A Beginner's Guide to Become a Professional Veterinarian

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First Edition, 2012

ISBN 978-81-323-4574-9

Published by:
The English Press
4735/22 Prakashdeep Bldg,
Ansari Road, Darya Ganj,
Delhi - 110002
Email: info@wtbooks.com

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Veterinarian

A **veterinarian** (American English) or a **veterinary surgeon** (British English), often shortened to **vet**, is a doctor who treats non-human animals and a practitioner of veterinary medicine. The word comes from the Latin *veterinae* meaning "working animals". "Veterinarian" was first used in print by Thomas Browne in 1646. Many careers are open to those with veterinary degrees (**Doctor of Veterinary Medicine**), D.V.M., VMD (**Veterinaria Medicina Doctoris**), MVB (**Medicina Veterinaria Baccalaureate**), BVS (**Bachelor of Veterinary Surgery**), BVMS (**Bachelor of Veterinary Medicine and Surgery**), BVetMed (**Bachelor of Veterinary Medicine**) or B.V.Sc. & A. H. (**Bachelor of Veterinary Science and Animal Husbandry**). Those working in clinical settings often practice medicine in a limited field such as "companion animal" or pet medicine, which includes small animals such as dog, cat, and pocket pets, production medicine or livestock medicine. Production medicine includes specialties in dairy cattle, beef cattle, swine, sheep, and poultry, equine medicine (e.g., sport, race track, show, rodeo), laboratory animal medicine, reptile medicine, or ratite medicine. Veterinarians may choose to specialize in medical disciplines such as surgery, dermatology or internal medicine, after post-graduate training and certification.

Some veterinarians pursue post-graduate training and enter research careers and have contributed to advances in many human and veterinary medical fields, including pharmacology and epidemiology. Research veterinarians were the first to isolate oncoviruses, *Salmonella* species, *Brucella* species, and various other pathogenic agents. Veterinarians were in the forefront in the effort to suppress malaria and yellow fever in the United States. Veterinarians identified the botulism disease-causing agent, produced an anticoagulant used to treat human heart disease, and developed surgical techniques for humans, such as hip-joint replacement, limb and organ transplants.

Like physicians and animal therapists, veterinarians must make ethical decisions about their patients' care. For example, there is ongoing debate within the profession over the ethics of performing declawing of cats and docking or cropping tails and ears, spaying or neutering dogs, as well as "debarking" dogs, the housing of sows in gestation crates and the housing of egg laying poultry hens in battery cages.

Education and regulation

A veterinarian gives an injection to a goldfish

Veterinarians must first obtain a degree in Veterinary Medicine and a license to practice. The competition for admission into veterinary school is stiff. Individuals who are interested in pursuing a career in veterinary medicine must graduate with either a Doctor of Veterinary Medicine (D.V.M. or V.M.D.) degree from North America; the equivalent degree for veterinarians who graduate in the U.K. or other commonwealth country is a Bachelor of Veterinary Science/Surgery/Medicine (BVS, BVSc, BVetMed or BVMS) degree and the equivalent for veterinary graduates in Ireland is a Medicina Veterinaria Baccalaureate (MVB) degree.

In the United States, there are currently only 28 veterinary schools that meet the accreditation standards set by the Council on Education of the American Veterinary Medical Association (AVMA): Auburn University, Colorado State University, Cornell University, Iowa State University, Kansas State University, Louisiana State University, Michigan State University, Mississippi State University, North Carolina State University, Ohio State University, Oklahoma State University, Oregon State University, Purdue University, Texas A&M University, Tufts University, Tuskegee University, University of California, Davis, University of Florida, University of Georgia, University of Illinois at Urbana-Champaign, University of Minnesota, University of Missouri, University of Pennsylvania, University of Tennessee, University of Wisconsin-Madison, Virginia-

Maryland Regional College of Veterinary Medicine, Washington State University, and Western University of Health Sciences

In Canada, there are currently five veterinary schools that meet the accreditation standards set by the Council on Education of the American Veterinary Medical Association (AVMA) and Canadian Veterinary Medical Association (CVMA): Ontario Veterinary College (OVC), University of Saskatchewan, Université de Montréal, Atlantic Veterinary College, and UCVM (University of Calgary Veterinary Medicine) - University of Calgary.

There are a number of other countries that also have AVMA-accredited institutions such as Australia, Ireland, New Zealand, the United Kingdom and Netherlands.

In West Indies, 3 Veterinary Schools - (RUSVM-Ross University School of Veterinary Medicine) Ross University, St. George's University School of Veterinary Medicine - St. George's University and St. Matthew's University (SMU) are listed by the American Veterinary Medical Association and Canadian Veterinary Medical Association and its graduates qualify for entrance into the Educational Commission for Foreign Veterinary Graduates (ECFVG) or the Program for the Assessment of Veterinary Education Equivalence (PAVE) certification programs.

An alternative to becoming a licensed veterinarian with a doctorate is becoming a veterinary technician. Veterinary technicians are, essentially, veterinary nurses, and are graduates of two or four year college-level programs and are legally qualified to assist veterinarians in many medical procedures. Veterinary assistants are not licensed by most states, but can be well-trained through programs offered in a variety of technical schools.

The prerequisites for admission to veterinary programs vary from school to school with many programs not requiring a bachelor's degree for entrance. Instead they require a number of crhours that range from 45 to 90 semester hours at the undergraduate level. However, most students admitted have completed an undergraduate program and earned a bachelor's degree. So despite the fact that a bachelor's degree is not required, applicants without a degree are at a disadvantage.

Preveterinary courses should emphasize the sciences. Veterinary schools 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. Additionally, some programs require calculus. On the other hand, some require only statistics, college algebra and trigonometry, or precalculus. Most veterinary schools also require some courses in English or literature, other humanities, and the social sciences as a basic background education. Furthermore, courses in general business management and career development are more and more becoming a standard part of the curriculum.

In addition to satisfying pre-veterinary course requirements, applicants must submit test scores from standardized tests such as the Graduate Record Examination (GRE), the

Veterinary College Admission Test (VCAT), or the Medical College Admission Test (MCAT). The decision as to which test should be taken depends solely on the requirement of the college to which the applicant is applying. As of 2007, 22 schools require the GRE, 4 require the VCAT, and 2 accept the MCAT.

Admission to veterinary school is highly competitive, with the number of qualified applicants admitted varying from year to year. This is due in large part to the fact that the number of accredited veterinary colleges has remained largely the same since 1983, but the number of applicants has risen significantly. As a result, only about 1 in 3 applicants were accepted into veterinary school in 2005.

Approximately 80% of admitted students are female. In the early history of veterinary medicine of the USA, most veterinarians were males. However, in the 1990s this ratio reached parity, and now it has been reversed. Most veterinary schools require their applicants to submit applications through the Veterinary Medical College Application Service (VMCAS).

New graduates with a DVM/VMD/BVS/BVSc degree cannot begin to practice veterinary medicine until they have received their license. To be licensed in the United States for example, one must receive a passing grade on a national board examination, the North America Veterinary Licensing Exam. This exam must be completed over the course of eight hours, and consists of 360 multiple-choice questions. This exam covers all aspects of veterinary medicine, as well as visual material designed to test diagnostic skills. Unlike physicians of whom an academic internship is generally required (and 85% eventually board certify in one of a large number of specialties and subspecialties) veterinarians can enter practice after graduation and licensure. The percentage electing further study has increased from 36.8% to 39.9% in 2008. About 25% of those or about 9% of graduates were accepted into traditional academic internships. (2008 -696 graduates accepted a position in advanced study, 89.2% (621) accepted an internship (private practice, 74.5%; academic, 25.3%; and other internship, 0.2%). An additional 6.0% (42) accepted a residency). Approximately 9% of veterinarians eventually board certify in one of 20 specialties.

Interns receive a small salary, but often find that their internship experience leads to better paying opportunities later. Veterinarians who then wish to pursue board certification in medical or surgical specialties, such as internal medicine, oncology, surgery, dermatology, cardiology, neurology, ophthalmology, must complete a 3- to 4-year residency program that provides intensive training. Other specialties, such as epidemiology or toxicology, require a PhD training.

When the application committee decides who gains admittance and who does not, many schools place heavy emphasis and consideration on a candidate's veterinary and animal experience. Formal experience is a particular advantage to the applicant. Formal experience consists of work with veterinarians or scientists in clinics, agribusiness, research, or some area of health science. Less formal experience is also helpful for the

applicant to have, and this includes working with animals on a farm or ranch or at a stable or animal shelter and basic overall animal exposure.

Admittance Comparison

Veterinary school requires extensive preparation, and the likelihood of acceptance is not in favor of the applicant. Nationwide in 2007, approximately 5,750 applicants competed for the 2,650 seats in the 28 accredited US veterinary school. This statistic results in nationwide acceptance rate of 46 percent

WICHE: Veterinary School Financial Alternative

The Professional Student Exchange Program (PSEP) is one of three exchange programs of the Western Interstate Commission for Higher Education (WICHE). Western states, in particular, can place their residents who are pursuing professional, graduate, and undergraduate programs, which are not available to them in their own state, at a financial disadvantage. These exchange programs are designed to give students in these disadvantageous situations another financial option and place them on a more fair and even status. This is done so by providing the outbound students and their families the option to save money through reduced tuition arrangements.

The Western Interstate Commission for Higher Education, based in Boulder, Colorado, works with 15 states to expand educational access and excellence for all of the citizens in the West region. The states that participate in WICHE include: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

If selected to receive support, WICHE exchange students pay reduced levels of tuition. This usually consists of paying resident tuition in public institutions or reduced tuition at private schools. The home state of the students then pays a support fee to the admitting schools to help cover the cost of the students' education. Another advantage that WICHE students receive is that they are given some preference in admission selection process. Each state determines just how many fields and students they are willing and able to support; veterinary medicine is usually one of these fields.

For veterinary medicine, maximum WICHE support is limited to four academic years. The following states are in compliance with the WICHE program and will support students who wish to pursue a DVM Arizona, Hawaii, Montana, Nevada, New Mexico, North Dakota, Utah, and Wyoming. States with additional support arrangements include North Dakota, Utah, and Wyoming. The following veterinary Schools are those who are willing to receive students under support of the WICHE program University of California Davis, Colorado State University, Oregon State University, and Washington State University.

Educational Requirements in Various Countries

The educational requirements for the veterinarian vary with each country. Typically, it takes from four years to eight years of education after graduating from secondary school. Some countries grant the equivalent of a bachelor's degree - in India, the Bachelor of Veterinary Science and Animal Husbandry (BVSc and AH). Others grant a doctoral degree - in the United States and Canada, the Doctor of Veterinary Medicine (DVM or VMD). In the United States, holders of either degrees are allowed to practice as veterinarians if they succeed in passing national and state board examinations, and after passing three veterinary licensing exams - the Basic and Clinical Sciences Examination (BCSE), the National Board of Veterinary Medical Examiners' North American Veterinary Licensing Examination (NAVLE), and the Clinical Proficiency Examination (CPE), and a state veterinary law exam, foreign-educated veterinarians may practice as a general practice veterinarian.

Applicants must have earned or be close to earning bachelor's degrees before applying and must take the Veterinary College Admission Test (VCAT), Graduate Record Exam (GRE), or Medical College Admission Test (MCAT). The chances of admission in one state might be significantly different from those in another state, depending on the number of in-state applicants and the number of places available.

Options are available for students to apply to overseas schools, but the graduates of such schools are often not regarded as highly as U.S. students who have earned a bachelor's degree and a graduate veterinary school degree in the United States.

In the United States, the average veterinary medicine student has an undergraduate GPA of 3.5 and a GRE score of approximately 1350. In the U.S. and Canada, veterinary school lasts four years (again, normally after the completion of an undergraduate degree), with at least one year being dedicated to clinical rotations. In the U.S., one can enter veterinary school (DVM) after completing the undergraduate pre-veterinary requirements in as little as two years, but most veterinary school applicants have completed a bachelor's degree before entry into a professional program.

In many other countries, the veterinary degree is granted upon completion of a bachelor's degree in veterinary medicine and is not usually a post-graduate program as in the U.S. and Canada. After completion of the national board examinations, some newly-accredited veterinarians choose to pursue residencies or internships in certain (usually more competitive) fields. The entry requirement for residency is 1 year of internship or 2 years of clinical experience plus research publication. The admission in residency program is highly competitive. Most of the veterinarians work as general practice veterinarian, only few become Veterinary Specialists.

In India, the Veterinary medical degree is known as **Bachelor of Veterinary Sciences and Animal Husbandry** (B.V.Sc. and A.H.). The program lasts for a period of five years with 4.5 years of course work and six months of clinical and farm training internships. Admission to the Veterinary Colleges are through the tests conducted by the Agricultural

and Veterinary Universities in the respective states or through a National Level Joint Entrance Test. Admission into BVSc & AH program in India is competitive due to fewer Veterinary Colleges and seats.

In Pakistan UVAS(University of Veterinary and Animal Sciences-LAHORE) takes its own test for admission in M.Phil degree after DVM. Also interviews are held for the candidate with his choice of department which he is applying to join.

Salary

The mean salary for new graduates in 2010 was US$48,674 including nearly 50% going on to advanced study programs. Those not continuing their studies made US$67,359 at first. The average income for private practice rose from $105,510 in 2005 to $115,447 in 2007. These increased values exceed those of public practice including uniformed services and government . According to a survey done by the American Veterinary Medical Association, the average starting salaries of new graduates in 2006 depended upon their respective fields of practice. The Bureau of Labor Statistics in the Occupational Outlook Handbook, 2008-2009 Edition recorded the following:

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

Vets in the UK tend to make less than those in the US with average new graduate wages starting at an average of £25000.

Work

Veterinarians may:

- Diagnose animal health problems, and perform diagnostic tests such as X-ray, EKG, ultrasound, blood tests, stool tests, and urinalysis.
- Vaccinates against diseases, such as distemper and rabies.
- Medicate animals suffering from infections or illnesses.
- Treat and dress wounds.
- Set fractures.
- Perform minor to complex surgery, depending on training.
- Advise owners about animal feeding, behavior, and breeding.
- Euthanize animals when necessary.
- Provide preventive care to maintain the health of food animals.

- Test for and vaccinates against diseases.
- Dental work

According to the American Veterinary Medical Association, about three-quarters of veterinarians were employed in either an individual or group practice. The remainder were employees in other settings, including colleges of veterinary medicine, medical schools, research laboratories, animal food companies, and pharmaceutical companies. The Bureau of Labor Statistics reports that around 1,400 civilian veterinarians are employed by the United States federal government, mainly in the Department of Agriculture, Department of Health and Human Services, and Department of Homeland Security. State and local governments also employ veterinarians.

Skills required of a general practice veterinarian

In many respects a veterinarian is similar to a pediatrician. Animals cannot talk like human beings, and much of the clinical history is obtained from the owner or client as a pediatrician would obtain the medical history from a child's parents. Excellent people skills, and communication skills are required. Veterinarians, like other physicians, require well-functioning physical and sensory faculties in order to diagnose and treat their patients. They also make use of diagnostic tests like x-ray, C.T., M.R.I., blood work, urinalysis, and fecal exams to diagnose patients. Veterinarians are well trained in laboratory medicine and parasitology.

The general practice veterinarian spends one third to one half of his or her time in surgery. Animal neutering operations are done in most veterinarians' offices. Many veterinarians also perform orthopedic procedures, bone setting, dentistry, and trauma surgery. Surgery requires good hand and eye coordination, and fine motor skills.

Focuses of practice

Many areas of focus exist for veterinary practices. These include:

- Exotic animal veterinarian - Generally considered to include reptiles, exotic birds such as parrots and cockatoos, and small mammals such as ferrets, rabbits, chinchillas, and degus.
- Conservation medicine - The study of the relationship between animal and human health and environmental conditions.
- Small animal practice - Usually dogs, cats, and other companion animals/household pets such as hamsters and gerbils. Some practices are canine-only or feline-only practices.
- Laboratory animal practice - Some veterinarians work in a university or industrial laboratory and are responsible for the care and treatment of laboratory animals of any species (often involving bovines, porcine species, felines, canines, rodents, and even exotic animals. Their responsibility is not only for the health and well being of the animals, but also for enforcing humane and ethical treatment of the animals in the facility.
- Large animal practice - Usually referring to veterinarians that work with, variously, livestock and other large farm animals, as well as equine species and large reptiles.
- Equine medicine - Some veterinarians are specialists in equine medicine. Horses are different in anatomy, physiology, pathology, pharmacology, and husbandry to other domestic species. Specialization in equine veterinary practice is something that is normally developed after qualification, even if students do have some interest before graduation.
- Food animal medicine - Some veterinarians deal exclusively or primary with animals raised for food (such as meat, milk, and eggs). Livestock practitioners may deal with ovine (sheep), bovine (cattle) and porcine (swine) species; such veterinarians deal with management of herds, nutrition, reproduction, and minor field surgery. Dairy medicine practice focuses on dairy animals. Poultry medicine practice focuses on the health of flocks of poultry; the field often involves extensive training in pathology, epidemiology, and nutrition of birds. The veterinarian treats the flock and not the individual animals.
- Food safety practice - Veterinarians are employed by both the food industry and government agencies to advise on and monitor the handling, preparation, and storage of food in ways that prevent foodborne illness.
- Wildlife medicine - A relatively recent branch of veterinary medicine, focusing on wildlife. Wildlife medicine veterinarians may work with zoologists and conservation medicine practitioners and may also be called out to treat marine species such as sea otters, dolphins, or whales after a natural disaster or oil spill.

