

training. A final examination immediately after residency, or after 1 or 2 years of practice, also is necessary for board certification by the American Board of Medical Specialists (ABMS) or the American Osteopathic Association (AOA). 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 and, whereas education costs have increased, student financial assistance has not. 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 to keep up with medical advances. They also will need to be flexible to respond to the changing demands of a rapidly evolving health care environment.

Job Outlook

Employment of physicians and surgeons will grow about as fast as the average for all occupations through the year 2010 due to continued expansion of the health care industries. The growing and aging population will drive overall growth in the demand for physician services. In addition, new technologies will permit more intensive care: Physicians will be able to do more tests, perform more procedures, and treat conditions previously regarded as untreatable.

Although job prospects may be better for primary care physicians such as general and family practitioners, general pediatricians, and general internists, a substantial number of jobs for specialists will also be created in response to patient demand for access to specialty care.

The number of physicians in training has leveled off and is likely to decrease over the next few years, alleviating the effects of any physician oversupply. However, future physicians may be more likely to work fewer hours, retire earlier, have lower earnings, or have to practice in underserved areas. Opportunities should be 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 integrated healthcare systems.

Earnings

Physicians have among the highest earnings of any occupation. According to the latest data available from the American Medical Association, median income, after expenses, for allopathic physicians was about \$160,000 in 1998. The middle 50 percent earned between \$120,000 and \$240,000 a year. Self-employed physicians—those who own or are part owners of their medical practice—had 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. As shown in table 2, median income of allopathic physicians, after expenses, also varies by specialty.

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,

Table 2. Median net income of M.D.s after expenses, 1998

All physicians	\$160,000
Surgery	240,000
Radiology	230,000
Anesthesiology	210,000
Obstetrics/gynecology	200,000
Emergency medicine	184,000
Pathology	184,000
General internal medicine	140,000
General/Family practice	130,000
Psychiatry	130,000
Pediatrics	126,000

SOURCE: American Medical Association

optometrists, physician assistants, podiatrists, speech-language pathologists and audiologists, 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 20815-7321. 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, Department of Public Relations, 142 East Ontario St., Chicago, IL 60611. Internet: <http://www.aoa-net.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.

Podiatrists

(O*NET 29-1081.00)

Significant Points

- A limited number of job openings for podiatrists is expected because the occupation is small and most podiatrists remain in the occupation until they retire.
- Most podiatrists are solo practitioners, although more are entering partnerships and multispecialty group practices.
- Podiatrists enjoy very high earnings.

Nature of the Work

Americans spend a great deal of time on their feet. As the Nation becomes more active across all age groups, the need for footcare will become increasingly important to maintaining a healthy lifestyle.

The human foot is a complex structure. It contains 26 bones—plus muscles, nerves, ligaments, and blood vessels—and is designed for balance and mobility. The 52 bones in your feet make up about one-fourth of all the bones in your body. Podiatrists, also known as *doctors of podiatric medicine (DPMs)*, diagnose and treat disorders,



A podiatrist adjusts a brace on a patient's leg, ensuring a proper fit.

diseases, and injuries of the foot and lower leg to keep this part of the body working properly.

Podiatrists treat corns, calluses, ingrown toenails, bunions, heel spurs, and arch problems; ankle and foot injuries, deformities and infections; and foot complaints associated with diseases such as diabetes. To treat these problems, podiatrists prescribe drugs, order physical therapy, set fractures, and perform surgery. They also fit corrective inserts called orthotics, design plaster casts and strappings to correct deformities, and design custom-made shoes. Podiatrists may use a force plate to help design the orthotics. Patients walk across a plate connected to a computer that “reads” the patients’ feet, picking up pressure points and weight distribution. From the computer readout, podiatrists order the correct design or recommend treatment.

To diagnose a foot problem, podiatrists also order x rays and laboratory tests. The foot may be the first area to show signs of serious conditions such as arthritis, diabetes, and heart disease. For example, diabetics are prone to foot ulcers and infections due to poor circulation. Podiatrists consult with and refer patients to other health practitioners when they detect symptoms of these disorders.

