Suite 575, Washington, DC 20037. Internet: <http://www.sгим.org>

► American Academy of Pediatrics, 141 Northwest Point Blvd., Elk Grove Village, IL 60007-1098. Internet: <http://www.aap.org>

► American Board of Obstetrics and Gynecology, 2915 Vine St., Dallas, TX 75204. Internet: <http://www.abog.org>

► American College of Obstetrics and Gynecologists, 409 12th St. SW., P.O. Box 96920, Washington, DC 20090-6920. Internet: <http://www.acog.org>

► American Psychiatric Association, 1000 Wilson Blvd., Suite 1825, Arlington, VA 22209-3901. Internet: <http://www.psych.org>

► American College of Surgeons, 633 North Saint Clair St., Chicago, IL 60611-3211. Internet: <http://www.facs.org>

Information on Federal scholarships and loans is available from the directors of student financial aid at schools of medicine.

Information on licensing is available from State boards of examiners.