Veterinary specialties

As opposed to human medicine, general practice veterinarians greatly out-number veterinary specialists. Most veterinary specialists work at the veterinary schools, or at a referral center in large cities. As opposed to human medicine, where each organ system has its own medical and surgical specialties, veterinarians often combine both the surgical and medical aspect of an organ system into one field. The specialties in veterinary medicine often encompass several medical and surgical specialties that are found in human medicine.

Veterinary specialties are accredited in North America by the AVMA through the American Board of Veterinary Specialties. In Europe, specialties are accredited through the European Board of Veterinary Specialisation. In Australia, specialties are recognized by the Australian Veterinary Boards Council. While some veterinarians may have areas of interest outside of recognized specialties, they are not legally specialists.

- Anaesthesiology - A specialty limited to teaching in hospitals and schools. Most veterinarians practice anesthesiology in their own office. In North America, anesthesiologists are certified through the American College of Veterinary Anesthesia.
- Animal behavior - A relatively new specialty, with an increased interest in modulating abnormal animal behavior. In North America, behaviorists are certified through the American College of Veterinary Behaviorists.
- Cardiology and cardiothoracic surgery - Manages cardiac and conductance disorders; also performs cardiothoracic surgery for the treatment of congenital and acquired heart disease. In North America, cardiologists are certified through the American College of Internal Medicine as a subspecialty.
- Dentistry - Relates to prevention and treatment of dental disease. In North America, dentists are certified through the American Veterinary Dental College.
- Dermatology and dermatopathology - Relates to the skin. Veterinary dermatologists diagnose and treat skin disease. Dermatology in animals encompasses much of the field of allergy and immunology. In North America, dermatologists are certified through the American College of Veterinary Dermatology.
- Emergency Medicine and Critical Care - Also cover the field of emergency or trauma surgery. The veterinarian is trained in medicine, surgery, and critical care of the severely injured or ill animal. In North America, criticalists are certified through the American College of Veterinary Emergency and Critical Care.
- Epidemiology and public health - Focus on infectious disease in animals (including zoonotic disease, infectious diseases in animals which are transmitted (in some instances, by a vector) to humans. In North America, epidemiolologists are certified through the American College of Veterinary Preventive Medicine.
- Internal medicine - As opposed to human medicine, where an internist is often considered a primary care physician of adults; a veterinary internal medicine specialist, is a specialist. The specialty in the United States requires 3 years of residency training. They are trained to manage complex medical conditions, and

often work at teaching universities and hospitals. In North America, internists are certified through the American College of Internal Medicine as a subspecialty. Internists subspecialize in either small animal or large animal medicine.

- Microbiology Work in the diagnosis and control of infectious diseases in animals. Specialists in this field often work in industry, the regulatory agencies, and teaching institutions. In North America, micriobiologists are certified through the American College of Veterinary Microbiologists. There are subspecialties in Virology, Bacteriology/Mycology, and Immunology.
- Neurology and Neurologic Surgery - Veterinary neurologists are both surgeons and neurologists in practice. This is different than in human medicine, where neurologists are the medical side of the specialty, and neurosurgeon or orthopedic surgeons focus on the surgical side. In North America, neurologists are certified through the American College of Internal Medicine as a subspecialty.
- Nutrition - An important food animal medicine, and herd medicine. Specialists in this area include veterinarians and animal scientists. Most large animal veterinarians are also excellent nutritionists. Nutritionists also work in the pet food industry in quality assurance and research. In North America, nutritionists are certified through the American College of Veterinary Nutrition.
- Oncology - Covers the diagnosis and management of malignancies in animals. As animals are considered to be a part of the family, curative and pallative care is often demanded when malignancies develop. In North America, oncologists are certified through the American College of Internal Medicine as a subspecialty.
- Ophthalmology - Focuses on eyes, the diagnosis of eye diseases, and surgery of the eye and eyelid. In North America, veterinary ophthalmologists are certified by the American College of Veterinary Opthalmology.
- Pharmacology - The study of drug action. As animals metabolize drugs in many different ways, veterinary clinical pharmacologists are important in the study of drug use in animals. In North America, veterinary pharmacologists are certified by the American College of Veterinary Clinical Pharmacology.
- Parasitology - Focuses on study of parasites such as whipworms, fleas, and ticks. While almost all veterinarians encounter parasites in some patients, parasitology specialists are usually found in teaching hospitals and universities. In Australia, parasitologists are recognized by the Fellowship of the Australian College of Veterinary Scientists. There is not yet a parasitology specialty college in North America, although development of a subspecialty in the American College of Veterinary Microbiologists is underway.
- Anatomic Pathology and Clincal Pathology - A broad field covering multiple species, organ systems, and domestic and foreign animal diseases. The veterinary pathologists perform necropsies (autopsies), collect specimens, and read pathological slides. They assist clinicians in the diagnosis of illnesses and seek causes of deaths in animals. In North America, veterinary pathologists are certified by the American College of Veterinary Pathologists, and subspecialize in either anatomic pathology or clinical pathology.
- Radiology and radiation oncology - Interpretation of imaging modalities, including X-rays, magnetic resonance imaging (MRI), computed tomography (CT scans), ultrasounds, echocardiograms, and Doppler devices; administration of

radiation treatment for malignancies and endocrine diseases. In North America, veterinary radiologists are certified by the American College of Veterinary Radiology.

- Surgery - In North America, surgeons are certified by the American College of Veterinary Surgeons. Surgeons subspecialize in either small animal or large animal surgery.
- Theriogenology involves the study and treatment of reproductive disorders. Reproduction is an economically important aspect of bovine, porcine, ovine, and equine practices. In North America, theriogenologists are certified by the American College of Theriogenology.
- Zoological medicine - The treatment and care of captive zoo animals, free ranging wildlife species, aquatic animals, birds, reptiles and amphibians, and non-domestic companion animals. In North America, zoological medicine specialists are certified by the American College of Zoological Medicine.

Workplace

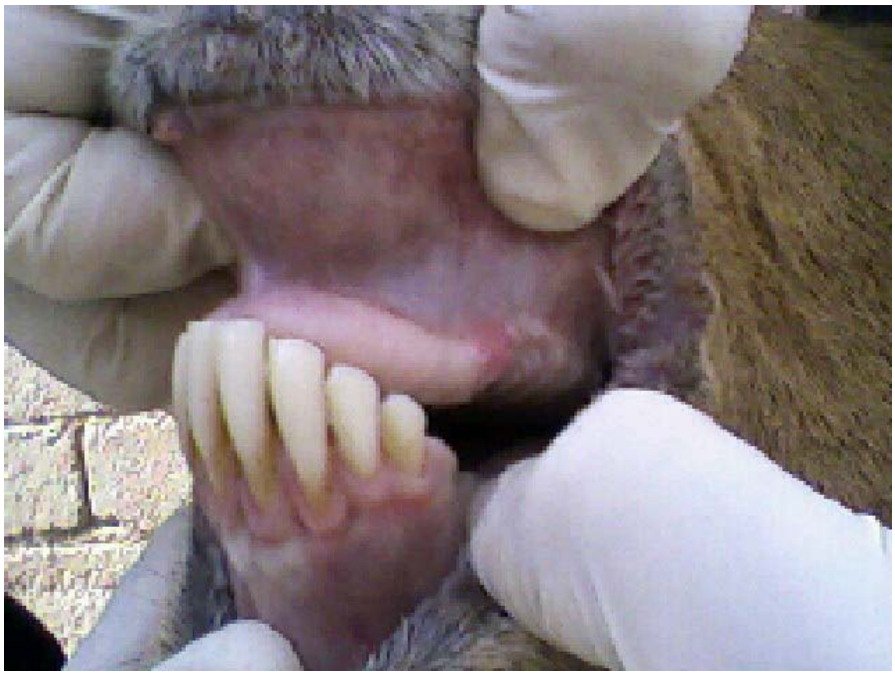
Small animal veterinarians typically work in veterinary clinics or veterinary hospitals, or both. Large animal veterinarians often spend more time traveling to see their patients at the primary facilities which house them (zoos, farms, etc.).

Criticisms

Concerns about the role of veterinary surgeons in helping health threats survive and spread have been raised by several commentators, particularly with respect to pedigree dogs. Koharik Arman (2007) reached the following conclusion for example: "Veterinarians also bear some responsibility for the welfare situation of purebred dogs. In fact, the veterinary profession has facilitated the evolution of purebred dogs. ‘Breeds’ that would not normally be sustainable are propagated by the compliance of veterinarians to breeder wishes.” A finding that was echoed by Sir Patrick Bateson in his Independent Review of Dog Breeding following the broadcast of the BBC documentary Pedigree Dogs Exposed: "Its only the ready availability of modern veterinary medicine that has permitted some conditions…to become widespread.”

Chapter- 2

How to Become a Veterinarian



Veterinarian examines the mouth of a sheep

If you love animals, have the dedication to work for free or for little pay just to get experience for several years before college even starts, work hard for up to 8 years in college or more to learn the basics, to just get your license, and then continue to learn and work hard throughout your career--then congratulations, you might just make it as a veterinarian! Here are a few ideas to help you on your way.

Steps

1. **Get some work experience**. Not only will this help you to decide if this career path is for you, but it will also show your dedication to the school(s) you eventually decided to apply to. There are vet students who have worked every Saturday morning for free for three and a half years. It's really important to get a good mix of practice and farm work as well.

2. **Learn while you are on your placements**. If you watch a puppy getting vaccinated, ask what it is being vaccinated against. If you castrate a lamb, ask the farmer why. These are some of the questions that you could be asked in interviews, and some knowledge of the profession is required before you begin.
3. **Study hard in school and college, graduate and get in to vet school**. Because this field is very competitive, veterinary schools can afford to be picky, so you will need top grades to get in. If you can manage this as well as the work experience, it shows not only dedication, but also ability. During your time at vet school you will need to do extra work experience, but this can't be an excuse for low grades.
4. **Get a great score on your GRE**. You may need to take a prep course to improve your score. But being a vet is more than just tests and scores and GREs. It's about how well you work with the animal patients and the pet owners. To do this, you may want to work with groups such as the RSPCA or with a college professor. Working with a pet owner who has a dying animal may help you understand vet training better.
5. **Get involved in research at your undergraduate college**. Veterinary schools thrive on the grants associated with research, and will be much more interested in you if you are likely to stay on afterwards and do research.
6. **Try to get in touch with people through your school in the years/grades above you who have gone on to vet school**. Often their experiences with interviews can help you, and they may know of local work experience placements.
7. **Keep up to date with vet related issues in the news and press, e**.g BSE, bird flu, foot and mouth disease to name a few.
8. **Search to learn the latest info**. You will need to know a lot to be a vet. Do you know what causes BSE? Do you know what BSE stands for? Do you know what causes a tumor or how to get rid of it? Look up these diseases and the cures for them. Take more notes on any causes and anything else interesting you may find.
9. **Work with an experienced vet and do simple tasks for them**. Another thing you could do is find any new disease scientists have just found, and find causes, cures and symptoms and also which animal(s) are affected the most.

Tips

- Be open minded, many people start vet school with a passion for dogs, and leave as horse vets. 5-6 years in university is a long time, and you will grow and change.
- Have a back up plan. Sadly not everyone who wants to be a vet will make it. There are still lots of careers working with animals or in animal health, such as veterinary nurses, veterinary scientists, and pathologists.
- As a veterinarian, you will not only be working with animals, but also with people (ie, pet owners, and your coworkers). So if you have poor people skills, try to get a job as a receptionist at a vet clinic, or do volunteer work in your local community. Not only will it get you experience hours, but you will have better communication skills for your vet school. interview, as well as future jobs.

- Never be scared to help people with their animals and tell them what you think--even if it is bad news.
- Learn not to be scared of blood or open wounds. There's going to be a lot of it.

Warnings

- Be careful while on farms and especially in a vet practice. Even experienced vets are sometimes injured or killed by a falling animal (so that you can't breathe) or you can get broken bones and head wounds. Also, being kicked is equally deadly.
- Animals are much more likely to injure you if they are stressed or in pain (any animal in a vet practice may be unpredictable and dangerous).

How to Communicate with Animals

Avoid those frantic chases before visits to the vet, manage multiple cats (or dogs) and foster cuddle time.

Steps

1. **Begin by seeing your pet as a living being**. Say to yourself: that creature has a skeleton, a beating heart, eyes, and it learns how to interact with you by how you interact with it. Remember most animals, your pets included may not wish to cuddle. Many animals (for example birds) do not naturally show affection in this way and it may not have the same meaning for them as it does for you. Also some species of parrots have been known react violently to cuddling. Macaws in particular have been known to gouge out eyes.
2. **Notice their character traits**. This is especially important with multiple animals. Most of the time they have very different ways, likes and dislikes, styles, and they respond differently to requests and affections.
3. **Put aside any silly supernatural notions and realize that you genuinely want to actively hear from them**. You won't start to hear them speak, but they are more mentally present and responsive than sometimes assumed.
4. **Stay calm and level with the animals as though they can really hear what you're saying (because, in some way they can**!) when it's time to go to the vet or administer some meds. They know something is up, and nervous aloof energy increases the chances of mayhem.
    - Contrary to common belief, cats can be trained. It is easier the younger that the relationship begins. A combination of positive reinforcement and non-physical messages of disappointment and/or urgency when the act is not carried out will work best. Be consistent with the signals you use to identify and reward a request. That includes key words and phrases as well as visual cues. Most of the time this practice brings the owner and animal into a closer, more mutually respectful relationship and eliminates some of the minuses to having an animal. Keep this in mind when considering giving a pet to an elder or family with small children.

Tips

- Sometimes, it is better to forget the baby talk and reconsider the character of the animal. Sometimes, when used as a tool of persuasion, it works to the contrary and deters the animal from following your request.
- Also, many animals feel safer and calmer in cozy spaces like a carrier or even a laundry basket with some blankets (for an inexpensive quick-fix) when traveling or dealing with a crowded house.
- No matter what it looks like when you leave your pet, they really have a good time at the vet. I know from experience after it leaves its owner the dog perks up and is fine. They seem extra excited when you get them back and it seems like they had a horrible time but they probably didn't.

Warnings

- Of course, these practices may not work with all animals and it is prudent not to attempt such close-proximity activity with wild animals.

Chapter- 3

How to Know if a Cat Is Sick

Even with balanced nutrition and a good amount of love and attention, cats can still get sick. By spotting the symptoms, you can try to prevent or cure your cat's illness with the proper medical care.

Steps

1. **Keep an eye out for fleas**. Watch your cat if they show symptoms of having fleas such as becoming particularly itchy, or if you notice bites on human members in your household. To check for fleas, groom them over a sheet of white paper. Look for a few fleas caught in the comb's teeth or flea dirt on the paper. Flea dirt is actually excrement of undigested cat blood, and appears black and comma shaped. If you place it on damp cotton wool, the flea dirt dissolves into bloody streaks. Many commercial products are available both to kill adult fleas and remove fleas from the environment. Ask your vet for specific recommendations.
2. **Prevent hairballs by grooming your cat to remove excess hair**. Hairballs are formed either at the back of the throat or in the small intestines. There are many products already on the market to prevent hairball build-up such as oils, treats, and diets. If your cat vomits frequently and the problem isn't resolved with regular brushing, you should consult with the veterinarian to be certain that a more serious problem is not the cause.
3. **Watch for symptoms of an overactive thyroid such as increased appetite or thirst, unexplained weight loss (particularly muscle mass), nervousness or irritability, frequent vomiting, lethargy and weakness, diarrhea, or a coat**

that looks ungroomed. An overactive thyroid, or hyperthyroidism, is a condition where the thyroid gland becomes enlarged and produces excess amount of thyroid hormone. The condition is often provoked by a benign tumor on one or both lobes of the thyroid gland. The good news is that thyroid tumors have only a 2-5% chance of malignancy. A cat with the condition may not present every symptom, but the presence of two or more should prompt a visit to the veterinarian's office.