Most podiatrists have a solo practice, although more are forming group practices with other podiatrists or health practitioners. Some specialize in surgery, orthopedics, primary care, or public health. Besides these board-certified specialties, podiatrists may practice a subspecialty such as sports medicine, pediatrics, dermatology, radiology, geriatrics, or diabetic foot care.

Podiatrists who are in private practice are responsible for running a small business. They may hire employees, order supplies, and keep records, among other tasks. In addition, some educate the community on the benefits of footcare through speaking engagements and advertising.

Working Conditions

Podiatrists usually work in their own offices. They also may spend time visiting patients in nursing homes or performing surgery at a hospital, but usually have fewer after-hours emergencies than other doctors. Those with private practices set their own hours, but may work evenings and weekends to meet the needs of their patients.

Employment

Podiatrists held about 18,000 jobs in 2000. Most podiatrists are solo practitioners, although more are entering partnerships and multispecialty group practices. Others are employed in hospitals, nursing homes, the U.S. Public Health Service, and the U.S. Department of Veterans Affairs.

Training, Other Qualifications, and Advancement

All States and the District of Columbia require a license for the practice of podiatric medicine. Each defines its own licensing requirements. Generally, the applicant must be a graduate of an accredited college of podiatric medicine and pass written and oral examinations. Some States permit applicants to substitute the examination of the National Board of Podiatric Examiners, given in the second and fourth years of podiatric medical college, for part or all of the written State examination. Most States also require completion of a postdoctoral residency program. Many States grant reciprocity to podiatrists who are licensed in another State. Most States require continuing education for licensure renewal.

Prerequisites for admission to a college of podiatric medicine include the completion of at least 90 semester hours of undergraduate study, an acceptable grade point average, and suitable scores on the Medical College Admission Test (MCAT). All require 8 semester hours each of biology, inorganic chemistry, organic chemistry, and physics, and 6 hours of English. The science courses should be those designed for premedical students. Potential podiatric medical students may also be evaluated on the basis of extracurricular and community activities, personal interviews, and letters of recommendation. More than 90 percent of podiatric students have at least a bachelor’s degree.

Colleges of podiatric medicine offer a 4-year program whose core curriculum is similar to that in other schools of medicine. During the first 2 years, students receive classroom instruction in basic sciences, including anatomy, chemistry, pathology, and pharmacology. Third- and fourth-year students have clinical rotations in private practices, hospitals, and clinics. During these rotations, they learn how to take general and podiatric histories, perform routine physical examinations, interpret tests and findings, make diagnoses, and perform therapeutic procedures. Graduates receive the doctor of podiatric medicine (DPM) degree.

Most graduates complete a hospital residency program after receiving a DPM. Residency programs last from 1 to 3 years. Residents receive advanced training in podiatric medicine and surgery and serve clinical rotations in anesthesiology, internal medicine, pathology, radiology, emergency medicine, and orthopedic and general surgery. Residencies lasting more than 1 year provide more extensive training in specialty areas.

There are a number of certifying boards for the podiatric specialties of orthopedics, primary medicine, or surgery. Certification means that the DPM meets higher standards than those required for licensure. Each board requires advanced training, completion of written and oral examinations, and experience as a practicing podiatrist. Most managed care organizations prefer board-certified podiatrists.

People planning a career in podiatry should have scientific aptitude, manual dexterity, interpersonal skills, and good business sense.

Podiatrists may advance to become professors at colleges of podiatric medicine, department chiefs of hospitals, or general health administrators.

Job Outlook

Employment of podiatrists is expected to grow about as fast as the average for all occupations through 2010. More people will turn to podiatrists for footcare as the elderly population grows. The elderly have more years of wear and tear on their feet and legs than most younger people, so they are more prone to foot ailments. Injuries sustained by an increasing number of men and women of all ages leading active lifestyles will also spur demand for podiatric care.

Medicare and most private health insurance programs cover acute medical and surgical foot services, as well as diagnostic x

rays and leg braces. Details of such coverage vary among plans. However, routine foot care—including the removal of corns and calluses—is ordinarily not covered, unless the patient has a systemic condition that has resulted in severe circulatory problems or areas of desensitization in the legs or feet. Like dental services, podiatric care is more dependent on disposable income than other medical services.

