

Professional Conduct and Foundation Skills

LEARNING OBJECTIVES

- Determining your role in a veterinary practice
- Meeting employer expectations, mastering 10 professional behaviors
- Develop a professional appearance
- Utilize effective communication skills – verbal, written, computer, social media, and credible web resources
- Anticipate work flow
- Application of ethics in the veterinary practice
- Understand the human–animal bond
- Understand and recognize the grief process
- Master foundation skills:
 - Veterinary practice math
 - Medical terminology

NAVTA GUIDELINES COVERED IN THIS CHAPTER

- I. Office and Hospital Procedures
 - A. Front desk
 8. Demonstrate elementary computer skills
 9. Utilize basic medical terminology and abbreviations

Determining Your Role in a Veterinary Practice

A veterinary practice may be conducted in a hospital or a clinic. In human medicine there is a distinct difference. Hospitals are where patients are treated and cared for

“in-house” or in a facility. A clinic is where patients are seen and sent home to recover or are sent to a hospital for more intensive care. In veterinary practice, the words “hospital” and “clinic” are used interchangeably, as both will admit critical patients into their facility for intensive care. However, some cities have access to a relatively new type of veterinary practice that does nothing but intensive

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and emergency care. Patients are transferred to these facilities for around the clock care, thereby freeing general clinic and hospital practices to focus on general care. What this means is that whatever the type of clinic or hospital, it requires staffing. Let's discuss the staffing required in a veterinary practice.

A veterinary practice consists of many staff members. It takes the specialized skills of each to provide the competent care that pet owners expect for their pets. The veterinary assistant is just one member of the veterinary team. Synchronization of their duties with those of other members of this specialized team requires an awareness of the responsibilities of each. Understanding how the assistant fits into the complex pattern is crucial to successful coordination of patient care and implementation.

Every practice requires at least one veterinarian. This person can either be the owner of the practice or an employee. To become a veterinarian one must complete an undergraduate course at a college or university. It usually takes four years to complete the undergrad requirements, with most receiving a bachelor's degree in the subject of their choice. Then students must be accepted at a college of veterinary medicine which is another four years of education to receive either a Doctor of Veterinary Medicine (DVM) or a Veterinariae Medicinae Doctoris (VMD) depending on the college of veterinary medicine attended. In order to practice veterinary medicine, new graduates must pass a licensing exam for each state in which they wish to practice. Without this they cannot practice in a state even with a degree in hand! Some veterinarians chose to specialize in a specific area of veterinary medicine which involves additional years of study and another round of exams administered by an organization dedicated solely to that field of study. For example, a DVM interested in ophthalmology does everything required by the College of Veterinary Ophthalmologists and passes their exam to become a Diplomat in Veterinary Ophthalmology. But the learning still isn't finished! The state the veterinarian is practicing in, and if specialized the "College," requires several hours of continuing education per year to maintain their license to practice in that state and their diplomat status as a specialist.

The role of a veterinarian in practice is generally one that provides a diagnosis, prognoses, prescribes treatments and medications, and performs surgery on animals. The mission of the American Veterinary Medical Association (AVMA) is to lead the profession by advocating for its members and advancing the science and practice of veterinary medicine to improve animal and human health. It provides a Model Veterinary Practice Act that succinctly spells out the duties performed by a licensed veterinarian. In addition, the veterinarian is held legally responsible for the safety of all employees and all actions of each employee within the practice. The final word on the treatment of a patient is the veterinarian's.

According to the AVMA Model Veterinary Practice Act, technicians cannot diagnose, prognose, prescribe

medicine, or perform surgery. Veterinary technicians are educated to perform the same tasks as human nurses, surgery technicians/nurses, anesthetic nurses, laboratory, dental, and radiology technicians on animals in a veterinary practice. In addition, they play an integral part in client education and communication.

