

---

## Veterinarians

---

(O\*NET 29-1131.00)

---

### Significant Points

- Veterinarians should have an affinity for animals and the ability to get along with their owners.
- Graduation from an accredited college of veterinary medicine and a State license are required.
- Competition for admission to veterinary school is keen; however, graduates should have excellent job opportunities.
- About 3 out of 4 veterinarians work in private practice.

### Nature of the Work

Veterinarians care for the health of pets, livestock, and animals in zoos, racetracks, and laboratories. Some veterinarians use their skills to protect humans against diseases carried by animals and conduct clinical research on human and animal health problems. Others work in basic research, broadening our knowledge of animals and medical science, and in applied research, developing new ways to use knowledge.

Most veterinarians diagnose animal health problems; vaccinate against diseases, such as distemper and rabies; medicate animals suffering from infections or illnesses; treat and dress wounds; set fractures; perform surgery; and advise owners about animal feeding, behavior, and breeding.

According to the American Medical Veterinary Association, more than 70 percent of veterinarians who work in private medical practices predominately, or exclusively, treat small animals. Small-animal practitioners usually care for companion animals, such as dogs and cats, but also treat birds, reptiles, rabbits, ferrets, and other animals that can be kept as pets. About one-fourth of all veterinarians work in mixed animal practices, where they see pigs, goats, cattle, sheep, and some wild animals in addition to companion animals.

A small number of private-practice veterinarians work exclusively with large animals, mostly horses or cattle; some also care for various kinds of food animals. These veterinarians usually drive to farms or ranches to provide veterinary services for herds or individual animals. Much of this work involves preventive care to maintain the health of the animals. These veterinarians test for and vaccinate against diseases and consult with farm or ranch owners and managers regarding animal production, feeding, and housing issues. They also treat and dress wounds, set fractures, and perform surgery, including cesarean sections on birthing animals. Other veterinarians care for zoo, aquarium, or laboratory animals. Veterinarians of all types euthanize animals when necessary.

Veterinarians who treat animals use medical equipment such as stethoscopes, surgical instruments, and diagnostic equipment, including radiographic and ultrasound equipment. Veterinarians working in research use a full range of sophisticated laboratory equipment.

Veterinarians contribute to human as well as animal health. A number of veterinarians work with physicians and scientists

as they research ways to prevent and treat various human health problems. For example, veterinarians contributed greatly in conquering malaria and yellow fever, solved the mystery of botulism, produced an anticoagulant used to treat some people with heart disease, and defined and developed surgical techniques for humans, such as hip and knee joint replacements and limb and organ transplants. Today, some determine the effects of drug therapies, antibiotics, or new surgical techniques by testing them on animals.

Some veterinarians are involved in food safety and inspection. Veterinarians who are livestock inspectors, for example, check animals for transmissible diseases, such as E. coli, advise owners on the treatment of their animals, and may quarantine animals. Veterinarians who are meat, poultry, or egg product inspectors examine slaughtering and processing plants, check live animals and carcasses for disease, and enforce government regulations regarding food purity and sanitation. More veterinarians are finding opportunities in food security as they ensure that the Nation has abundant and safe food supplies. Veterinarians involved in food security often work along the Nation's borders as animal and plant health inspectors, where they examine imports and exports of animal products to prevent disease here and in foreign countries. Many of these workers are employed by the Department of Homeland Security or the Department of Agriculture's Animal and Plant Health Inspection Service division.

**Work environment.** Veterinarians in private or clinical practice often work long hours in a noisy indoor environment. Sometimes they have to deal with emotional or demanding pet owners. When working with animals that are frightened or in pain, veterinarians risk being bitten, kicked, or scratched.

Veterinarians in large-animal practice spend time driving between their office and farms or ranches. They work outdoors in all kinds of weather and may have to treat animals or perform surgery, under unsanitary conditions.

Veterinarians working in nonclinical areas, such as public health and research, have working conditions similar to those of other professionals in those lines of work. These veterinarians enjoy clean, well-lit offices or laboratories and spend much of their time dealing with people rather than animals.

Veterinarians often work long hours. Those in group practices may take turns being on call for evening, night, or weekend work; solo practitioners may work extended and weekend



*Most veterinarians perform clinical work in private practices on small animals.*

hours, responding to emergencies or squeezing in unexpected appointments.

### **Training, Other Qualifications, and Advancement**

Veterinarians must obtain a Doctor of Veterinary Medicine degree and a State license. There is keen competition for admission to veterinary school.

**Education and training.** Prospective veterinarians must graduate with a Doctor of Veterinary Medicine (D.V.M. or V.M.D.) degree from a 4-year program at an accredited college of veterinary medicine. There are 28 colleges in 26 States that meet accreditation standards set by the Council on Education of the American Veterinary Medical Association (AVMA).

The prerequisites for admission to veterinary programs vary. Many programs do not require a bachelor's degree for entrance, but all require a significant number of credit hours—ranging from 45 to 90 semester hours—at the undergraduate level. However, most of the students admitted have completed an undergraduate program and earned a bachelor's degree. Applicants without a degree face a difficult task gaining admittance.