4. **Know the symptoms of feline diabetes, which include vomiting, dehydration, weakness and loss of appetite, increased thirst and urination, weight loss, breathing abnormalities, and an unkempt-looking coat**. Feline diabetes can affect cats of any age, but is most common in older, obese cats—-typically males. If your cat has any or several of these symptoms, take him to the vet. The vet will test for blood sugar levels and sugar levels in the urine.
5. **Be mindful of your cat's litter box habits**. If your cat starts meowing a lot and jumping in the sinks or bathtubs or has any other unusual behavior, be sure to have them checked by a vet. Inappropriate or difficult and frequent urination, appetite loss, listlessness, blood in the urine, or frequent licking of the genitals may indicate feline lower urinary tract disease (FLUTD). This is a painful inflammation of the lower urinary tract that has the potential to be fatal very quickly (sometimes within 24 hours). Feline lower urinary tract disease has a number of causes, from decreased water intake and urine retention to viruses, bacteria, or diet. (Diet is especially important to male cats who have been neutered as some dry foods are prone to cause urinary infections). As with any serious condition that could threaten your cat's life, if you see these symptoms, call or take it to the vet immediately. It's better to be safe than sorry.
6. **Watch for excessive discharge at the eyes and nose**. If your cat constantly appears to be 'crying', s/he may have an allergy or sinus infection. This can also be a symptom of the onset of kidney failure, along with excessive drinking/urination, lethargy, and a lackluster coat. Have your cat checked by a veterinarian if s/he exhibits these symptoms. Kidney failure can be fatal and is common in older cats.

Tips

- Watch your cat carefully for any change in their normal activities. Sometimes unusual changes are just normal, especially if they have been frightened or had their food or litter changed to a different brand. If in doubt, have them checked out by the vet. Waiting more than three days can be dangerous.
- When brushing your cat, take a moment to feel along the limbs for any unusual lumps or bumps. These may be developing cancerous tumors and need to be checked out by your vet.

Warnings

- The most common flea, the cat flea (Ctenocephalides felis) may carry the Dipylidium caninum tapeworm larvae. If cats eat fleas during grooming, they may become infested with these tapeworms. Fleas also could transmit other infectious

agents. If kittens are exposed to fleas, they may become anemic. Cats can also develop an allergy to flea bites, resulting in excessive scratching or possibly skin disease. Finally, humans are also susceptible to itchy flea bites, usually on the ankles.

- If your cat does not eat/drink anything for 2 days, bring them to the vet immediately for an examination.
- The most common symptoms of vitamin and mineral deficiencies in cats are lethargy and apathy. If your cat is unusually tired and loses interest in exercise and regular daily activities, this could be a sign that your pet is unhealthy, possibly undernourished.

How to Give a Cat a Pill

Getting a pet cat to eat a pill can be nearly impossible. Here are some tricks suggested by vets to make it easier.

Steps

Crushing the Pill Method

1. **Crush the pill into a very fine powder**.
2. **Mix it with some canned food (for best effect try a fish flavor)**.

3. **Be SURE to check with your vet first**. Some pills are intended to digested slowly, and the crushing method would give your cat a too concentrated dose too quickly.

Hiding the Pill Method

1. **Hide the pill in a bite of a special food that the cat rarely or never gets**. Be sure to ask the vet about incompatible foods before doing this. Cream cheese works best, but you could also try baby food. Liverwurst works well with cats that like it.
2. **Acclimate the cat to the treat by giving it some of the food without the pill**.
3. **Let the cat eat the food with the pill in it out of their dish or from your finger**. Because the cat is excited about the treat, the cat usually never knows they ate a pill.
4. **If the cat won't take the pill whole try crushing**. Make sure to ask the vet whether the pill is safe to be given when it's crushed BEFORE trying this.
    - Place the pill on a metal spoon
    - Place another metal spoon on top of the pill and press down.
    - Crush the pill and leave the powder in a neat pile inside of the spoon.
    - There are also pill splitters and pill crushers available commercially at stores that carry pet supplies.
    - Mix the powder with a small amount of cat food, treat or other liquid. The liquid from a can of wet cat food works well.

Wrap the Cat Method

1. **Fill a syringe (without the needle) with a few milliliters of water**. Have that ready
2. **Wrap your cat carefully, like a burrito, in a towel to provide a sense of security and keep you from getting scratched**.
3. **Open the cat's jaws by pressing thumb and forefinger on the jaw hinges**.
4. **Hold the head back with one hand and throw the fragment of pill down the throat with the other**.
5. **Point the end of the syringe into the back of the cat's throat and inject a bit of water**.
    - Kittens are not strong enough to object and will grow used to it easily.
6. **Hold the cat's mouth closed and stroke or massage its neck (this encourages the cat to swallow) until you are sure the pill went down (if you were able to get the fragment down the throat deeply enough, the cat will swallow the pill immediately)**. You can also blow lightly into the cat's nose after closing their mouth - this action also forces them to swallow.
7. **It is almost certain the cat has swallowed the pill if he/she starts to lick its' nose**.

On a Chair Method

1. **Get a chair with a backrest**.
2. **Fill a syringe (without the needle) with a few milliliters of water**. Have that ready
3. **Pick your cat up, then and scruff your cat (i**.e. gently grip the skin on the back of the neck).
4. **Facing the back of the chair (with the seat facing away from you), lower your cat until her front paws can rest on the top of the backrest of the chair while keeping her scruffed**.
5. **Make sure your cat's hind legs are dangling and not resting on the chair**.
6. **Due to the angle your cat is dangling while being scruffed (with front paws resting on the top of the backrest), she should be looking up with her mouth slightly open**.
7. **Take the pill and push it down her throat, behind her tongue**. Make sure to use sufficient force, as the kitty may not accept it. If you are touchig anything inside the cat, you slighty too far, or depending on weight, not far enough. The angle your cat is at, she will automatically swallow the pill. This step will take some practice, but after a few times, you should have it down.
8. **Point the end of the syringe into the back of the cat's throat and inject a bit of water**.

Tips

- Do not forget to reward your cat!
- Always give water immediately after pilling a cat. Not only will this guarantee that the cat has swallowed the pill, it will save the cat a lot of pain and discomfort.
- Train a cat from the time it is a kitten to take pills. If a little fragment of a Kitzyme tablet (or similar) is given as a pill, then followed-up by the real thing or a treat, the cat becomes used to pills.
- Coat the pill in a small amount of margarine -- this covers the taste of the pill and helps it to slip down without any problems.
- Always praise your cat and give lots of hugs/kisses afterwards. Treats afterwards help too.
- Putting the pill in cream cheese is the easiest, because the pill stays in the cheese. Most cats love cream cheese but aren't allowed to have it. Once the cat gets the cream cheese in his or her mouth, it's sticky and makes the pills difficult to spit out.
- Tuna also works well, as cats love tuna. Bits of chicken or beef also work well.
- Cutting a slit in some cheese and inserting the pill works
- Some cats love peanut butter. Like cream cheese, it is sticky and hard to get out of their mouths. Be sure to use only a very small amount because too much peanut butter can choke.
- Vets also will give you a free narrow plastic and rubber pill dispenser to put the pill in the back of the cat's mouth. It makes getting the pill in easier if the cat refuses to eat.

- Vets can also provide empty (and needle-less) syringes in which you can administer crushed up pills in a small amount (.5 ml) of water.
- If any of these didn't work, mix the pill with cream cheese and put the mixture on the cat's front leg. He will instantly lick it and therefore consume his medication.
- If there are other cats around, make sure they are not allowed to eat this treat before, during, or after the intended cat. You may need a separate bowl of baby food for the other cats so no rivalries arise.
- If you are putting the pill down its mouth instead of feeding it to him/her watch the cat after you put the pill in its mouth, occasionally the cat will spit it back up.
- know it is absolutely key with difficult cats to have the head cocked back so it's nose is straight to the sky and the throat is straight up vertically; it creates a compulsory reaction, opposite of a gag reflex, to swallow. it's tricky at first, but you get the hang of it after 1 or 2 times. tightly but gently hold it's head as best you can in this position while prying open it's mouth, and until it's in the right position and the pill goes down. otherwise they keep their throat shut tight, and lodge the pill in their mouths, and shake it out when you let go. again, coating it with a soft food and the butter does you huge favors in sliding right down vs catching on a cat's rough tongue.
- For any more questions please consult your local veterinarian.

Warnings

- You should never dry-pill a cat. Erosive esophagitis can be extremely painful and damaging. ALWAYS give water immediately after giving the cat a pill. The last two steps are not necessary if you give water after pilling a cat.
- Know how to properly scruff a cat. Improper scruffage will result in choking your cat. If your cat is not used to being scruffed (i.e. your cat is not a kitten any more and you never did it while it was still a kitten/acquired it later), it may become scared and panic or regard the scruffing as a type of punishment. You don't want that, because your cat will lose its trust in you. Only introduce the habit of scruffing your cat if it is still a kitten and can associate scruffing with a sense of "home" or "being protected".
- Don't crush pills that are designed to be 'time release'.
- Be careful to avoid getting the medicine down their wind pipe instead of down to their stomachs. When using a syringe, squirting only half the solution at one time helps.
- Watch out that your cat doesn't just lick the cream cheese or treat from around the pill and leave the pill on the floor, or spit it out later.
- MANY cats are lactose intolerant and giving them cream cheese/regular cheese can make them sick.
- Some cats will vomit up a pill no matter what method you use even if the vet uses a special device to inject the pill directly into the stomach. If this is the case with your cat, talk to your Vet about a liquid alternative or another brand of medicine that isn't time release and can be crushed etc.

Chapter- 4

How to Detect Diabetes in Dogs

There is no cure for diabetes. But the earlier you detect diabetes in dogs, the more effective the treatment will be. This will tell you how to detect diabetes in dogs.

Steps

1. **Know if your dog is especially susceptible to diabetes**. Keep in mind, however, that dogs can still get diabetes even if they don't fall into one of these high-risk groups.
    - Canine diabetes can start with obesity. This is not always the case; with some breeds it can be genetic. More dogs with diabetes are obese. The best way to check for obesity is by checking your dog's rib cage. Run your

hand along your dog's rib cage and feel for the ribs. You should be able to feel the ribs easily. If not, your dog may be obese.
    - Diabetes usually happens in dogs around the age of 7 to 9.
    - Bigger dogs are more likely to get dog diabetes than smaller breeds.
    - Female dogs are twice as likely to get diabetes than male dogs.
2. **Look for the main signs of canine diabetes**: excessive drinking, excessive urination, and weight loss. Many times pet owners will notice the dog starts urinating in the house or in their bed. **Do not** limit the dog's water intake. This is very crucial, because the dog will need all the water it needs. This will prevent dehydration.
    - Additional signs of diabetes include lethargy and sudden blindness.
    - The diabetec dog will have a normal or increased appetite.
3. **Visit your vet immediately if you notice these symptoms**. Diabetes that isn't treated can lead to further health complications. The vet will want to perform blood tests to see how high the levels of glucose are in the bloodstream and to make sure no other organs have been affected by diabetes. They will also want to perform a urinalysis to check kidney function and monitor for urinary tract infections, which are common in diabetics.

Tips

- There really is no cure for diabetes yet. Sometimes it lasts a lifetime. If it does, the best you can do is give the dog its medication and to not limit the water.

Warnings

- Although you shouldn't treat the diabetes, itself, like an emergency, don't wait too long before checking with your vet.

How to Care for a Diabetic Dog

Humans are not the only mammal that can get diabetes. Some dogs have diabetes, which means that they need special care and a new diet. This shows how to care for your diabetic dog!

Steps

1. **Go to your local vet**. Get his or her opinion on a kind of pet food for your pet, and talk to them about what you can do to care for your dog.
    - Ask about the right diet for the dog.
    - Ask whether your dog will need insulin.

    - Ask for instructions on giving the insulin injections safely and correctly. Your vet should be able to demonstrate, and may ask you to practice while he or she instructs and watches.
2. **Buy the amount of insulin your vet suggests**.
    - Be sure to get a sharps disposal container for the needles, and make sure you know how to dispose of full sharps containers safely.
3. **Move the insulin shots around**. Your dog can get very sore if you repeatedly apply the shot it in the same place.
4. **Keep a supply of insulin handy**. Call the vet to order more for pick-up before you're down to the last few days' worth.
5. **Go to the pet store**. Get a dietary pet food, and get a blood sugar tester for your dog.
    - Find an employee to help you find what your looking for, and don't be afraid to ask someone else if you're not comfortable with the answers.
    - Make sure that these are right for your dog. Take the items back to the vet and having the vet clarify, if you need to.
6. **Make sure your pet sitter knows how to care for your dog**. If you have to go out of town for any reason, and need a pet sitter, make sure that that person is well educated with dogs, is someone you trust, and be sure to teach them how to give insulin.
7. **Buy low sugar or sugar free treats**. Your dog will love them whether or not they have sugar or not.
8. **Feed your dog an average daily amount of no more than 5 grams of sugar per meal**. Write it down and keep track if you have to.

Tips

- Some vets offer special foods through their offices. These foods work extremely well because they are specifically designed for pets with dietary health issues. If these are unavailable, then getting pet store foods checked with your vet also works to see if the food is the kind your dog needs.
- Cinnamon treats are a very good sugar boost if your dog's sugar levels are low.
- Give your dog plenty of attention. Your dog will definitely return the favor, and it will help compensate if the treats or diet are now restricted, or if the new regimen of regular shots isn't popular.
- Try giving the shot to your dog when they are eating this helps take their mind off the shot.

Warnings

- Insulin overdose is highly dangerous and can result in death if overdosed. Be sure to give your pet the exact amount of insulin prescribed by the vet, no more, no less.
- Always keep the insulin refrigerated. Do not leave it sitting out, as this makes it warm, and no longer effective, or freeze it as this crystallizes the insulin/ sugar molecules!

- Never prick yourself with the shot. It could be very dangerous to a human.
- Keep insulin and needles away from children or pets.

Chapter- 5

How to Prevent Heat Stroke in Dogs

Hot summer weather can be more dangerous to dogs than many pet owners realize. When a dog's internal temperature is raised too high (generally about 106 degrees F), a chemical reaction occurs that actually breaks down the cells in your pet's body and can result in death. But, thankfully, there are some simple common-sense steps you can take to keep your dog healthy and prevent heat stroke.

Steps

1. **Ensure that any dog kept outdoors has plenty of water and shade**. If the weather is unusually hot, take time to check the outdoor temperature in your pet's area. It may be too hot in some locations to leave your pet outdoors regardless of how much water and shade your pet has.

2. **Restrict outdoor exercise to the early morning and late evening when temperatures are cooler**.
3. **Carry water with you when walking your dog**. Watch your pet carefully for indications that he is over-heating, such as heavy panting, loss of energy, and any obvious weakness or stumbling. If your pet begins to show signs of heat suffering, stop in a shady spot and give him some water. If symptoms don't subside, take him directly home and seek veterinary care.
4. **Never, never, never leave your pet unattended in a parked car**. Even if you park in the shade and leave the windows open slightly, the internal temperature of your car can heat up and put your dog in fatal danger within just a few minutes.
5. **Equip your car with window shades if you are planning a long car trip with your dog**. Bring water and/or ice cubes (some vets think ice cubes are dangerous for dogs, please consult your vet) along to help keep your dog hydrated and cool.

Tips

- You can purchase cool pads for use in the dog's crate or in your car. When soaked with cool water, they keep the temperature down. Bandanas can also be used in this way.
- Pharmacies carry athlete-grade ice packs that can be frozen and create little mess. Additionally, they can be applied directly to specific areas.
- To help your dogs feel cooler, fill a spray bottle with water and squirt him but, this is sometimes used as a punishment so if you spray your dog when he/she has been bad, it may think it has done something wrong.
- Heat exhaustion is very common in bulldogs. Keep the bulldog inside as much as they need in order for them to cool down.

Warnings

- If your dog is showing signs of heat stroke, use a rectal thermometer to check his temperature. If it is approaching 105 degrees, put your dog in a cool bath (or at least sponge him down) and call your veterinarian immediately. When your pet's temperature drops to 103 or 104 degrees, you can take him out of the cool bath so his temperature won't drop too quickly.
- If your dog isn't taken care of properly (i.e. if he is left alone in the car), people around the area may report to the police. Be careful and always look out for your pet's safety.

How to Administer a Vaccine to a Dog

Giving a vaccine to your dog at home can be very simple and safe, as long as you know the correct procedures. NB/ A vaccine should only be given after a thorough examination of the animal by a veterinary surgeon. Only healthy animals should be vaccinated and you should not 'practice' administering subcutaneous injections on an animal without having received professional training from a veterinary surgeon, or qualified veterinary nurse!