There are several ways to become a veterinary technician. One way is to attend an AVMA accredited veterinary technology program. This is a program that has met stringent guidelines for didactic and medical skills training. Most programs offer an Associate degree that can take from two to three years to complete and is offered in community, technical, or private colleges. There are also several bachelor's degree veterinary technologist programs across the USA that are offered in public and private colleges and universities. This may seem like overkill; however, if you change your mind about working in a veterinary practice a bachelor's degree opens the door to jobs within industry, business, research, and government. Another path to becoming a veterinary technician is to enroll in an AVMA accredited online program. You can work at your own pace and utilize a veterinary practice as your training facility. Once a person has graduated from an accredited program most states require the graduate to sit for a credentialing exam, the Veterinary Technician National Exam (VTNE), administered by the American Association of Veterinary State Boards (AAVSB), and is recorded by a state veterinary medical board. A few states offer voluntary credentialing which is recorded by either the state veterinary technician association or the veterinary medical association. There are also some states that don't require any sort of credentialing. The credential designation also depends upon the state. Those states that recognize veterinary technicians that have passed the VTNE grant them the designation of Certified, Registered, or Licensed Veterinary Technicians. This creates much confusion especially as all states that offer credentialing utilize the VTNE offered by the AAVSB. To address this confusion the National Association of Veterinary Technicians in America (NAVTA) has initiated a move to have all states recognize veterinary technicians and technologists as Registered Veterinary Nurses. It is hoped that with this change in terminology the confusion when moving from state to state will disappear and the public will more readily recognize the role that the veterinary nurse plays in a veterinary practice.

NAVTA offers specialty recognition to those technicians that are interested in various areas of practice, usually within veterinary specialty practices. There are currently 16 Academies that offer training and testing for technicians that are interested in obtaining a specialty designation.

Veterinary technicians are often included in state practice acts. The AVMA has included veterinary technicians/technologists in their Model Veterinary Practice Act.

Veterinary assistants are important members of the veterinary practice team. They are often the "right hand person"

for the veterinarian and veterinary technician, meaning that they help wherever and whenever help is needed in the day-to-day activities in the practice. “An assistant provides help under the direct supervision of the veterinarians or veterinary technicians. This allows those team members to perform the tasks and responsibilities of their positions as per their education and training” (NAVTA website). An assistant can be helping to restrain a kitten for an ear exam one minute and mopping up an accident in the reception area, answering the telephone, and scheduling an appointment the next. All the jobs done by an assistant are important to the well-being of the animals, clients, and staff in the veterinary practice. An assistant should be willing to jump in and do “whatever it takes” to keep the practice running smoothly. This is the hallmark of a first-rate veterinary assistant.

Assistants are often trained on the job but there is a certification program offered by many high schools, community colleges (some of which also have veterinary technology programs), and online programs. The NAVTA offers an Approved Veterinary Assistant (AVA) certificate after successful graduation from an approved veterinary assistant program and passing the veterinary assistant exam.

Developing an understanding of the flow of activities within a practice and how other staff members accomplish tasks is essential. This knowledge enables the assistant to prepare both material and patient in anticipation of the work to be done, thus creating an efficient sequence of work within the veterinary practice. It is in the preparation and follow-up phases of patient care, as much as the simultaneous help, that makes assistants so valuable to the practice.

Office personnel are those who handle the business side of a veterinary practice. Included in this group are the receptionists. They are the voice and face of the practice. This means they are the first person a client meets, often in stressful situations. The receptionist must be able to multi-task and keep everything in order to keep the practice running smoothly. This includes scheduling appointments and surgeries, explaining and collecting fees, routing calls to the appropriate person in the practice, and making sure client records are kept up to date. Receptionists are often trained on the job and should have at least a high school education.

Office or business managers often assist with reception duties, but their main duties involve the day-to-day business of the practice: taking care of accounts, paying bills and payroll, settling disputes, and often scheduling staff members. They may have a degree in business management or often they are veterinary technicians or technologists that have taken continuing education courses in practice management. These are just a few of the duties covered by the receptionist and office manager.

Cleaning staff are those personnel that are charged with keeping the clinic clean as well as personnel hired

to keep the kennels clean. This may be delegated to one or two people or it could be delegated to the veterinary assistant. It is also the responsibility of every person working in the clinic to clean and make sure the patients are comfortable and have the necessities of life. If this is one of your duties take pride in knowing that often the first impression of a clinic is how clean it is and if it smells good. By doing an excellent job in cleaning both the facility and the kennels you are providing an invaluable service to both your employer and the animals you love.

Cross-training often occurs in veterinary practices, which enables each team member to carry out the tasks of other team members or function in a dual role such as technician–office manager. Cross-training allows for greater flexibility in staff scheduling. It guarantees that when a practice is short staffed, employees can effectively help each other complete their work. Dual roles are often needed in small facilities with fewer employees. Veterinary assistants may be asked to cover the receptionist or kennel care duties on occasion.