Preveterinary courses should emphasize the sciences. Veterinary medical colleges typically require applicants to have taken classes in organic and inorganic chemistry, physics, biochemistry, general biology, animal biology, animal nutrition, genetics, vertebrate embryology, cellular biology, microbiology, zoology, and systemic physiology. Some programs require calculus; some require only statistics, college algebra and trigonometry, or pre-calculus. Most veterinary medical colleges also require some courses in English or literature, other humanities, and the social sciences. Increasingly, courses in general business management and career development have become a standard part of the curriculum to teach new graduates how to effectively run a practice.

In addition to satisfying preveterinary course requirements, applicants must submit test scores from the Graduate Record Examination (GRE), the Veterinary College Admission Test (VCAT), or the Medical College Admission Test (MCAT), depending on the preference of the college to which they are applying. Currently, 22 schools require the GRE, 4 require the VCAT, and 2 accept the MCAT.

There is keen competition for admission to veterinary school. The number of accredited veterinary colleges has remained largely the same since 1983, but the number of applicants has risen significantly. Only about 1 in 3 applicants was accepted in 2005.

New graduates with a Doctor of Veterinary Medicine degree may begin to practice veterinary medicine once they receive their license, but many new graduates choose to enter a 1-year internship. Interns receive a small salary but often find that their internship experience leads to better paying opportunities later, relative to those of other veterinarians. Veterinarians who then seek board certification also must complete a 3- to 4-year residency program that provides intensive training in one of the 20 AVMA-recognized veterinary specialties including internal medicine, oncology, pathology, dentistry, nutrition, radiology, surgery, dermatology, anesthesiology, neurology, cardiology, ophthalmology, preventive medicine, and exotic small-animal medicine.

**Licensure.** All States and the District of Columbia require that veterinarians be licensed before they can practice. The only exemptions are for veterinarians working for some Federal agencies and some State governments. Licensing is controlled by the States and is not strictly uniform, although all States require the successful completion of the D.V.M. degree—or equivalent education—and a passing grade on a national board examination, the North American Veterinary Licensing Exam. This 8-hour examination consists of 360 multiple-choice questions covering all aspects of veterinary medicine as well as visual materials designed to test diagnostic skills.

The Educational Commission for Foreign Veterinary Graduates grants certification to individuals trained outside the United States who demonstrate that they meet specified requirements for English language and clinical proficiency. This certification fulfills the educational requirement for licensure in all States.

Most States also require candidates to pass a State jurisprudence examination covering State laws and regulations. Some States do additional testing on clinical competency as well. There are few reciprocal agreements between States, veterinarians who wish to practice in a different State usually must first pass that State's examinations.

**Other qualifications.** When deciding whom to admit, some veterinary medical colleges place heavy consideration on a candidate's veterinary and animal experience. Formal experience, such as work with veterinarians or scientists in clinics, agribusiness, research, or some area of health science, is particularly advantageous. Less formal experience, such as working with animals on a farm or ranch or at a stable or animal shelter, also can be helpful. Students must demonstrate ambition and an eagerness to work with animals.

Prospective veterinarians must have good manual dexterity. They should have an affinity for animals and the ability to get along with their owners, especially pet owners, who usually have strong bonds with their pets. Veterinarians who intend to go into private practice should possess excellent communication and business skills, because they will need to manage their practice and employees successfully and to promote, market, and sell their services.

**Advancement.** Most veterinarians begin as employees in established group practices. Despite the substantial financial investment in equipment, office space, and staff, many veterinarians with experience eventually set up their own practice or purchase an established one.

Newly trained veterinarians can become U.S. Government meat and poultry inspectors, disease-control workers, animal welfare and safety workers, epidemiologists, research assistants, or commissioned officers in the U.S. Public Health Service or various branches of the U.S. Armed Forces. A State license may be required.

Nearly all States have continuing education requirements for licensed veterinarians. Requirements differ by State and may involve attending a class or otherwise demonstrating knowledge of recent medical and veterinary advances.

### **Employment**

Veterinarians held about 62,000 jobs in 2006. According to the American Veterinary Medical Association, about 3 out of 4

## Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-2016	
				Number	Percent
Veterinarians .....	29-1131	62,000	84,000	22,000	35

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

veterinarians were employed in a solo or group practice. Most others were salaried employees of another veterinary practice. Data from the U.S. Bureau of Labor Statistics show that the Federal Government employed about 1,400 civilian veterinarians, chiefly in the U.S. Departments of Agriculture, Health and Human Services, and, increasingly, Homeland Security. Other employers of veterinarians are State and local governments, colleges of veterinary medicine, medical schools, research laboratories, animal food companies, and pharmaceutical companies. A few veterinarians work for zoos, but most veterinarians caring for zoo animals are private practitioners who contract with the zoos to provide services, usually on a part-time basis.

In addition, many veterinarians hold veterinary faculty positions in colleges and universities and are classified as teachers. (See the statement on teachers—postsecondary elsewhere in the *Handbook*.)

### Job Outlook

Employment is expected to increase much faster than average. Excellent job opportunities are expected.