Steps

1. **Prepare the injection**. Make sure it has been properly transported, stored, and mixed. Draw back all of the solution into the syringe, and remove any excess air bubbles by tapping on the side of the syringe, needle pointing up.
2. **Lift up the back skin of the dog to make a tent, thus creating a pocket of space underneath the skin to inject the vaccine into**.
3. **Hold the syringe level with the dogs back**. Place the needle with the bevel (flat part of the needle) up into the triangular/tented area space of the skin.
4. **Draw back on the syringe**. If blood is present, find another location. If back pressure occurs or no blood is seen, slowly press on the syringe plunger to give the vaccine.
5. **Remove the needle and place pressure for about 30 seconds to prevent bleeding**.

Tips

- If you don't feel that you can administer the vaccine correctly you may want to take your dog to a veterinarian.
- If you feel you need to practice before actually giving the vaccine: Take an empty water bottle, put a sock over it, practice pulling up on the sock like you would pull up and "tent" the skin of the dog. Practice handling the syringe. Become comfortable using the syringe one-handed. Practice using the syringe and tenting the sock at the same time. Do this until you feel comfortable doing both before trying to vaccinate your dog.

Warnings

- Only give vaccines recommended by your veterinarian.
- Only give vaccines after the proper wait time (1 year for most vaccines).
- Make sure the vaccine has been stored at the proper temperature during transportation and storage. If incorrectly stored and transported, the vaccine may cause harm. Purchase vaccines from a registered vendor to insure that the storage with the vendor was proper.
- Do not administer a vaccine if your dog may be ill or its immune system is compromised. If your dog has had any diarrhea or vomited, do not administer the vaccine.

- If blood is seen when drawing back on the syringe, do not use that location. You have hit a blood vessel.
- Do not give vaccines by IV.
- Make sure all materials used are sterile and sterile procedures are followed. NEVER use an unsterilized material.

Chapter- 6

How to Make a Safety Kit for a Rabbit

You love your rabbit, right? So you want to be prepared for anything, right? Yes? Well read on!

Steps

1. **Get a large, plastic, container for all of your supplies**. You may have to buy one. Make sure that it's sturdy, and won't be breaking anytime soon. That will be for the evacuation kit. You will also need a first-aid kit. For this, you can just buy a small tackle box. Or if you already have one, make sure it's sanitary and you can just use that one.
2. **Look for the supplies needed for the evacuation kit**. You will need:

- Food and Water
  - Food: Two weeks supply; place dry food in airtight containers (rotate every 3 months)
  - Usual treats (rotate every 3 months)
  - Water: Two weeks supply of water (store in dark place, rotate every 2 months). Estimate 1-2 pints a day depending upon your pet's size.
  - Food and water dishes
  - Spoons and can opener, if necessary
- Restraint and Identification
  - Towels
  - Thick gloves (in case your pet is injured or very afraid)
  - Small transport cage, that your pet will not be able to chew out of. Do not attempt to transport your pet in his cage if it has branches, dishes, hide boxes, or other items that could injure your pet if the cage is jarred. Be sure the transport cage is escape-proof, with no sharp edges. Securely attach the following information indelibly printed: your name; phone number; address; a description of your pet (distinguishing marks, age, sex, species, etc.); the name of your pet; nutritional needs (someone rescuing your pet may not be familiar with what he eats); microchip ID or tattoo ID, if any; pet insurance policy number; and the address and phone number where you or a contact person can be reached if you are not at home.
  - Recent photographs with the same information that is on the pet carrier printed on the back (keep in a waterproof container, e.g., inside several ziplock bags). Include yourself in some of the photos to help you reclaim your pet, should he become lost.
  - Wire, pliers, and duct tape (to repair pet carrier)
- Sanitation
  - Small litter pan, litter, and scoop (for rabbits)
  - Newspaper for lining the cage
  - Additional substrate
  - Paper towels
  - Dish soap
  - Disinfectant
  - Garbage bags
  - Plastic bags for holding waste (two weeks supply)
- Care and Comfort
  - Evacuation cage (may be the same as the transport cage). Solid-walled cages such as aquariums will be more insulating.
  - Blanket and/or sheet to cover cage
  - Hide box or log
  - Toys
  - Hot water bottles to keep cage warm (empty plastic milk containers work well)
  - Heating pad and extension cord (preferably outdoor-approved)

        - Styrofoam cooler to help insulate your pet, if he is very small
        - Flashlight and batteries
        - Cage thermometer(s)
    - Records and Medications (store in a waterproof container)
        - List of phone numbers:
        - Your veterinarian
        - List of secondary veterinarians
        - "Pet-friendly" motels
        - Boarding facilities (Red Cross shelters do not allow animals)
        - Emergency clinic(s)
        - Database centers if your pet is tattooed or has a microchip
        - Animal poison control center(s)
        - Animal shelters in your area (in case you get separated from your pet)
        - Pet insurance policy number
        - Copies of proof of ownership papers (registration information, adoption papers, proofs of purchase, and microchip/tattoo information to store in the evacuation kit). List each of your animals and their species/breed, age, sex, color, and other distinguishing characteristics.
        - Medical records and/or list of medical needs, if your pet has a medical condition or is on medication
        - Two weeks supply of medication and any supplements in waterproof container (rotate every two months); have chemical ice packs and a small, insulated cooler if medication needs refrigeration
        - First aid kit
3. **Put your supplies in the large container**. You can put the carrier on top, or beside it if you can't fit it in.
4. **Gather the supplies needed for the first-aid kit**. You will need:
    - Cotton Swabs
    - Cotton Balls
    - Sterile gauze pads
    - A supply of paper towels
    - A supply of "zip type" sandwich bags (in case you need to deliver a sample of some kind to a veterinarian.
    - A pair of small precision scissors
    - A pair of small precision tweezers
    - A small precision scalpel and supply of sterile blades. (Warning: DO NOT NOT USE THIS UNLESS DIRECTED TO DO SO BY YOUR RABBIT'S VETERINARIAN! You could do more harm than good!)
    - Animal Toenail Clippers (You can get a pair of these at any good pet shop)
    - Syringes without the needle to administer medication, force-feed, or to give warm milk to a baby bunny. Also used to to wash and clean wounds

    - A supply of skeptic powder to stop nails from bleeding if you should happen to cut your rabbit's nails too close.
    - A plastic medicine dropper
    - A supply of Betadine (to clean and disinfect wounds)
    - A tube of Neosporin to dress wounds.
    - A tube of Petromalt (to help dissolve hairballs)
    - A stethoscope to listen to you bunny's digestive system and monitor him/her for GI Stasis
    - The business card of your primary and secondary veterinarian and emergency 24 pet clinic (if there is one in your neighborhood) taped to the inside cover of the kit or the phone numbers displayed on the lid.
5. **Put your first-aid kit in the evacuation kit container, if possible**. Then you will have easy access. Place the whole thing somewhere easy to reach and near the door. Now you're done!

Warnings

- Make sure everything you use is rabbit-safe!

How to Remove a "Foxtail" from a Dog's Nose

How to Remove Foxtail's from a Dog's Nose: If you live in any state west of the Mississippi, you are probably pretty familiar with “foxtails.” In this case, "foxtails" do not refer to the attractive, bushy tails found at the end of foxes; instead "foxtails" refers to a weed that poses a particularly nasty threat to dogs. A foxtail seed can cause an inflamed, painful, infected lump anywhere on an animal’s body. A dog with a foxtail seed in its ear might rub its head on the ground or shake its head violently from side to side. If a dog gets a "foxtail" seed in its eye, it might squint. The eye will water and the dog will paw at it. Even if you can clearly see the seed beneath the eyelid, do not attempt to remove it. Get the dog to a veterinarian immediately! One way to tell if your dog has picked up a "foxtail" in its nose is a sudden burst of snorting and sneezing for a sustained period of time, and then sneezing on a regular basis.

Steps

1. **Calm your dog down as he or she is very uncomfortable**.
2. **NEVER attempt to remove the "foxtail" without professional assistance as this may cause more harm to your pet**.
3. **Locate the nearest veterinarian and take your pet their immediately**.
4. **Inform the veterinarian of the "foxtail" and request that your pet be sedated during the removal of the "foxtail" so your pet does not experience further discomfort**.

5. **The veterinarian will carefully remove the "foxtail" from the affected with forceps, there may be some bleeding as certain areas like the nose have many capillaries**.

Tips

- What You Can Do To Keep Your Pet Safe:
    - Examine your pet daily. Carefully brush its hair, while feeling for any raised areas on its skin. Check inside and under its ears; check between the toes, under the armpits and in the groin area. Keep long haired and thick coated breeds especially well-groomed.
    - If you see a "foxtail" seed sticking in the dog's skin, carefully pull it straight out, making sure not to break it off in the process.
    - If you think a seed might already embedded in the skin, in a paw, in an eye or an ear, or if a dog who has been eating grass seems to have a throat problem, get the dog to a veterinarian as soon as possible! Waiting can only make it harder to find, allow it to migrate and become more dangerous, and make treatment more difficult.

Warnings

- What Makes Foxtails Dangerous:
    - In addition to causing pain and localized infections, foxtail seeds can migrate and lodge in the spine, in the lungs and in other internal organs. They enter through the nose, ears, paws, eyes, urethra or just through the skin and travel through the body The seeds are very small, making locating them a painful, difficult and expensive procedure. Depending on where a foxtail seed has traveled to inside a dog, it can even be life threatening and will require prompt surgical removal.

Chapter- 7

How to Give an Iguana an Injection

Green Iguanas and other reptiles cannot metabolize medications the same way that humans or mammals do. Although these pets do not need shots very often (if ever), when iguanas have an infection or have become sick, the medication that they require must often be administered as an injection because pills will not be effective enough.

Steps

1. **Only work under the orders of a qualified reptile veterinarian who has determined the medication and dosage needed**.
    - This procedure should be done by two people who are familiar with the procedure and comfortable working with an iguana.

2. **One person should wrap the lizard in a towel, covering the animal's head and eyes, his back, both of his hind legs, and one of his front legs**. The leg that you will inject should remain uncovered. (The towel helps shield you from the lizards claws, gives you an easier grip to gently hold the lizard still, and by covering the iguana's head and eyes helps the lizard stay calm.
3. **Inject the medication**. For this example, the medication is injected into the muscle on the front leg. All medications must be injected in the front third of the lizard's body and most antibiotics are shot into muscle. However, you must always check with the vet for each medication.
4. **The person giving the injection should**: locate a muscle on the exposed forearm of the lizard.
5. **Insert the needle between the scales and into the muscle**. Trying to insert into a scale will bend most needles. Make sure the needle has gone into the muscle then inject the medication.

Tips

- Always inject into the muscle in the front legs; medication given in the hind legs hits the kidneys first, causing the kidneys to process the medication. This: (a) can damage the kidneys and (b) keeps the medication from properly dispersing to the entire body.
- Wrap him in a towel and make sure his eyes are covered; iguanas tend to stay calmer when they cannot see what you are doing to them. Also the towel will help you hold the head still.
- This process is much easier for two people to perform than one. One person can hold the iguana down while the lizard is wrapped in a towel, then the other can concentrate on giving the injection.

Warnings

- Iguanas do not like to be held and given injections; beware that they will likely bite, claw, or slap with their powerful tails to get away from the whole process. Iguanas are very strong for their size and can easily cause injury with their powerful jaws, tails, or claws.
- Make sure that anyone helping perform the injection knows the procedure and is comfortable around the animal.
- Find a veterinarian that specializes in reptiles or exotic pets, and only act under that veterinarian's orders.
- Captive lizards also may require subcutaneous shots of hydration because their environment in captivity (e.g., a cage in North America) is not as humid as their natural environment (e.g., a rain forest). This deals with intramuscular injections. Work with a veterinarian who specializes in exotics for more information on hydration injections.

How to Treat Dog Diarrhea

Most dogs get diarrhea at least once in their lifetime. Diarrhea is one of the most common problems affecting dogs and is the reason behind a significant percentage of visits to veterinary clinics. Naturally, it can be concerning for pet owners when their canine companion is suffering from diarrhea, whether just for a short duration or over an extended period of time. While most cases of **dog diarrhea** are not serious and will resolve without requiring veterinary care, the problem can be unpleasant for both the dog and its owners so it's important to know what to do when your four-legged friend is suffering from diarrhea. We will tell you how to treat minor canine diarrhea.

Steps

Try to find the cause

1. **Attempt to determine the cause of your dog's diarrhea**. One of the most common causes is eating garbage or rotten food. However, canine diarrhea can also be caused by medical conditions and ingesting toxic substances.
2. **If you know or suspect that your dog has ingested a toxic substance, take him or her to a veterinary clinic immediately so that treatment can be administered as promptly as possible**. Your dog should also see a vet right away if he or she is displaying other troubling symptoms such as fever, lethargy, weight loss or abdominal pain.
3. **If your dog does not appear to be suffering from a medical condition and has not ingested a toxic substance, the diarrhea can most likely be treated at**

home. To begin with, make sure that your dog is drinking water regularly in order to prevent dehydration.

Food solutions

1. **Add a probiotic powder to the dog's water, or feed your dog a brand of healthy pet food that includes probiotics**.
2. **Refresh (dump, wash bowl, refill) several times daily**.
3. **Fast the dog for 12 hour or until the dog is "empty**." If the stool is voluminous and continues even when the dog should be "empty", see your vet, it may be a bacterial infection. However, do NOT withhold water from the dog.
4. **Give 100% pure canned pumpkin**. This does ***not*** mean the pumpkin pie filling with sugars and spices. Most dogs love the flavor of pumpkin, but it is a unique fiber that regulates the bowel. It will color the stool.
5. **Feed plain boiled chicken (shredded after cooked) and plain boiled white rice**. Both are gentle and will help bind your dog. The added moisture in the food will also help to keep your dog hydrated.
6. **Gradually add in the dog's regular diet over a few days**. If the diarrhea returns after your dog is back to its regular diet, see your vet immediately!

Try medication remedies

1. **Familiarize yourself with the ingredients contained in a remedy obtained either online, from a pet store, or the from the vet's**. Look also for any warnings that might be associated with the product.
2. **It's always a good idea to check with your veterinarian prior to administering any form of treatment, including natural remedies**. Once you have confirmation from your vet, administer the remedy as per the product instructions.

See the vet

1. **If your dog continues to suffer from diarrhea and/or begins to show other symptoms, take your pet to see a veterinarian, as there may be an underlying medical condition which will require specific treatment**.

Tips

- When you go to the vet, bring a fresh stool sample and have them do a fecal float and a fecal smear.

Warnings

- Dogs with diarrhea can dehydrate quickly. Provide ample fresh water and ensure that your dog is drinking. If your dog is dehydrated and will not drink or is vomiting, see your vet immediately!

- If your dog is not drinking enough water put some chicken broth in the water. If this does not encourage your dog to drink - go to your vet immediately, they can give a fluid injection.
    - Mucous in diarrhea indicates an irritated bowel. Parasites, raw pork hearts and medical conditions can cause mucous in the stool.
- Diarrhea accompanied with vomiting is a serious concern, go to the vet!
- If it is bloody or explosive see your vet.
- Don't give your dog new foods that they have never eaten while you are still treating the diarrhea.
- Green-tinged diarrhea in puppies may indicate coccidosis, see your vet.
- Watery diarrhea in puppies is life threatening if not treated immediately. Go to the vet!
- Some dogs do not react well to canned dog food. Consider feeding your dog a premium dry food, or a mixture of canned and dry.
- If in addition to Diarrhea your dog has a fever or is suffering from abdominal pain or bloating this can indicate a serious condition, you should contact your vet immediately.
- If you're switching your dog's food, do it gradually or your dog might get sick or have diarrhea.

Chapter- 8

How to Become a Veterinary Technician

Veterinary technicians play a key role in the operation of any veterinary hospital. They greet clients, help assess a patient's condition through diagnostic tools such as taking temperatures and conducting blood tests, and assist the veterinarian with everything from setting broken bones to taking X-rays. As with other healthcare careers, becoming a vet tech requires intensive training and hands-on experience. To find out how to become a veterinary technician, it's important to look at what you'll need to do before, during and after you enroll in veterinary technician training.

Steps

1. **Find out what prerequisites you'll need**. Before a veterinary technician training program will accept you, they may require that you're proficient in key subjects like science and math. They're important because veterinary technicians frequently determine dosages, measure out medication and alert pet owners to any side effects or drug interactions. If you haven't taken college-level courses in those subjects, the school may require you complete those first.
2. **Enroll in a veterinary technician training program**. Veterinary technician education ranges from short-term certification programs to two-year associates degrees to four-year degrees in veterinary technology. Some schools offer distance learning programs accredited by the American Veterinary Medical Association. These programs meet the same accreditation standards as traditional programs. If you enroll in a distance learning program, you'll also need to complete hands-on training at a local veterinary facility.
3. **Get hands-on training in a veterinary clinic**. Similar to an internship, hands-on training in a veterinary hospital is a requirement in veterinary technician training programs. It's called the clinical component or preceptorship, and during this time the student acts as an apprentice to the veterinarian, assisting in everything from taking temperatures to drawing blood to participating in procedures such as dental cleanings.
4. **Take the certification exam**. After you've completed your academic studies and the clinical component, you'll need to take a credentialing exam. Every state

requires a certification exam that includes written, oral and hands-on components, and many states use the National Veterinary Technical Exam.