Information Discovery

Utilizing the internet, find the veterinary practice act for the state in which you live:

- Find out how many hours of continuing education it takes for a veterinarian to maintain her/his license each year.
- Find out what it means to practice veterinary medicine.
- Develop your written communication skills by explaining what a veterinarian is and what they do in veterinary practice, in your own words, as if you were talking to a high school student.

Utilizing the internet, look up, copy and paste the AVMA's model practice act or continue to work with the practice act from your state:

- Find the definition of a veterinary technician and veterinary technologist and what it means to practice veterinary technology.
- Compare the similarities and differences between a veterinarian and a veterinary technician in a veterinary practice.
- How does your state recognize veterinary technicians?
- What is the credential designation and how many hours of continuing education are required to maintain that credential?

Utilizing the internet, find the NAVTA approved veterinary assistant program guidelines:

- Reflect why passage from such a program versus on the job training may be important to job acquisition and mobility.

Meeting Employer Expectations – 10 Behaviors to Master

Employers in all professions demand behaviors that reflect competent knowledge and good attitudes and veterinary medicine is no exception. This section introduces the veterinary assistant to the professional behaviors specific for success within a veterinary practice. Whether you are a veterinary associate or a kennel assistant, all employers have basic expectations of every employee. The following are 10 behaviors to master in order to meet these expectations:

1. Punctuality
2. Presence
3. Flexibility
4. Cooperation
5. Following directions
6. Working independently
7. Honesty
8. Problem solving
9. Loyalty
 - Adherence to the policies and procedures of the workplace
10. Commitment
 - To customer satisfaction and product quality
 - To client–patient confidentiality
 - To learn now and for a lifetime
 - To take, then act upon constructive criticism without anger or defensiveness.

Punctuality, without excuses. Clients are scheduled to arrive at the clinic at specific times to facilitate seeing their pet, determining a course of action, and treating the pet. If the clinic’s personnel are late getting to work, it can have catastrophic effects for the rest of the day. If your shift starts at 8 a.m. you should plan on arriving 5–10 minutes early. This allows you to put your personal belongings away, stow your lunch, make sure you have a pen, leash, roll of tape, and scissors in your pocket, and with name tag in place punch in on time. Walking in the door at 8 a.m. means you have arrived late!

Presence, when you are at work you must concentrate on *work!* Whatever is going on in your personal life needs to be checked at the door of the clinic. Your employer may care about you, but still expects you to do the job you are being paid to perform every day for the times you are scheduled to work. Life is hard, but it gets a lot harder if you are dismissed from your job because your personal life is getting in the way of performing your duties.

Both punctuality and presence can be a morale buster in a clinic. The following scenario demonstrates two divergent behaviors regarding punctuality and presence.

Scenario: Punctuality and Presence

Stew walks in the door right at 8 a.m. or is 5–10 minutes late every morning. He always has an excuse, from traffic jams to his dog running off or his alarm not ringing. When he is finally punched in he is often on his cell phone; arguing with his girlfriend or checking his text or email, which also occurs every chance he gets throughout the day. The other staff members often must ask twice for help or nudge him into action because he is on his phone. He complains to anyone that will listen to him about his car, roommate, or girlfriend. He is often moody and tired because he has stayed up too late playing the latest computer game, which he goes into detail about every chance he gets. Meanwhile, Connie arrives at work by 7.50 a.m. every morning, works with a smile, chats when appropriate but is often on the move all the time. If she isn’t helping someone directly she is cleaning something. The only time you see her on her phone is during breaks and lunch. She does use her phone as a timer for vital signs and as a calculator as needed, but that is all during working times.

At the end of the shift an invitation is made to gather at a local coffee shop. Stew readily accepts, but Connie declines. When asked why, she states that her mother is in the hospital critically ill and she needs to be with her. No one knew!

Information Check and Reflection

- Describe how Stew’s attitude, presence, and punctuality would wear on the morale in the clinic.
- How do you think Connie keeps so focused at work, especially with a critically ill mother?
- What two behaviors is Connie demonstrating?
- Reflect on how you would plan on being at work on time and how can you stay in the present when life is tough outside of work.

