



The Life of a Bovine Veterinarian

A teacher resource
developed by the
American Veterinary
Medical Association

www.avma.org



Why have a teacher guide?

The goal of AVMA sponsored 4th-6th grade learning activities is to heighten awareness of the vital role that veterinary medicine plays in the lives of humans, animals, society, and the environment. This initiative has five objectives:

- To teach children that there is an inseparable relationship between animals and humans
- To teach children that veterinary science makes vital contributions to our world
- To teach children that veterinary science significantly impacts their lives every day
- To interest young students in a career involving biology, mathematics, and applied science
- To promote a greater understanding of the scope of veterinary medicine

What does a bovine veterinarian do?

A bovine veterinarian is one who works with beef cattle or dairy cows and their calves. These busy veterinarians never know for sure what the day will bring. While many appointments are scheduled in advance, an animal emergency on a ranch or a farm can happen at any time. Bovine veterinarians always carry a pager or a cell phone, so they can be contacted wherever they are and whenever they are needed. Since bovine veterinarians must drive out to see their patients, they may occasionally have to travel one to two hours to reach a client's property.

What equipment does a bovine veterinarian take on calls?

Because the veterinarian is going out to the farm or ranch, he/she must carry all necessary medical supplies in the truck, which literally becomes a clinic on wheels. Common supplies include examination instruments (e.g., stethoscope and thermometer), medicines (e.g., antibiotics and pain relievers), bandages, vaccines, coveralls and boots, portable x-ray equipment, and a variety of surgical equipment and instruments.

What precautions does a bovine veterinarian take when treating patients?

The veterinarian must be careful not to transfer germs (e.g., bacteria or viruses) from one animal or farm to another. That means he or she has to wear proper clothing (usually coveralls and rubber boots) and disinfect the boots and change the coveralls after each appointment. The coveralls are laundered with disinfectant soap before they are worn again. In addition to wearing the proper clothes, the veterinarian washes his/her hands with disinfectant soap. This minimizes the possibility of transferring germs from one animal to another and helps protect the veterinarian from catching a zoonotic disease from an animal.

What are typical situations a bovine veterinarian would encounter in his/her work?

To stay in business, ranches and farms need to have pregnant cows to produce calves for sale or to be used as herd replacements. Therefore, one of the bovine veterinarian's most important tasks is checking the cows to determine if they are pregnant. Wearing a long plastic glove called an obstetrical (OB) sleeve, the veterinarian puts his/her hand in the cow's rectum and feels (palpates) its uterus for evidence of pregnancy.

Usually a cow can give birth without help, but if the calf is large or positioned incorrectly in the birth canal, the cow may need assistance. In this case, the cow needs to be restrained (so she doesn't move around) and the veterinarian must wash his/her hands with disinfectant soap to avoid passing any germs to the cow or the calf. Next, the veterinarian puts on an obstetrical sleeve, puts sterile lubricant on the sleeve, and reaches into the birth canal to determine how the calf is positioned. Normally, a calf is born head first, with its front legs extended in front of its head and body. If the calf is in the wrong position, the veterinarian has to reposition the calf by gently pulling and pushing on different parts of the calf's body. Next, the veterinarian attaches calving chains or straps to the calf's legs. The chains/straps are wrapped so they don't put too much pressure on the calf's delicate legs. It often takes two people, one pulling on each chain, to get the calf moving through the birth canal. If the calf can't be delivered normally, then a Caesarean section (or c-section) may be necessary. This involves an incision in the cow's abdomen to remove the calf. If the calf is a female it is called a *heifer*. If it is a male, it is called a *bull*.

Before an animal can be sold and shipped from one state to another, the animal must be examined by a veterinarian to ensure that the animal is healthy. The health exam includes checking the animal's heart, lungs, eyes, legs and feet, intestinal sounds and manure, and teeth. Once the animal is declared healthy, the veterinarian fills out a *health certificate*.

Cattle need to be vaccinated to protect them from potentially deadly diseases. They are often corralled and led through a special chute to protect them and the veterinarian. Once the cow has been restrained to keep it from moving too much during the procedure, it is easier and safer for the veterinarian to vaccinate, insert ear tags (for identification), or perform other procedures and keep the cattle moving along in an orderly manner.

While people have only one compartment to their stomachs, cows have four separate compartments — the reticulum, rumen, omasum, and abomasum. Sometimes, the abomasum can move to the wrong place or become twisted, causing the animal pain. Surgery may be necessary to correct the problem, and is usually done while the cow is standing up in a cattle chute. The cow's skin is anesthetized so it doesn't feel the incision being made with the scalpel.

What does a bovine veterinarian do in addition to treating patients?

Record keeping

- Cow-calf veterinarians and producers keep detailed records about every cow to monitor each animal's health and production. The veterinarian also needs to keep records in order to generate accurate bills for veterinary services provided.