5. **Find a job at a veterinary facility**. After you graduate, seek part-time or full-time employment at a veterinary clinic. You can search your local wanted ads, contact veterinary facilities directly or use your college's career placement office. The school may already know of veterinary hospitals who hire recent graduates. Whether you completed a certification or degree program, the school may be willing to recommend you for a position, and can advise you on how to become a veterinary technician at the type of facility you'd like to work.
6. **Receive advanced training and certification**. If you want to focus on a specific aspect of veterinary medicine, you may need additional certification. To specialize in critical care and emergency veterinary medicine, for example, you'll need to get certified through the Academy of Veterinary Emergency and Critical Care Technicians. For this certification, you'll need a general veterinary technician certification, 3 years experience working in emergency and critical care medicine and 25 hours continuing education in veterinary emergency and critical care. If you wish to work in a research facility, you'll need certification through the American Association for Laboratory Animal Science (AALAS). AALAS certification requires relevant work experience and a certification exam.

How to Give a Cat an Injection

An example of a needle with medicine

Ever had to give a cat an injection at home, for feline diabetes, maybe? Here's how to do it painlessly... both for you and the cat! It's all in the preparation... and in remaining calm, which will help your cat to do likewise.

Steps

1. **Always give the injections at the same time of day, and give a little food at injection time**. This will help the cat associate the timing of the injections with food, something she likes, and distract her.
2. **Before you get the food out, prepare the injection**. First, draw up some air by pulling back on the plunger of the syringe. The amount of air you draw up should be the same as the amount of medicine you are going to inject - if you are injecting two units of insulin, you would want to draw up two units of air. Swipe the top of the vial with an alcohol pad. Without touching the top of the vial, stick the needle through the rubber cap and push down on the plunger to inject the air. Make sure that the end of the needle is above the liquid in the vial - you don't want to inject air bubbles into the liquid. This pressurizes the vial. Now, invert the vial and draw up the correct amount of medication, plus a little bit more. Remove the needle from the vial. Hold the syringe with the needle pointing up and lightly tap the side of the syringe to move any air bubbles to the top of the syringe. Slowly depress the plunger to squeeze the air out of the syringe. Because you drew up a little extra medication, you should be able to get the air out without having to draw up more. Make sure that you have the right amount of medication in the syringe. Cap the needle until you are ready to give the injection.
3. **Get the food out and put a small amount into a dish**. Your cat will usually come in at this point, the smell of food almost always brings her running!
4. **Hold the syringe handy -- Do not hold the cap or syringe between your teeth, the medicine could harm you**! -- and place the food dish in your cat's usual dining spot. As she comes over to eat, stroke her back gently and talk to her in a soft, soothing voice.
5. **When she's comfortable and begins eating, gently pinch a little of the loose skin at the neck**. All cats have this, and it's the best place since the cat is not able to easily reach your hand with her teeth or her claws.
6. **In one quick, confident movement, grab the syringe with your free hand, uncap it, and insert the needle QUICKLY into the fold of loose skin held between your fingers**. Press the plunger on the syringe firmly but not too quickly, giving the injection as quickly as possible but not with such force that it hurts. This comes with practice, your vet can demonstrate for you.
7. **Pull the needle out and recap it (carefully, it's contaminated now), then continue to stroke the cat's back and neck gently, and offer it words of praise, such as "That's my good girl**!" or "You're such a brave boy, that didn't hurt at all, did it?" and allow them to finish eating.
8. **Dispose of the used needle properly, Do not dispose of in household trash**! (needles are a biohazardous waste) Dispose of the needle as you would for a human. Congratulations, you're done!

Tips

- With time, your cat will associate the injection process with food to the point where she may even come running when she hears you preparing the injection!
- If you're going away on vacation, make sure that someone reliable will be available to continue the injections... keeping a consistent schedule is crucial. Allow your "replacement" to give the injections two or three times under your supervision so you can coach them in the proper technique.
- Quickness is key... think of when you get a shot. Quick means painless, while a slow stick can be torture. Be quick and confident, and the process will be pain-free.
- Getting all the air bubbles out of the syringe can be tricky. You may want to practice drawing up water out of a bowl...this will also help you gauge how much extra liquid you should draw up, preventing excessive waste.
- The best way to recap a needle is to lay the cap on the ground or on a counter and scoop the cap up with the needle. This prevents you from sticking yourself while recapping it.
- Remember, if you are not confident enough to give your cat an injection you can always go to your local vet office.

Warnings

- Be careful with syringes once loaded, you don't want to inadvertently end up injecting the medicine into yourself!
- Be even more careful with the syringe after you have given the injection... while few, some cat illnesses can be infectious to humans, and do you really want to stick a needle covered in cat blood into your thumb?
- If the cat tries to pull away, whatever you do, DON'T let her get away with the needle still stuck in her skin, it can cause injury if it drops out or she tries to remove it.
- If you are giving an injection of insulin, make sure you do not shake the vial before drawing up the medicine. Instead, gently roll it between the palms of your hands to agitate and warm it.

Things You'll Need

- The injection itself (the syringe, loaded with medicine).
- Some cat food in a small dish.
- Some alcohol
- The cat, of course!

Chapter- 9

How to Help a Cow Give Birth

Do you have a cow or heifer? Is she at the time now where she is ready to calve? If so, she may need help calving out. Here's the steps to properly assist her during birth.

- Note: If you can't pull a calf out yourself or don't know how, phone your local large animal veterinarian to get him/her to help. Some malpresentations such as belly or back presentation cannot be corrected by hand and instead must be delivered immediately by Caesarian section.

Steps

1. **Find the cow or heifer.** Usually a female that is in labour will go find a secluded spot away from the herd to calve out. Make sure, during the defined calving season, that you have the heavily pregnant cows close by so that you, nor they, have a long distance to travel in case any of them need assistance.
2. **Observe what stage of birth she's in.** A female that is in her first stages of birth will be pacing around, getting up and laying down repeatedly. When she is very close, you will see a water sac hanging down from her vulva: it's a yellowish spherical sac. Usually, soon after you see the water sac, *both* the front feet will appear, soon followed by the nose. A calf in normal presentation will have the base of the feet pointing to the ground. If the base of the feet are pointing up, then you have a breach calf.
    - **If she has been in that position for the last hour or two, and hasn't progressed any further, then it's time to get her in the head gate and help her out.**
3. **Restrain the cow, if necessary**. If she's down on the ground and is tame enough to let you near to start to help her pulling out the calf, then you can do the assistance right there. If not, if you have a head-gate set up nearby, get her in that where you can easily and quickly pull the calf. If you don't have a head gate, use a gate (preferably 10' or more) to restrain her. However, a head-gate is a more safer and better option for calving out cows, because it prevents them from backing up on you if they start to panic.
4. **Clean your hands and arms from your shoulders down.** If you have shoulder gloves on hand, then you should put those on. After you have put some lubricant on the gloves, reach inside the cow or heifer (through the vagina or birth canal, not the anus) to see how the calf is positioned.
    - **For backward positions,** don't bother trying to twist the calf around. Put the calving chains on (with the handles) or a good flexible rope and pull the calf out as quickly as you can. But only do this if the hind feet are presented.
    - **For breach positions (where the calf is arriving tail-first),** you will need to bring the hind legs up so that they are positioned in the birth canal. To do this, push the calf forward into the uterus as much as you can. Next, push the flexed hock outward (or away from the calf), and swing the flexed fetlock (of the foot) back inward. Keep the fetlock and hock joints tightly flexed and bring the fetlock joint and foot over the pelvic brim (which is towards you) into the birth canal. Repeat with the other leg. Then put the chains or rope on and start pulling.
    - **For head-back or head-down positions,** push the calf back into the uterine cavity, cup your hand around the calf's nose and with the other holding the calf stable, bring the head to the normal position. If you can't quite reach the head, you can hook your fingers in the corner of the calf's mouth to bring it part way around. Then you can do the rest as explained previously to bring the head around.

    - **For fore-leg-back positions,** push the calf back into the uterus, grasp the upper leg and pull it forward enough to bring the knee forward. Then flex the knee tightly and pull it forward. With the knee now tightly flexed, cup the hoof with your hand and gently but firmly bring it up to normal position.
    - **For bent-toe or caught-elbow positions,** you will need to push the calf back to reposition the foot or elbow. For the bent toe, pushing the calf back may help correct the malpresentation itself. For the caught-elbow, when you have pushed the calf back into the uterus, grab the leg that is more back than the other and pull it forward. Once corrected, the calf should come easily.
5. **If the calf is in normal position or in a position where you can pull from, put a set of calving chains or a rope (not twine, as twine is often too thin and too sharp to be used on a calf) on the front legs of the calf**. Use a double half-hitch knot to put the chains on: one loop on the fetlock, the other just below the knee. Pull out and down when the cow is straining, and rest when the cow is not straining. If you have a calf-puller handy, use that too, though be careful of how quick you pull the calf out, as you could easily cause more damage if not handled correctly.
    - **The calf puller** should have the U-shaped part braced against the rear of the cow, with the chain attached to this part up behind the base of the cow's tail, with the calving chains that are attached to the legs of the calf, and the leaver to ratchet the calf out upwards. Tighten up the tension on the chains. Once you have reached tension, ratchet slowly, and work with the cow's contractions. Once you have made more tension to ease the calf out, move the puller down then back up, then increase the tension again. Repeat until you no longer need the puller (which is when the calf is half-out), then quickly unhook the chains from the puller and do the rest by hand.
6. **Once the calf is out, you must try to get it breathing right away.** Clean out the calf's nose with your fingers to get all the amniotic fluid out. Tickle it's nose with a clean piece of straw or hay, put some water in its ears to make it shake its head, or if necessary, you may have to perform artificial respiration to get the calf going. A calf should start to breath within 30 to 60 seconds after birth.
7. **Once the calf has given signs that it is breathing and alive, carry or drag it to a pen with clean straw, then let the new momma cow out to be with her young**.
8. **Leave the cow and her newborn calf alone for a while to allow the cow to mother-up to the calf, clean the calf off, and urge him to start nursing**. Make sure there is some hay and water for the cow to keep her happy while she gets to know her new youngster.

Tips

- Always keep track of the cow when getting ready for birth so you know where she is so you can easily find her if she needs assistance.

    - ***Do not*** wait a day or two after the cow has shown signs of labor. *If* she has started showing labour and has not progressed for at least an hour or two, then get her in where you can assist her.
- For cows that are down and trying to give birth, but has a calf that is in need of repositioning, pull the back legs out behind the cow and get a friend to pull the tail up over her back. This will make it easier for you to go in and reposition the calf without the cow straining against you.
- When going into the birth canal to try to push the calf back, often you reaching into the cow will stimulate her to strain against you, making it easier-said-than-done to push the calf back to reposition him.
- Cupping the calf's nose or foot with your hand helps prevent tearing or scraping the uterine wall, which can invite infection after the cow has calved.
- Calves that have all four feet in the birth canal or have their backs toward the birth canal are *the* hardest to reposition, and are best delivered by C-section.
- Calves that are simply too large to go through the birth canal, especially in heifers that were bred too early, need to be delivered via C-section.
- Calving chains are *the* best for delivering a calf. Rope and your bare hands will work as well. Baling twine is not recommended, as there are some types of baling twine that are too thin and have too fine of threads to be used to for calving. These threads can detach and cut into the calf's leg when being used to pull the calf out. Rope that is at least 1/2" in diameter is the best; calving chains are made to be used on calving cows, and can be supplied a local feed store your your veterinarian.
    - Make sure the equipment you are using is clean and disinfected. Wash the rope or chains and handles immediately with detergent and hot water after calving and allow them to air-dry. Store them in a dry place until the next use. The same goes for the calf-puller that may have been used.
    - A double half-hitch to both legs of the calf minimizes injury and also prevents the rope or chains cutting into the calf's legs, possibly cleaving the feet off from the calf. One half-hitch should be positioned on the fetlock joint of both feet, and the second half-hitch just below the knee. This helps spread out the pressure enforced when pulling out the calf and minimizes injury.
- Pulling out and down goes with the way that cows would naturally calve out. The cow's pelvis (not to mention gravity!) naturally forces the calf to go down and out when being pushed out. Pulling in this manner eases the pressure on the cow's pelvis, and allows for easier birthing.
    - If the cow is standing up and calving, you will have to be sitting on your rear when pulling out the calf.

Warnings

- When you are birthing a calf, there is a chance of you getting a little flattened if the calf comes out and lands on top of you.

- You may have the cow suddenly decide to get up (if she's on the ground) on you when you are still inside trying to reposition the calf. Go along with her, and if possible, pull out as soon as you can.
- Be careful of cranky cows. Sometimes a cow's hormones levels are going so wacky that she may decide you will be a source to vent her frustration on, instead of allowing you to help her out. This is especially true after a cow has calved.
- If you are absolutely sure you cannot calve out the cow yourself, then either phone the vet if he's available, or a neighbor friend that can come out right away to help you out.
    - C-sections are best done by someone who knows what their doing (i.e., the vet) to prevent infection and injury to the cow.

Things You'll Need

- Calving chains or rope
- 2 or 3 handles for the calving chains or a bar to tie the rope to
- Calf puller (optional, but good to have on hand)
- Halter and lead rope, if necessary
- Head-gate or medina gate
- You to observe the cow and your strength to pull out the calf
- The cow or heifer that is in need of your assistance

Chapter- 10

How to Give First Aid to an Electrocuted Animal

Giving First Aid to an animal affected by an electric shock can change the outcome of a life and death situation. The animal must be taken to a vet as soon as possible to increase chances of survival.

Steps

1. **If you find the animal physically being electrocuted, i**.e. connected to a cord or wire, **do not**, i repeat **do not**, try to move it if the cord is plugged in and turned on, as you can electrocute yourself if the power is turned on. Turn off all power and then unplug the cord.
2. **Check that the airway is clear from foreign objects**. If the animal is conscious do not put your fingers in its mouth. If the animal is unconscious, open the mouth by placing your fingers on either side of the jaw, and gently open it. Pull the tongue out so it is not blocking the airway. If you feel much resistance, then the animal may be conscious, so be careful it doesn't bite you, as it may be in shock. Once any foreign objects have been cleared, check that the animal will be able to breathe properly. Tilt the head back so the airway is clear.
3. **Check the breathing by watching the mouth and nose for any sign of breath, or by watching the flanks (stomach) rise and fall**. If there appears to be no breathing, then prepare to administer further first aid. If the animal is not breathing (but there is a pulse), create a seal around its mouth by using your hands and mouth, or if the animal is small enough, just your mouth. Exhale forcefully into the animal, initially giving four or five rapid breaths. If the animal begins to breathe by itself, then cease artificial respiration. If the animal does not regain respiration, then continue artificial respiration for a maximum of 20 minutes, until veterinary assistance is available. For a small dog or cat give 20-30 breaths per minute. For larger animals, give 20 bpm.
4. **Check the circulation by pressing a finger (not thumb**!) in one of the following places: under the elbow, under the thigh, below the 'wrist' or under the hock (below the back ankle) If there is no circulation, place the animal on its side and prepare for CPR. Extend your arms to full length and place one hand over the other (for smaller animals use one hand on each side and compress about 1-2cm). For every 3 compressions give one breath if there is another person present to

assist. If working alone, give one breath for every five compressions. For larger animals compress 2-5cm at a rate of five compressions for each breath. For very large animals, give 10 compressions for each breath. Continue to check for a pulse or breathing. Cease compressions once animal begins to breathe for itself. After 20 minutes resuscitation for the animal is unlikely.

5. **If the animal is not showing any signs of unconsciousness, check for ulcerations (burns) when the cord has touched the animal (often in the roof of the mouth), drooling, or odour from the mouth**. The animal also may have a lack of appetite, and may develop a cough due to build up of fluid in the lungs.

Tips

- If you suspect your pet has been electrocuted, then it must receive emergency veterinary attention.
- To prevent your pet from being electrocuted - keep young animals away from power points and leads.
- Make sure that safety switches are operating, and that plastic sleeves for power leads are functioning.
- Make sure teething animals have plenty of toys to chew on to prevent them turning to cords.
- There have been some cases where dogs get shocked by stray electricity only at winter because of the ice. This *could* be fatal.
    1. The animal may appear shaky, have white gums, and feel cold. This is a sign of shock.

Warnings

- Be careful when removing the animal from the source of electricity. If possible turn off all the power to the surrounding area from a mains switch located in the power box. Normally the power will shut down by itself, but this is not always the case.
- Be careful when dealing with a conscious animal in pain, it may become vicious, even towards its owners.