**Employment change.** Employment of veterinarians is expected to increase 35 percent over the 2006-16 decade, much faster than the average for all occupations. Veterinarians usually practice in animal hospitals or clinics and care primarily for companion animals. Recent trends indicate particularly strong interest in cats as pets. Faster growth of the cat population is expected to increase the demand for feline medicine and veterinary services, while demand for veterinary care for dogs should continue to grow at a more modest pace.

Many pet owners are relatively affluent and consider their pets a member of the family. These owners are becoming more aware of the availability of advanced care and are more willing to pay for intensive veterinary care than owners in the past. Furthermore, the number of pet owners purchasing pet insurance is rising, increasing the likelihood that considerable money will be spent on veterinary care.

More pet owners also will take advantage of nontraditional veterinary services, such as cancer treatment and preventive dental care. Modern veterinary services have caught up to human medicine; certain procedures, such as hip replacement, kidney transplants, and blood transfusions, which were once only available for humans, are now available for animals.

Continued support for public health and food and animal safety, national disease control programs, and biomedical research on human health problems will contribute to the demand for veterinarians, although the number of positions in these areas is limited. Homeland security also may provide opportunities for veterinarians involved in efforts to maintain abundant food supplies and minimize animal diseases in the U.S. and in foreign countries.

**Job prospects.** Excellent job opportunities are expected because there are only 28 accredited schools of veterinary medicine in the United States, resulting in a limited number of graduates—about 2,700—each year. However, applicants face keen competition for admission to veterinary school.

New graduates continue to be attracted to companion-animal medicine because they prefer to deal with pets and to live and work near heavily populated areas, where most pet owners live. Employment opportunities are good in cities and suburbs, but even better in rural areas because fewer veterinarians compete to work there.

Beginning veterinarians may take positions requiring evening or weekend work to accommodate the extended hours of operation that many practices are offering. Some veterinarians take salaried positions in retail stores offering veterinary services. Self-employed veterinarians usually have to work hard and long to build a sufficient client base.

The number of jobs for large-animal veterinarians is likely to grow more slowly than jobs for companion-animal veterinarians. Nevertheless, job prospects should be better for veterinarians who specialize in farm animals because of lower earnings in the farm-animal specialty and because many veterinarians do not want to work in rural or isolated areas.

Veterinarians with training in food safety and security, animal health and welfare, and public health and epidemiology should have the best opportunities for a career in the Federal Government.

### Earnings

Median annual earnings of veterinarians were \$71,990 in May 2006. The middle 50 percent earned between \$56,450 and \$94,880. The lowest 10 percent earned less than \$43,530, and the highest 10 percent earned more than \$133,150.

The average annual salary for veterinarians in the Federal Government was \$84,335 in 2007.

According to a survey by the American Veterinary Medical Association, average starting salaries of veterinary medical college graduates in 2006 varied by type of practice as follows:

Large animals, exclusively .....	\$61,029
Small animals, predominantly .....	57,117
Small animals, exclusively .....	56,241
Private clinical practice .....	55,031
Large animals, predominantly .....	53,397
Mixed animals .....	52,254
Equine (horses) .....	40,130

### Related Occupations

Veterinarians prevent, diagnose, and treat diseases, disorders, and injuries in animals. Those who do similar work for humans

include chiropractors, dentists, optometrists, physicians and surgeons, and podiatrists. Veterinarians have extensive training in physical and life sciences, and some do scientific and medical research, as do biological scientists and medical scientists.

Animal care and service workers and veterinary technologists and technicians also work extensively with animals. Like veterinarians, they must have patience and feel comfortable with animals. However, the level of training required for these occupations is substantially less than that needed by veterinarians.

### Sources of Additional Information

For additional information on careers in veterinary medicine, a list of U.S. schools and colleges of veterinary medicine, and accreditation policies, send a letter-size, self-addressed, stamped envelope to:

➤ American Veterinary Medical Association, 1931 N. Meacham Rd., Suite 100, Schaumburg, IL 60173.

Internet: <http://www.avma.org>

For information on veterinary education, contact:

➤ Association of American Veterinary Medical Colleges, 1101 Vermont Ave. NW., Suite 301, Washington, DC 20005.

Internet: <http://www.aavmc.org>

For information on scholarships, grants, and loans, contact the financial aid officer at the veterinary schools to which you wish to apply.

For information on veterinarians working in zoos, see the Occupational Outlook Quarterly article “Wild jobs with wildlife,” online at:

<http://www.bls.gov/opub/ooq/2001/spring/art01.pdf>.

Information on obtaining a veterinary position with the Federal Government is available from the Office of Personnel Management through USAJOBS, the Federal Government’s official employment information system. This resource for locating and applying for job opportunities can be accessed through the Internet at <http://www.usajobs.opm.gov> or through an interactive voice response telephone system at (703) 724-1850 or TDD (978) 461-8404. These numbers are not toll free, and charges may result. For advice on how to find and apply for Federal jobs, see the Occupational Outlook Quarterly article “How to get a job in the Federal Government,” online at:

<http://www.bls.gov/opub/ooq/2004/summer/art01.pdf>