Employment of podiatrists would grow even faster were it not for continued emphasis on controlling the costs of specialty healthcare. Insurers will balance the cost of sending patients to podiatrists against the cost and availability of substitute practitioners, such as physicians and physical therapists. Opportunities will be better for board-certified podiatrists, because many managed care organizations require board-certification. Opportunities for newly trained podiatrists will be better in group medical practices, clinics, and health networks than in a traditional solo practice. Establishing a practice will be most difficult in the areas surrounding colleges of podiatric medicine because podiatrists are concentrated in these locations.

Over the next 10 years, members of the “baby boom” generation will begin to retire, creating vacancies. Relatively few job openings from this source are expected, however, because the occupation is small.

Earnings

Median annual earnings of salaried podiatrists were \$107,560 in 2000. The middle 50 percent earned between \$77,440 and \$134,900 a year. According to a survey by *Podiatry Management* magazine, median net income of podiatrists in solo practice, including the self-employed, was \$89,681 in 2000. Those in group practices or partnerships earned median net income of \$96,200 in 2000. Self-employed podiatrists must provide for their own health insurance and retirement.

Related Occupations

Workers in other occupations who apply scientific knowledge to prevent, diagnose, and treat disorders and injuries are chiropractors, dentists, optometrists, physicians and surgeons, and veterinarians.

Sources of Additional Information

For information on podiatric medicine as a career, contact:

► American Podiatric Medical Association, 9312 Old Georgetown Rd., Bethesda, MD 20814-1621. Internet: <http://www.apma.org>

Information on colleges of podiatric medicine, entrance requirements, curriculums, and student financial aid is available from:

► American Association of Colleges of Podiatric Medicine, 1350 Piccard Dr., Suite 322, Rockville, MD 20850-4307. Internet: <http://www.aacpm.org>

Recreational Therapists

(O*NET 29-1125.00)

Significant Points

- Employment growth is expected in assisted living, physical and psychiatric rehabilitation, and services for people with disabilities.
- Opportunities should be best for persons with a bachelor's degree in therapeutic recreation or in recreation with a concentration in therapeutic recreation.

Nature of the Work

Recreational therapists, also referred to as *therapeutic recreation specialists*, provide treatment services and recreation activities to individuals with disabilities, illnesses, or other disabling conditions. Therapists treat and maintain the physical, mental, and emotional well-being of clients using a variety of techniques, including the use of arts and crafts, animals, sports, games, dance and movement, drama, music, and community outings. Therapists help individuals reduce depression, stress, and anxiety. They also help individuals recover basic motor functioning and reasoning abilities, build confidence, and socialize effectively to enable greater independence, as well as to reduce or eliminate the effects of illness or disability. Additionally, they help integrate people with disabilities into the community by helping them use community resources and recreational activities. Recreational therapists should not be confused with recreation and fitness workers, who organize recreational activities primarily for enjoyment. (Recreation and fitness workers are discussed elsewhere in the *Handbook*.)

In acute healthcare settings, such as hospitals and rehabilitation centers, recreational therapists treat and rehabilitate individuals with specific health conditions, usually in conjunction or collaboration with physicians, nurses, psychologists, social workers, and physical and occupational therapists. In long-term and residential care facilities, recreational therapists use leisure activities—especially structured group programs—to improve and maintain general health and well-being. They may also treat clients and provide interventions to prevent further medical problems and secondary complications related to illness and disabilities.

Recreational therapists assess clients, based on information from standardized assessments, observations, medical records, medical staff, family, and clients themselves. They then develop and carry out therapeutic interventions consistent with client needs and interests. For example, clients isolated from others, or with limited social skills, may be encouraged to play games with others, or right-handed persons with right-side paralysis may be instructed to adapt to using their nonaffected left side to throw a ball or swing a racket. Recreational therapists may instruct patients in relaxation techniques to reduce stress and tension, stretching and limbering exercises, proper body mechanics for participation in recreation activities, pacing and energy conservation techniques, and individual as well as team activities. Additionally, therapists observe and document patients' participation, reactions, and progress.



Recreational therapists provide treatment services and recreation activities to individuals with disabilities and illnesses.