How to Give a Cat Medicine

Expect a struggle

There is really no easy way to administer medicines to your cat. Cats are quick, and can easily slip away from you, and hide. Try various methods, depending on the size of your cat, until you find one that works for you.

Steps

1.

A syringe (top), for liquid, gel, or paste medications and a pill pusher (bottom) for pills

Prepare the medicine you have to administer and place on top of a paper towel, on a nearby surface, so that you can grab it quickly as soon as the cat's mouth opens.

- 

  A syringe and pill pusher, close up.

  A pill pusher is a bit like a syringe for pills. The rubber tip holds the pill and a plunger pushes it out when the time comes.

  - A syringe full of water can help to ensure that your cat actually swallows the medication.

2. **Lift the cat and hold it with one arm around it, while using your hand to open their mouth**. Placing the cat on a towel or blanket on an elevated surface (such as a dresser or countertop) might help.
3.

Use thumb and ring finger to press at the corners of the mouth. Use middle finger and index finger to lift the cat's nose.

Open the cat's mouth. Use your thumb and middle finger, and press into the corner of its mouth Use your middle finger and index finger to lift the cat's nose, do not block the actual nose with your fingers. Your fingers should be on either side of the nose

4.

Administer the medication.

Put the medication in the cat's mouth, and follow up with a bit of water if it seems to help with swallowing.

If giving the cat a pill, put it in their mouth quickly.

DO NOT squirt liquid medication into the cat's throat or tongue. Liquids are likely to go down a cat's windpipe, making the cat choke. For liquid medications, insert the dropper between the cat's cheek and teeth.

5.

Stroke the cat's throat.

Stroke the cat's throat or blow sharply on its nose to encourage the cat to swallow.

6.

Apologize.

Follow up with a kitty treat. This will help to encourage swallowing and make the whole process at least a little less arduous.

Alternative Methods

1. **Administer thick gel like medications from a tube (as for hairball prevention) with either of these methods or a combination**:
    - Place the required dose onto your finger, and insert your finger into their mouth. They lick it off easily.
    - If they resist, or leave some on your finger, just wipe your finger with the gel onto their paws or outside their mouth. They will wash their paws and mouth, and digest the gel.
2. **To give your cat a pill, crush the pill and mix it with with cream cheese**. Wipe the mixture onto the cat's front leg. He will instantly lick it and therefore consume his medication.
3. **Pill Pockets are great for getting cats to swallow pills without realizing it**.

Tips

- Speed and sure aim help get the pill or dropper into the mouth before there's time for stress or a fight. This is why it is best to prepare the medications before you even pick up the cat.

- When giving a cat a tablet, it might be easier to first dip the tablet in margarine. This practice will keep the pill from becoming lodged in the throat. It will also encourage the cat to swallow the tablet and can help cover up any unpleasant taste.
- When cats panic, they tend to back up. Use this to your advantage by kneeling on the floor with the cat between your knees, facing away from you. Doing this will make it easier to open the mouths of some cats or get drops into their eyes and ears.
- To immobilize a cat while giving medication: Spread out a towel, put the cat in the middle of a towel and wrap the cat up like a burrito; leaving its head sticking out.
- If giving liquid medication, to keep it from getting all over the cat's fur make a hole in one corner of a paper towel and put the cat's head through the hole, using the paper towel as a bib.
- Cats have a gap at the back of their teeth. With dropper medicine, you can point the tip of the dropper into this gap to instantly open its mouth to quickly administer medicine.
- **If** your cat can have cottage cheese, crush the pill/any med. add to cottage cheese, all done. Works really great for dogs! Some meds can not be crushed, crushing makes them not work well, so ask the Vet. before you do it. The pets do not smell the meds in cottage cheese OR they just like it so much they do not care if it has meds in it. Just use enough to mix the meds. in it.
- If you need to insert medication through any other openings, it helps to make the cat stay still until you're sure it won't drip out
- If the cat repeatedly gets away from you before you can dose it (or immobilize it with the towel method above), tempt or trick it into a much smaller room without any hiding places, like a walk in closet or bathroom, and shut the door. The medicine process will go much faster if you don't have to search the house tracking the cat down every time it manages to get away from you.
- If necessary medicine can be specially compounded to be absorbed through the skin. It can be applied to the inner ear. Be sure to wear gloves as not to absorb it into your system.

Warnings

- Be extra careful when putting eye-drops into the cats eyes. They squirm and are fast, and the tip of the eyedropper can easily extend into the eye, causing damage and pain. It is best to have a second person with you, when applying eye drops, or bring the cat to the vet and ask for their help.
- **Do not** give your cat human medicine. It can be harmful or fatal!

Chapter- 11

Veterinary Surgeon

A veterinary surgeon removes stitches from a cat's face following minor surgery on an abscess.

A **veterinary surgeon** is a veterinarian qualified in the UK and several other Commonwealth countries. In the UK, veterinary surgeons are regulated by the Royal College of Veterinary Surgeons or RCVS. The legislation affecting the activity of UK veterinary surgeons and of the RCVS is the Veterinary Surgeons Act of 1966.

This legislation restricts the treatment of animals in the UK to qualified veterinary surgeons only, with certain specific exceptions. The exceptions are the treatment of

animals by physiotherapy and other manipulation techniques (e.g. chiropractic, osteopathy), on the recommendation of and under the supervision of a veterinary surgeon. Certain trained individuals may be legally authorised to undertake procedures such as blood sampling or ultrasonic pregnancy diagnosis, following appropriate training and assessment.

Various alternative medicine therapies can only be performed on animals by a veterinary surgeon (e.g. homeopathy, acupuncture, herbal medicine aka phytotherapy, aromatherapy).

Entry requirements

A degree in veterinary science/medicine (and registration as a member of the Royal College of Veterinary Surgeons (RCVS)) is required to practise as a veterinary surgeon in the UK and the European Union. The seven institutions offering relevant degrees are:

- University of Bristol;
- University of Cambridge;
- University of Edinburgh;
- University of Glasgow;
- University of Liverpool;
- University of Nottingham;
- The Royal Veterinary College, London.

Degree courses are usually five years in length (six years at Cambridge, accelerated course at some universities for graduate entrants with relevant degrees can be 4 years). UK and EU applicants pay the normal subsidised home rates (about £3000 per year) for tuition and international applicants are expected to pay full fees for the course (upwards of £15,000 per year).

Career development and training

Continuing professional development (CPD) is a mandatory and key part of career development. The Royal College of Veterinary Surgeons (RCVS) recommends a minimum of 105 hours' CPD over a three-year period. The RCVS Professional Development Phase (PDP) that was launched for new graduates in 2007 provides a structured approach to guide the new graduate towards the professional competences they need to develop in either small animal, equine or production animal practice.

It is possible to gain modular certificates and diplomas in a range of clinical specialities whilst working in a practice. A certificate on average takes around two years to complete. Some employers pay part or all of the course fees and you may be able to take time off to study. Certificates cover a wide range of areas, including small animal medicine, small animal surgery, large animal medicine, welfare ethics and law, public health, cardiology and orthopaedics. The RCVS has introduced modular certificates, which will replace the current certificate qualifications and are designed to be accessible to all vets and

encourage lifelong learning. The modular Certificate in Advanced Veterinary Practice, (Cert AVP), requires completion of compulsory "A" and "B" modules which indtroduce the basis of further study and good clinical practice, and completion of a number of "C" modules, where the individual subjects may be studied in further detail. The number of modules required at each level is; One "A" module, Professional Key Skills.(15 credits)

Two "B" modules, one must be the Clinical Key Skills module, (5 credits), but a choice of the second is available from: Small Animal Practice, Laboratory Animal Science, Veterinary Public Health, Production Animal Practice, Equine Practice or another specialised practice area. (10 credits each)

Three or more "C" modules or a combination of "B" and "C" modules totalling at least 30 credits.

All modules are allocated a points score, and candidates musy achieve more than 60 points to be awarded the Cert AVP.

There may also be the opportunity to train to become a Local Veterinary Inspector (LVI). Most practices will have a trained LVI who is authorised to carry out certain tasks on behalf of the Secretary of State (Defra). These tasks include testing cattle for tuberculosis (TB) and brucellosis, and the issue of documentation for the export of animals and animal products. There are a wide variety of other LVI tasks; you should contact your local Animal Health Divisional Office (AHDO) for details.

Newly qualified veterinary surgeons usually work as assistants for some time before being offered the opportunity to become a partner or a principal, although the number of opportunities for partnerships is decreasing, with many practices being owned by larger companies and all vets being employed. Not every vet will want to become a partner as it involves increased responsibility, the need for more business and management skills and a financial input into the practice.

There is the opportunity to increase specialisation, either in existing practices or in practices noted for expertise in a particular field, such as equine medicine, small animal surgery or dermatology. Further training is required for these specialisations, which can lead to a certificate or diploma. With further training, extensive professional experience and by publishing articles on your chosen area, it is possible to gain Royal College of Veterinary Surgeons (RCVS) Recognised Specialist Status. Recognised specialists have demonstrated a high level of knowledge in their specialised field and must be available to offer consultation in their chosen field

There are also opportunities to work for employers such as animal welfare societies and government services, for example in the State Veterinary Service (SVS), the Veterinary Laboratories Agency or the Veterinary Medicines Directorate (VMD). The SVS is responsible for areas such as the control and eradication of major notifiable diseases and also has responsibility for animal welfare, promotion of international trade and certain public health functions related to residues in meat and investigation of food safety

incidents. THe SVS also provides education to LVIs and members of the public on request. The Meat Hygiene Service (MHS) is involved in consumer protection, principally in the area of meat hygiene. The VMD is focused on the licensing of veterinary medicines.

It is also possible to pursue a research and/or teaching career within universities or research bodies.

Employment sources and related jobs

Veterinary surgeons are typically employed in private practices in rural and urban areas. They may also work the Royal Society for the Prevention of Cruelty to Animals (RSPCA), the People's Dispensary for Sick Animals (PDSA) and The Blue Cross.

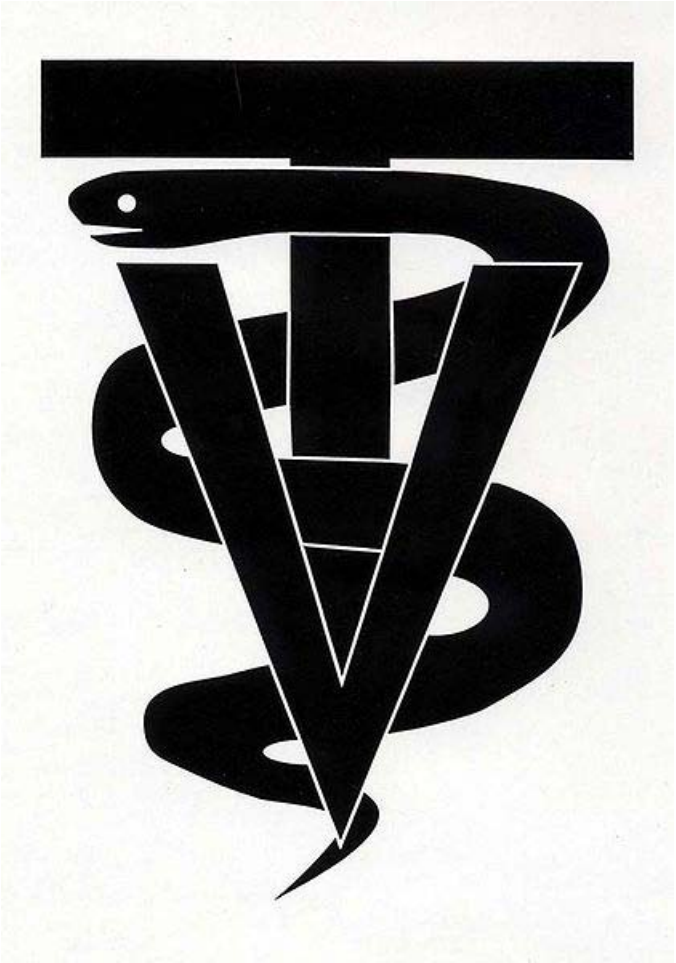
Overseas opportunities can be found with, amongst others, the Royal Army Veterinary Corps and Voluntary Services Overseas.

Vets in general practice are often sub-contracted for part-time work by the Department for Environment, Food and Rural Affairs or Local Authorities, inspecting hygiene and care standards in zoos, kennels, catteries, riding stables, pet shops and livestock markets. Approximately 400 work full-time for DEFRA, in either The State Veterinary Service or the Veterinary Laboratories Agency.

Chapter- 12

Veterinary Technician

A **veterinary technician** or **veterinary technologist**, (also called an **animal health technician/technologist**), is a person trained to assist veterinarians.



Veterinary technician logo

Job description

Technical skills include: venipuncture; collecting urine; performing skin scrapings; taking and processing radiographs; and performing routine lab procedures and tests in: hematology, biochemistry, chemistry, microbiology, urinalysis, and serology. They assist the veterinarian with physical examinations that help determine the nature of the illness or injury. Veterinary technicians also perform and maintain anesthesia, and administer medications, fluids and blood products as prescribed by the veterinarian. Tasks in patient care include: recording temperature, pulse and respiration, dressing wounds, applying splints and other protective devices, and cleaning teeth. They perform catheterizations - urinary, arterial, and venous; ear flushes; intravenous feedings and tube feedings. Equipment use includes operating electrocardiographic, radiographic and ultrasonographic equipment. Veterinary technicians commonly assist veterinarians in surgery by providing correct equipment and instruments and by assuring that monitoring and support equipment such as anesthetic machines, cardiac monitors, scopes and breathing apparatus are in good working condition. They may also maintain treatment records and inventory of all pharmaceuticals, equipment and supplies, and help with other administrative tasks within a veterinary practice.

Education and credentialing

United States & Canada

To become a credentialed veterinary technician, one must complete a two or three year degree at an AVMA-accredited school, most of which terminate in the awarding of an associate of applied science in veterinary technology (those enduring a four-year AVMA or CVMA accredited school terminating in the awarding of a bachelor's degree are considered veterinary technologists though the distinction is rarely made an issue). The education a credentialed technician receives is in-depth and crucial for medical understanding and to give proper health care. The American Veterinary Medical Association (AVMA) and Canadian Veterinary Medical Association (CVMA) are responsible for accrediting schools with either Associate's degrees or Bachelor's degrees, though in some states or provinces this is not necessary. The AVMA also accredits schools that offer distance education. As a requirement of AVMA-accreditation, all distance learning programs require a significant amount of practical clinical experience before the student will be allowed to graduate. Clinical experience is usually obtained by employment or volunteer hours at an animal clinic. Preceptors must be a veterinarian or a credentialed vet technician and are required to instruct and sign off on clinical tasks, and then submit the records to the school for approval; some tasks must be videotaped and submitted to the school for grading. Though rare and competitive, there exists, in some large multi-specialty practices, one-year rotational internships available to veterinary technology students upon graduation.

Gaining a degree in veterinary technology is only a part of the requirements for credentialing. Veterinary technology degree holders who wish to be credentialed must generally also pass some sort of credentialing exams based upon the requirements of the

state, province or country in which they live. In the United States, these exams are usually the Veterinary Technician National Exam ()and an exam written by whatever governing body bestows credentials to veterinary technicians in that state. Depending on the state that a technician is working towards credentialing in, these tests may be administered by a United States licensing board, state veterinary medical association or state veterinary technician association. The type of credential granted to technicians also varies from state to state based upon the laws that govern that state and the type of organization granting credentals. Veterinary technicians may be licensed [LVT (LVMT—Licensed Veterinary Medical Technician in Tennessee)], registered (RVT) or certified (CVT). Some veterinary technologists have adopted the custom of adding a terminal lower-case "g" as a distinguishing factor (e.g. RVTg, LVTg, LVMTg, CVTg). Licensure is granted by a legal governing body such as a state licensing board and indicates that only people who hold a license may represent themselves as a "veterinary technician" or perform certain tasks. Registration refers to the keeping of lists of people who have met specific requirements to be a veterinary technician but in most instances doesn't limit certain actions or the use of the term "veterinary technician" to only those who are registered. Certification is generally bestowed by a private organization such as a school or professional organization and holds no legal connotation. Certification is often granted by the state veterinary technician association in states where neither the laws nor the veterinary medical association require or recommend credentialing of technicians. The term Animal Health Technician (AHT) is still used in some provinces of Canada and was once commonly used in the United States before giving way to the current moniker of veterinary technician. As with VT's there are (or have been) RAHT's, LAHT's and CAHT's.

While it used to be very common that people with a set number of years or hours of experience assisting a veterinarian could sit for these exams that is now only allowed in a handful of states and will be phased out by 2011 in any state which uses the Veterinary Technician National Exam. (a deadline set by the owners of the Veterinary Technician National Exam).