Meeting government reporting requirements

- Because many diseases that affect animals can spread to other animals or to people, the veterinarian must report any signs of those diseases immediately to state or federal veterinarians for further investigation.

Maintaining animal health and food safety

- Veterinarians ensure food-producing cattle stay healthy so that the milk and meat from them can be safely consumed by people.

Continuing education

- The science of herd health is constantly evolving as new information is discovered, so veterinarians make it a part of their professional growth to learn the latest developments. They read journals, attend educational meetings, and take training courses on a regular basis in order to stay current in their work.

What other types of veterinarians work with animals that are a part of our food supply?

Swine veterinarians—veterinarians who provide health care for pigs.

Poultry veterinarians—veterinarians who provide health care for chickens, turkeys, geese, and game birds raised as food.

Aquaculture veterinarians—veterinarians who provide health care for fish that are raised on fish farms.

Small ruminant veterinarians—these veterinarians provide health care for sheep and goats.

Enrichment ideas:



The timeline on your poster features several medical advances showing how veterinarians keep animals and people healthy. Extend this lesson using the timeline.

1885—Veterinary scientist Dr. Daniel E. Salmon discovered the first strain of *Salmonella* and pioneered the fight against infectious diseases. The discovery of this potentially deadly bacterium that causes food poisoning has saved the lives of millions of people and animals.

1996—Dr. Peter Doherty, a veterinary researcher at St. Jude Children's Research Hospital in Memphis, Tennessee, was awarded the Nobel Prize for his discovery of how the body's immune system protects us from infections. This discovery led to further research in the prevention and treatment of infections in both animals and people.

Glossary:

- **Anesthetic**—a medication administered to numb an area of the body
- **Antibiotics**—medications that kill bacteria or other germs
- **Calving chains or straps**—a set of two stainless steel chains (or nylon straps) that are carefully wrapped around an unborn calf's legs so two people can help pull the calf through the birth canal
- **Cattle chute**—an alleyway or path enclosed by fencing that moves cows from one area to another; it allows cows to be moved with less risk of injury to people
- **Disinfectant**—a chemical that kills germs on surfaces (like boots or equipment)
- **Headgate**—a device used to restrain cattle (to keep them from moving) while being vaccinated or treated
- **Heifer**—a female calf or cow
- **Insecticide**—a medication that kills insects
- **OB sleeve**—a long, thin plastic glove worn over the veterinarian's hand and arm
- **Placenta**—the uterine membranes that provide nutrients and blood supply to the developing fetus
- **Sedate**—to give a drug that will make the animal drowsy and less responsive to procedures performed on it.
- **Stethoscope**—a device for listening to an animal's heart, lungs, intestinal sounds, etc.
- **Syringe**—a cylinder used to give injections; a hypodermic needle is attached to the syringe to give injections
- **Tranquilizer**—a medication to calm and relax an animal
- **Vaccine**—a weakened form of a germ that stimulates an animal's immune system to fight the disease if the animal is exposed to it at a later time
- **Zoonotic**—a disease that is passed from animals to people or to other species of animals

Additional Resources:

www.avma.org American Veterinary Medical Association
www.ext.vt.edu/news/periodicals/livestock/aps-98_02/aps-881.html
Virginia Cooperative Extension Cow-Calf Manager information
www.aabp.org American Association of Bovine Practitioners
www.aasrp.org American Association of Small Ruminant Practitioners
www.aasv.org American Association of Swine Veterinarians
www.wvpa.net World Veterinary Poultry Association
www.ffa.org/ Future Farmers of America
www.avma.org/onlnews/javma/jan03/030115a.asp Shortage of farm animal veterinarians
www.ext.vt.edu/resources/4h/virtualfarm/main.html 4-H Virtual Farm
www.avma.org/fsvm/default.asp information about food supply veterinarians
www.multcolib.org/homework/animhc.html Library of animal information

Student Activities:

4th Grade Activity Sheet: *Interview Questions to Ask a Veterinarian:* The students will generate a list of questions to ask a bovine veterinarian about his/her job; a list of questions that a farmer or rancher might ask a bovine veterinarian about a sick cow; and questions students might ask a neighborhood veterinarian about pets or local wild animals.

5th Grade Activity Sheet: *Life Cycle Stages of a Dairy Cow:* Using the Internet as a research tool, the students will draw a series of pictures that illustrate the stages in the life cycle of a dairy cow from new born calf to mature adult.

6th Grade Activity Sheet: *Food Production Veterinary Science*: Students will research food production veterinary science on the Internet, in library books, videos/DVDs, newspapers, and periodicals. They will then write a story using the facts that they learned.

Vocabulary Crossword Puzzle Activity Sheet: The students will demonstrate knowledge of vocabulary words by correctly solving a crossword puzzle using the definitions of each word as clues.