In most anglophonic countries outside North America veterinary technicians are known as Veterinary Nurses (VNs). The American Nursing Association and some state nursing associations have claimed proprietary rights to the term "nurse", thus it is not used as a credential for veterinary personnel in North America. While this claim has been debated *ad nauseam*, there is no case law to date supporting this claim. Some veterinary technicians argue that even though their scope of responsibility is broader than that of nurses (filling the roles of nurse, radiology technician, laboratory technician, pharmacy technician, etc.) they still spend approximately 90% of their time performing nursing tasks and should therefore be allowed to be called Veterinary Nurses like their counterparts outside North America. Unofficially in conversation with veterinary clientele veterinary technicians are often referred to as veterinary nurses simply because it is the most succinct, albeit incomplete, description that the clientele can relate to. What is now the British Veterinary Nursing Association faced similar opposition early on from the nursing community in their country.

Laws differ greatly from state to state. Contact your state's Veterinary Medical Board to find out what laws bind Veterinary Technicians in your state. Veterinary technicians' interests are represented nationally in the United States and Canada by the National Association of Veterinary Technicians in America (NAVTA—formerly the North American Veterinary Technician Association) and the Canadian Association of Animal Health Technicians (CAAHT) respectively. Each state also tends to have its own veterinary technician association which represents the interests of veterinary technicians in that particular state. Membership in state veterinary technician associations is very important as these are the groups that present the needs and desires of veterinary technicians to the state lawmakers and veterinary medical associations. As it is each state's right to set the laws and rules which govern the practice of veterinary technology and veterinary medicine, representation on a state level is necessary to address the specific needs of veterinary technicians in their state.

Specialty certification

Beyond credentialing as a veterinary technician specialty certification is also available to technicians with advanced skills. To date there are specialty recognitions in: emergency & critical care, anesthesiology, dentistry, small animal internal medicine, large animal internal medicine, cardiology, oncology, neurology, zoological medicine, equine veterinary nursing, surgery, behavior, nutrition, and clinical practice (canine/feline, avian/exotic, and production animal). Veterinary Technician Specialists carry the additional post-nominal letters "VTS" with their particular specialties indicated in parentheses. As veterinary technology evolves more specialty academy recognitions are anticipated.

Veterinary assistants

Non-credentialed personnel who perform similar tasks to veterinary technicians are usually referred to as veterinary assistants though the term technician is often applied generously. In many states, a veterinary assistant cannot legally perform as many procedures as a technician. Veterinary assistants often have no formal education related to veterinary medicine or veterinary technology. In larger facilities with tiered hierarchies veterinary assistants typically assist veterinary technicians in their duties.

Global presence

Veterinary technology as an organized and credentialed career option is relatively young only existing since the mid 20th century (although the seeds had been planted earlier in 1908 when the Canine Nurses Institute was established in England) and as such is still struggling for recognition in many parts of the world. Attempts at professional solidarity resulted in the creation of the International Veterinary Nurses and Technicians Association (IVNTA) in 1993. Its members currently include Australia, Canada, Denmark, Finland, France, Germany, Ghana, Hong Kong, Ireland, Japan, New Zealand, Norway, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States . In 2007 the Accreditation Committee for Veterinary Nurse Education

(ACOVENE) was established in an attempt to standardize veterinary technology education throughout the European Union and to allow movement of veterinary nurses educated in one member nation to employment in another .

Australia

Veterinary nurses in Australia have a two tier hierarchy consisting of Qualified Veterinary Nurses who hold a Certificate IV in veterinary nursing and Diplomaed Veterinary Nurses who hold a diploma in veterinary nursing. Diplomaed Veterinary Nurses may apply for further training in a specific field to receive "Extended" qualifications. Veterinary nurses exhibiting excellence in their field may be recognised jointly by the Veterinary Nurses Council of Australia (VNCA) and the Australian Veterinary Association (AVA) with the post-nominal letters AVN (Accredited Veterinary Nurse). There is also a newly created Bachelor of Applied Science, Veterinary Technology Extended major offered at the University of Queensland.

Belgium

Veterinary auxiliaries in Wallonia (the French speaking region of the Kingdom of Belgium) are known as "assistantes veterinaires" (veterinary assistants). There is a single state-recognized program in Belgium organized by la Communauté Française de Belgique. This is a two year program offered by l'Institut d'Enseignement de Promotion Sociale de la Communauté Française at Jupille. This program is still in its infancy and will graduate its first class in June 2011. There are non-state sanctioned programs offered in private institutions in Flanders (the Flemish or Dutch speaking region of Belgium). One of these programs, that offered at Katholieke Hogeschool Kempen in Geel, has received provisional accreditation from ACOVENE. At this time there is not a national organization representing veterinary assistants in Belgium. (Renaud Poizat, Dr. Vét. Lic. AESS biologie, program developer and instructor at l'Institut d'Enseignement, June 2010).

Finland

Veterinary nurses in Finland are represented by *Klinikkaeläinhoitajat ry* (Finnish Veterinary Nurses Association).

France

Veterinary support personnel in France consists of *Auxiliaire Vétérinaire Qualifiée* (AVQ), [formerly known as *Auxiliaire Vétérinaire* (AV)], and *Auxiliaire Spécialisée Vétérinaire* (ASV). The former's job description is similar to that of the veterinary assistant in North America and is achieved with one year of formal training while the latter's job description is similar to veterinary technicians in North America and is achieved with two years of formal training.

Ghana

Veterinary medical technicians in Ghana are represented by the Ghana Veterinary Medical Technicians Association (VEMTAG).

Ireland

Veterinary nurses in Ireland are represented by the Irish Veterinary Nursing Association (IVNA) since 2002 and prior to this were represented by the British Veterinary Nursing Association (BVNA) from the 1960s. Veterinary nursing became a regulated profession in the State from January 2008 under the Veterinary Practice Act 2005. The title 'veterinary nurse' can only be used by those registered with the Veterinary Council. Post-nominal letters used in Ireland are RVN (Registered Veterinary Nurse). A provisional register was created for the purpose of allowing experienced staff working in veterinary practices the opportunity to achieve formal education and qualification. Provisional registration confers the same rights and responsibilities as those on the Register enjoy except that those with provisional registration must have reached the standard required for entry to the Register by the 31 December 2012. Therefore, from January 2008 no individual can legally perform veterinary nursing duties unless listed on the Register or is currently undertaking a course of formal education approved by the Veterinary Council (Ann Marie Byrne, RVN, IVNA Chairperson, 10 mar 2009). To date, there are three programmes of study which qualify one to become a veterinary nurse in Ireland, each being sanctioned by the Veterinary Council of Ireland: the 2-year diploma course at St. John's College in Cork, the 3-year ordinary Bachelor of Science degree in Athlone I.T. and the 4-year higher (honours level) Bachelor of Science degree at University College Dublin.

Japan

Veterinary technicians & nurses in Japan are represented by the Japan Veterinary Nurses & Technicians Association (JVNTA).

New Zealand

Veterinary nursing in New Zealand is represented by the New Zealand Veterinary Nursing Association (NZVNA) which is subject to the Animal Nursing and Technology Board (ANTECH) of the New Zealand Veterinary Association (NZVA). Veterinary nurses hold either a National Certificate or Diploma in Veterinary Nursing. The National Certificate represents one year of formal training while the National Diploma represents an additional two years with the National Certificate or its equivalent as a prerequisite. There are thirteen providers of veterinary nursing education in New Zealand, eight of which award the National Certificates (others offer their own local courses). Other available entry-level certificates include the National Certificate in Animal Care and the Certificate in Rural Animal Technology. In 2009, Massey University started a new degree - the Bachelor of Veterinary Technology. It is a 3 year degree and the first class will graduate in 2011. Veterinary nurses in New Zealand are not currently required to be

registered with the government but an accreditation scheme is being explored. New Zealand veterinary nurses adopted a national work uniform in 2004 but its wear is optional.

Norway

Veterinary nurses/technicians in Norway are known as "*Dyrepleier*" and they along with veterinary assistants are represented by the Norwegian Veterinary Nurse and Assistant Association (NDAF--*Norsk Dyrepleier og Assistent Forening*). The Norwegian veterinary nurse/technician education is a two year university level program taught exclusively at the Norwegian School of Veterinary Science. Prior to 2003 it was a one year program followed by one year of practical experience. Nurse/technician graduates of the Norwegian School of Veterinary Science must apply for an official authorisation issued from the Norwegian Food Safety Authority (*Mattilsynet*) in order to use the title "*Dyrepleier*".

South Africa

Veterinary Nurses (VN's) in South Africa attend a two year program at the Onderstepoort campus of the University of Pretoria culminating in a diploma in veterinary nursing (DipVetNurs or DVN) and unlike lay staff are trained to do everything except clinical consultations and surgery subject to the Para-Veterinary Profession's Act. Qualified veterinary nurses, curiously of both genders, utilize the title of "Sister (Sr.)", similar to the practice of female charge nurses in the human medical field in many countries, representing their professional sisterhood. They can be recognised by the wearing of epaulettes bearing a lamb, representing the patients they care for; a lamp, representing knowledge; and an axe, symbolising strength (Sr. Tania Serfontein, vice-president, VNASA, February 2009). They are represented by the Veterinary Nurses Association of South Africa (VNASA) which was started in 1978 after South Africa's first class of qualified veterinary nurses graduated. Permission to offer a Bachelor of Veterinary Nursing through the University of Pretoria was recently applied for to the South African Qualifications Authority.

Sweden

Veterinary nurses (as well as veterinary radiographers, administrative personnel, and laboratory assistants) have been represented in Sweden since 1997 by *Riksföreningen Anställda Inom Djursjukvården* (RAID—The Swedish Veterinary Nurse Association). Education consists of a two-year 80 credit post-secondary program at the Swedish University of Agricultural Sciences (SLU). RAID has also devised a distance learning course for experienced nurses and organizes continuing education for para-professionals in the equine and small-animal sectors.

Switzerland

Veterinary medical assistants in Switzerland [*Tiermedizinische/r Praxisassistent/in* / *assistantes en médecine vétérinaire* (AMV)/*assistenti medicina* veterinari *(AMV)*] organized in 1991 in Berne and are represented by the Swiss Association of Veterinary Medical Assistants ["*Vereinigung der schweizerischen tiermedizinischen Praxisassistentinnen/Association Suisse des assistantes en médecine vétérinaire/Associazione Svizzera di assistenti medicina Veterinari* (VSTPA/ASAMV)]. The curriculum is offered in German in two or three schools and in French at a single site—Ecole Panorama in Lausanne—where students meet each Thursday starting in late August during a three year apprenticeship for lessons in theory and one day per month for practical training. This training culminates in the award of the National Certificate [*Eidgenössisches Fähigkeitszeugnis als gelernte/r/Certificat Fédéral de Capacité/Attestato federale di capacità* (CFC)]in veterinary medical assisting.

Turkey

Veterinary technicians in Turkey are represented by *Veteriner Saglik Teknisyenleri Dernegi* (Association of Veterinary Technicians in Turkey).

United Kingdom

Qualified veterinary nurses in the UK must be registered or listed with the Royal College of Veterinary Surgeons (RCVS). Registered or Listed veterinary nurses have dispensations in law (the Veterinary Surgeons Act) to undertake certain procedures on animals under veterinary direction. Registered veterinary nurses (RVNs) have are bound by a code of professional conduct and are obliged to maintain their professional knowledge and skills through ongoing CPD.

RVNs train for the Register through either a two-year further education diploma programme or via a qualifying foundation or honours degree. All student nurses must complete a significant amount of work experience in general veterinary practice during their training.

Qualified VNs often wear the accepted uniform of bottle green and the scarlet and pewter RCVS badge, issued on qualification. However qualified veterinary nurses may also wear their veterinary practice's corporate colours. RCVS badges are engraved with the nurse's personal badge number, however badges are a sign of having achieved a VN qualification and not of a person's current registered status.

Unqualified nursing staff may be called Animal Nursing Assistants or Veterinary Care Assistants. These lay staff have usually undertaken some basic veterinary nurse training but are limited by law as to the procedures they may undertake on animals. They work alongside qualified vets and veterinary nurses to provide care and support to animal patients and their owners.

UK veterinary nurses are represented by the British Veterinary Nursing Association (BVNA). VN's can further their formal training with a BVNA specialist course Certificate in Dentistry and\or by achieving the RCVS Diploma in Advanced Veterinary Nursing (DipAVN) by following a course of study in one or more of three pathways: Small animal nursing, Equine nursing, and Veterinary nursing education.

Veterinary Technician Oath

"I solemnly dedicate myself to aiding animals and society by providing excellent care and services for animals, by alleviating animal suffering, and promoting public health. I accept my obligations to practice my profession conscientiously and with sensitivity, adhering to the profession's Code of Ethics, and furthering my knowledge and competence through a commitment to lifelong learning."

Chapter- 13

Veterinary Medicine

A cat after surgery. Antibiotics and morphine are delivered via various intravenous drips.

Veterinary medicine is the branch of science that deals with the application of medical, surgical, public health, dental, diagnostic, and therapeutic principles to non-human animals, including wildlife and domesticated animals, including livestock, working animals, and companion animals. Practitioners of veterinary medicine are known as veterinarians. In most developed countries, veterinarians are highly qualified professionals with advanced educations.

Veterinary science helps human health through the monitoring and control of zoonotic disease (infectious disease transmitted from non-human animals to humans, and veterinary scientists often collaborate with epidemiologists.

History

A pillar in Vaishali, India, displaying edicts of Emperor Asoka (272—231 BCE); the pillar records King Asoka building hospitals for both humans and animals.

"The Simplicity Equine," a portable operating table for horses used by the field veterinarians of the US Army Signal Corps in World War I

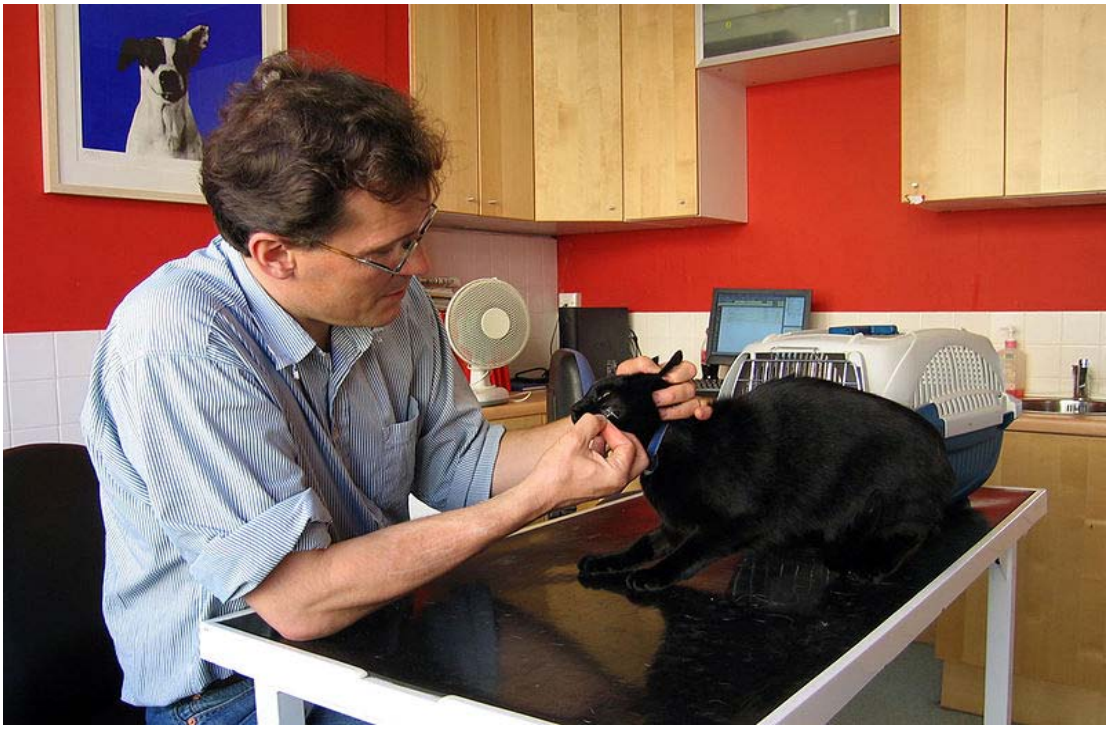
An injured horse being secured to the vertically oriented table

With the table rotated to its horizontal orientation and supported by a drum on one side and folding cot-like legs on the other, a veterinarian operates on a horse.

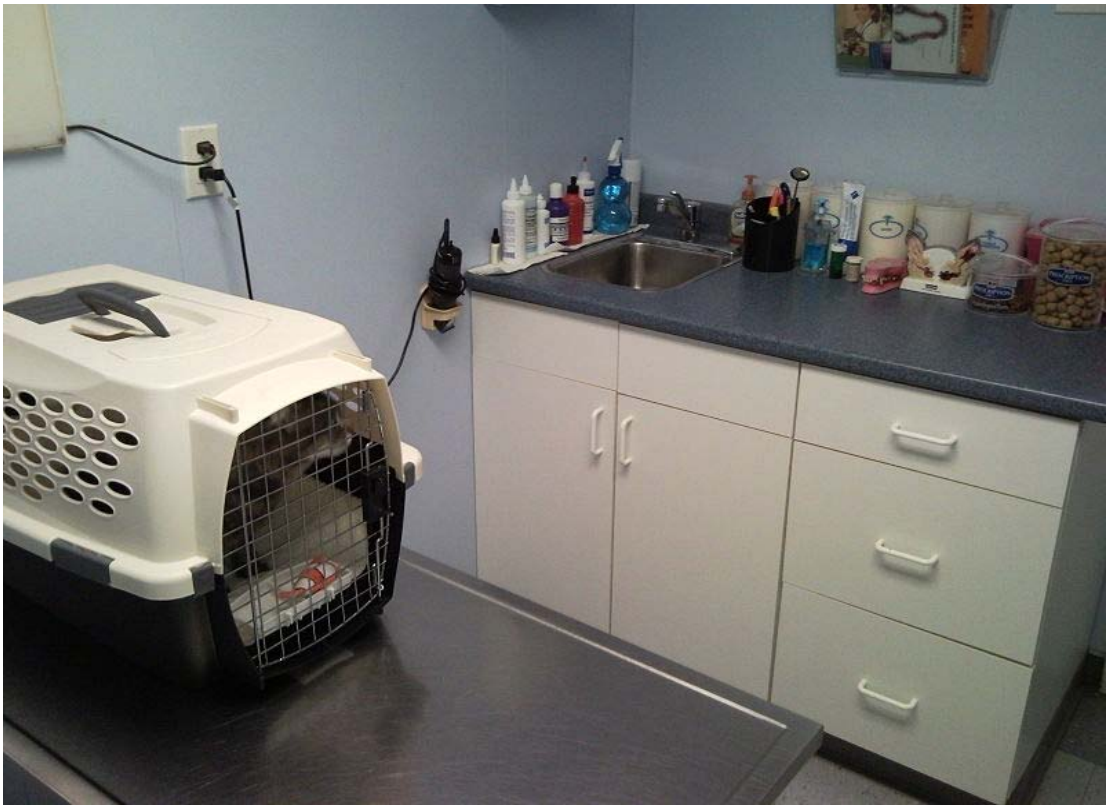
The Egyptian *Papyrus of Kahun* (1900 BCE) and Vedic literature in ancient India offer the first written records of veterinary medicine. One of the edicts of Ashoka reads: "Everywhere King Piyadasi (Asoka) erected two kinds of hospitals, hospitals for people and hospitals for animals. Where there were no healing herbs for people and animals, he ordered that they be bought and planted." The Talmud does state that no mares were exported from Egypt in Roman times without being subjected to a hysterectomy, which tend to prove that successful surgery was implemented in such an early period.

Modern veterinary medicine

Some animal hospitals have segregated waiting rooms for dogs and cats



A veterinary surgeon in Cambridge, UK at work with a black cat



Patient awaiting discharge after completing 11 days in the hospital

Patient, with clouded eyes, on day five of hospital stay as she recovers from second surgery

Same patient after one week of hospital stay and third surgery, eyes have cleared up

Same patient, same day, in play, yellow bandage protects intravenous insertion sites

Modern veterinary medicine is aided by the availability of advanced diagnostic and therapeutic techniques for many species. Today animals may receive advanced medical, dental, and surgical care, including insulin injections, root canals, hip replacements, cataract extractions, and pacemakers.

Veterinary specialization has become more common in recent years. Currently, 20 veterinary specialties are recognized by the American Veterinary Medical Association (AVMA), including anesthesiology, behavior, dermatology, emergency and critical care, internal medicine, cardiology, oncology, ophthalmology, neurology, radiology and surgery. To become a specialist, a veterinarian must complete additional training after

graduation from veterinary school in the form of an internship and residency, and then pass a rigorous examination.

Veterinarians assist in ensuring the quality, quantity, and security of food supplies by working to maintain the health of livestock and inspecting the meat itself. Veterinary scientists occupy important positions in biological, chemical, agricultural and pharmaceutical research.

In many countries, equine veterinary medicine is also a specialized field. Clinical work with horses involves mainly locomotor and orthopedic problems, digestive tract disorders (including equine colic, which is a major cause of death among domesticated horses), and respiratory tract infections and disease.

Zoologic medicine, which encompasses the healthcare of zoo and wild animal populations, is another veterinary specialty that has grown in importance and sophistication in recent years as wildlife conservation has become more urgent.

Today's veterinarian

According to consumer surveys, the veterinarian ranks across the United States as one of the most respected career paths. Veterinarians are encouraged to take an oath in which they swear to use their knowledge and skills for the overall benefit of society through protecting the health needs of every species of animal and also environmental protection, food safety, and public health. Many of today's veterinarians are dedicated to working long difficult hours to live out this oath in their respective practices.

There are many personal attributes that contribute to a successful career in veterinary medicine, the most important being a scientific mind, good communication skills, and management experience. Having a scientific mind consists of having an inquiring mind and a keen sense of observation. A career in veterinary medicine means a lifelong pursuit in scientific learning, so an interest in the biological sciences is a must and a genuine love and understanding of animals is crucial. Good communication skills are vital because veterinarians should be able to meet, talk, and work well with a variety of personalities and characters. Compassion is essential for success in the career field because they will be working directly with their animal client's human owners, who most likely have strong bonds with their pets. Many of the fields within the career require the veterinarians to manage other employees and businesses as a whole. These positions are made more rewarding and simpler if one has a background in basic management or leadership positions.

A study was performed in attempts to discover professional identity and professionals' workplace learning based on a theoretical proposal. Veterinarians were found to approach workplace learning differently according to two key variables: perceived alignment with professional identity and perceived importance to professional practice. Differences were evident when comparing how veterinarians approached learning about the medical aspects of their profession in contrast to practice management that consisted of

nonmedical disciplines that are a definite part of veterinary practice. It was common for these veterinarians to associate their professional identity with scientific, medical, clinical disciplines, but less common for these veterinarians to include the nonmedical disciplines.

For this study, two men by the names of Hoskin and Anderson-Gough in 2004 helped to lay a foundation with their explanation in the effects of disciplinary action on workplace learning. They found that educational systems that produce members of established disciplines tend to be highly specialized. This then resulted in significant influence on the type of content that is transmitted in the process of becoming qualified to practice a professional discipline. Furthermore, according to two men by the names of Lewis and Klausner in 2003 it was found that veterinary schools in the United States recognize that it is their role to be gatekeepers of the profession. They are beginning to understand the full responsibility for selecting candidates who have the skills to capitalize on their education and build a successful career. It is their responsibility because it is their institution that has a significant amount of influence in the type or personality of the individual that will then graduate with a degree to practice animal medicine. This personality is then directly correlated to whether or not the graduate succeeds in their profession or does not succeed.

Overview

An animal hospital in North Smithfield, Rhode Island

As in the human health field, veterinary medicine (in practice) requires a diverse group of professionals to meet the needs of patients. In the year 2006, veterinarians held about 62,000 jobs.

According to the American Veterinary Medical Association, about three-quarters of veterinarians were employed in either an individual or group practice. The remainder were employees in other settings, including colleges of veterinary medicine, medical schools, research laboratories, animal food companies, and pharmaceutical companies. The Bureau of Labor Statistics reports that around 1,400 civilian veterinarians are employed by the United States federal government, mainly in the Department of Agriculture, Department of Health and Human Services, and Department of Homeland Security. State and local governments also employ veterinarians.

Employment is expected to increase more than average and much faster in comparison to other career options, ensuring job opportunities in the field of veterinary medicine. It has been stated that this expected increase is near 35% over the next decade; it is a direct result of the increase of certain pet populations, such as cats, and the increased amount of pet owners willing to purchase pet insurance, which then increases the amount of treatment that the owner is willing to fund. Additionally, modern veterinary medicine has caught up to human medicine in many areas such as cancer treatment, preventative dental care, hip replacements, transplants, and blood transfusions. These medical advances have encouraged pet owners to take advantage of these new medical possibilities, likewise increasing the need for veterinary care because of the increased demand. One other area of increased demand for veterinarians in seen in the continued support for public health and food and animal safety, CDC national disease control programs, and biomedical research on human health problems.

These job opportunities can be expected because there are only 28 accredited Veterinary medicine schools in the United States and five in Canada, creating stiff competition for admittance into veterinary school. This small number of schools results in a limited number of graduates each year, averaging around 2,700 in the US each academic year.

There continues to be a steady trend in the different fields of veterinary medicine, which doctors go into these respective fields, and what hours they usually take on to work. New graduates continue to be attracted to companion-animal or small animal practice because they prefer to work with pets and live/work in metropolitan areas. Therefore, employment opportunities are good in cities and suburbs, but tend to be better in rural areas because fewer veterinarians compete for work in those areas. Beginning veterinarians may take positions requiring evening or weekends to accommodate the extended hours of practice that many places offer. Then there are some veterinarians that take salaried positions in retail stores offering veterinary services whereas others that are self-employed have to work long and hard to establish a good client base. The number for large animal veterinarians is much less than that of companion or small animal veterinarians. This is directly correlated to the simple fact that most people do not want to live/work in rural or isolated areas. Nevertheless job prospects are great in the large animal practice because of the previously stated tendencies. Finally, veterinarians with training or qualifications in

food safety and security, animal health and welfare, and public health and epidemiology should have the best opportunities for a career within one of the departments of the Federal Government .

Threatening veterinary shortage

A shortage of veterinarians who treat farm animals is stressing the nation's food inspection system. This shortage is becoming so severe that it is prompting the Federal Government to offer bonuses and cover moving expenses to fill hundreds of empty employment opportunities. The result of this shortage is mainly due to veterinarians choosing to live in metropolitan areas and pursue a practice specializing in pets or small animals. The main scarcity is seen in veterinarians who treat farm animals or work as government inspectors. The shortage is most severe in the USA's Farm Belt, which is in the rural areas of the Midwest that is responsible for much of the nations meat production.

The American Veterinary Medical Association reported there are roughly 500 counties that have large populations of food animals, but no veterinarian to treat these animals. The common concern of a lesser salary in the farm animal field was disproven by the statistics showing that starting salaries for private practice veterinarians are generally higher than that of public practice veterinarians, but after about 10 years of practice they roughly even out. The Bureau of Labor Statistics also reports that the number of veterinarians needed will just continue to increase to 22,000 by the year 2016. This would make it one of the fastest growing professions. The nation's 28 veterinary schools provide around 2,700 graduates a year, something that has not changed in three decades. However, something that has changed is the fact that the baby boomer generation, the generation that fills the employment for farm animals mostly, is retiring fast and therefore hastening the shortage.

Gender distribution

Historically, veterinary medicine used to be a man's world. Nowadays, most students in veterinary school are women, and it was in 2005 that women become the majority. For instance, out of the 77 new doctors from Tufts University, 62 of them are women, 75 percent of 2002 graduates were women, and 81 percent of those from the University of California at Davis were women. According to the Employment Policy Foundation, the number of female veterinarians since 1991 has more than doubled to 24,356, while the number of male veterinarians has fallen 15 percent to 33,461. This trend will continue based on the statistics of the applicant pool and the gender distribution in the various veterinary schools.

Women have also made these increased strides in other professions, such as law and medicine, where the distribution is half and half, but the number of women in veterinary medicine is shocking. Many veterinary students have reported that the reason for this is because veterinary salaries are not as competitive as those of other medical professions. Veterinarians average $70–80,000 a year, whereas physicians can easily average

$150,000 a year. This shift in gender distribution can also be attributed to the personality of this career and the qualities that would result in the most successful practice. Additionally, women are attracted to the flexible scheduling and part-time physicians are not very common, but part-time veterinarians are.

The shift of women becoming the majority in veterinary medicine have some negative effect in areas such as farm animal and food industry veterinarians, causing them to suffer. This is because women tend to not go into these fields and consequently the shortage that is produced has negative effects on the community as a whole.

Earnings

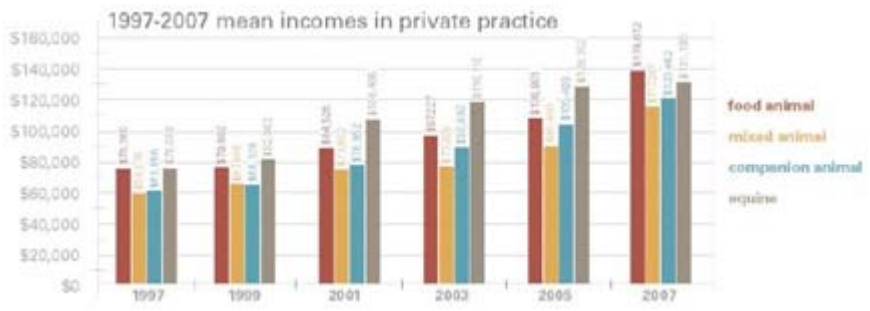
Veterinarians' incomes continued to increase during 2005–2007, but this increase is not expected to continue as much in the years of 2007-2009 . Salaries in the field of veterinary medicine vary depending on the individuals' experience, responsibility, location geographically, and field of employment . In particular at the end of 2007, veterinarians who worked in private practice earned more in comparison to many other areas of public practice, and men still earned more than women .

Furthermore, according to the survey done by the American Veterinary Medical Association, the average starting salaries of new graduates in 2006 depended upon their respective fields of practice. The Bureau of Labor Statistics in the Occupational Outlook Handbook, 2008-2009 Edition recorded the following

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

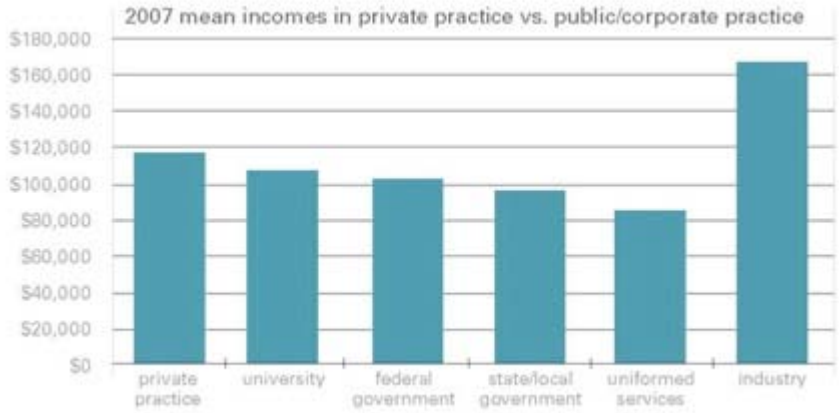
In addition in May 2006 the annual earnings of veterinarians was $71,990. These data range between fields, specialties, experience, and many other factors, but the middle 50 percent noted in the data provided earned $43,530 and $94,880. The lowest 10 percent earned less than $43,530 and the highest 10 percent earned more than $133,150. In particular, the average annual salary for veterinarians in the Federal Government was $84,335 .

Veterinary incomes are up across the board, but some areas of employment are doing better than others, and the reasons for this were explored.



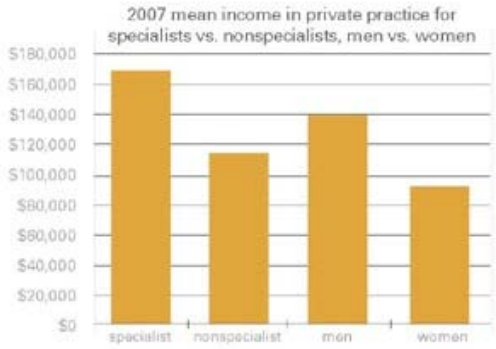
From AVMA Survey, Katie Burns

The average income for private practice rose from $105,510 in 2005 to $115,447 in 2007. These increased values exceed those of public practice including uniformed services and government .



From AVMA Survey, Katie Burns

On almost the same scale of income, disparities between specialists and nonspecialists are men and women.



From AVMA Survey, Katie Burns

Criticisms

Concerns about the role of veterinary surgeons in helping health threats survive and spread have been raised by several commentators, particularly with respect to pedigree dogs. Koharik Arman (2007) reached the following conclusion for example: "Veterinarians also bear some responsibility for the welfare situation of purebred dogs. In fact, the veterinary profession has facilitated the evolution of purebred dogs. 'Breeds' that would not normally be sustainable are propagated by the compliance of veterinarians to breeder wishes." A finding that was echoed by Sir Patrick Bateson in his Independent Review of Dog Breeding following the broadcast of the BBC documentary Pedigree Dogs Exposed: "Its only the ready availability of modern veterinary medicine that has permitted some conditions…to become widespread."