Flexibility and *cooperation* are vital in keeping the workflow going throughout the day. The veterinary assistant may be asked to assist with anesthetizing a patient one moment and to gather a patient in the reception area the next. You are the extra pair of hands often desperately needed in the veterinary clinic. Doing all tasks asked of you willingly and competently builds trust in your abilities. This is not only expected, but also appreciated by everyone in the clinic.

The same is true for working with others in a clinic. It is so important to work well with everyone. Cooperation is a valuable behavior, which can be tough sometimes because each person will often have their own style of accomplishing the same tasks. This makes it difficult sometimes, but it is important to go with the flow and provide the best help you can when taking care of patients. Learn how each veterinarian and veterinary technician likes to accomplish tasks and be a step ahead of them when setting up or be thinking about what they may ask you to do.

Scenario: Flexibility and Cooperation

A new veterinarian, Dr. Kindheart, has been hired and it is her first day at the clinic. Stew has been assigned to be her assistant for the day. He meets her in the prep room and as she walks in informs her that their first task is to neuter a cat. Stew presents the cat for her to examine and restrains it for her to anesthetize. When it is sleeping soundly he automatically places the cat into dorsal recumbency and stretches the back legs up towards its head. Dr. Kindheart is stunned because she has never seen this position before. She asks why he is holding the cat this way and Stew says, “Dr. Alright, the clinic owner, always does them this way.” Dr. Kindheart asks Stew to place the cat in lateral recumbency and to hold the tail up and out of the way. Stew heaves big sigh and shakes his head, while slowly repositioning the cat. Dr. Kindheart’s confidence is shaken, thinking that she may be doing it wrong. Meanwhile Stew is shifting from foot to foot, heaving more sighs or is babbling about some video game he played the night before which further distracts and heightens the nerves of an already jittery vet. The neuter takes twice as long as usual and Dr. Kindheart feels like a failure.

The next day Connie is assigned to Dr. Kindheart. Stew heaves a sigh of relief and says, “Glad I’m with Dr. Alright today. He knows what he’s doing!” Then with an evil grin he quips “Good luck with the newbie!” Connie approaches Dr. Kindheart and introduces herself as the veterinary assistant assigned to her for the day. They proceed to the surgery prep area and Connie asks Dr. Kindheart how she would like to proceed. The relieved vet and Connie have a good discussion about how they will accomplish the neuter, and everything goes according to plan.

Information Check and Reflection

- What behavior skills did Connie employ when working with Dr. Kindheart for the first time?
- How well do you think Stew works with the various people in the clinic compared to Connie?
- Who was more flexible in this scenario?
- Reflect on how you would learn to work with other people in a practice.

Following directions and completing the task to its logical conclusion is very important. To illustrate these behaviors read the following scenario about two very busy veterinary assistants, Stew and Connie.

Scenario: Following Directions

The practice is crazy busy this morning with a full schedule. Already the phone is ringing off the hook with clients seeking to get their pets looked at today. The only option for those pets sounding to be very ill is to have the patients dropped off for the vets to look at when they get a chance. Both Stew and Connie are called to the reception area at the same time to take patients back to the kennel area. Stew approaches the client and asks him to put the dog on the leash he is holding out. He then takes the dog and puts it into a kennel, shuts the door and leaves. Connie approaches the other client, with a smile and a hello. She

confirms that this is the patient that is going to stay with them for a while and assures the client that her dog will be just fine while she is away. Connie takes the dog to a kennel, reassures it with a few pats then shuts the door and leaves, only to return in a few minutes with a water dish and sleeping pad to put in the kennel. She gives the dog a few more pats and then carefully closes the door to the kennel, making sure it latches.

Information Check and Reflection

- Who followed instructions?
- Who followed instructions to their logical conclusion?
- Why was it important to place water and a sleeping pad in the kennel?
- Reflect on who you would want to emulate.

Working independently is a skill all employers check references about. Can you be given a task and complete that task without someone checking up on you constantly? Can you be given instructions and carry out those instructions without asking questions about every step? These are just a few examples of what working independently means. It is also utilizing “moments of time” to learn how to answer the phone, check in or check out a patient, or properly clean and set up a kennel without being directed to do so. These actions increase your value to the practice. “Moments of time” are those down times when the practice isn’t busy. Make it a point to look for ways to contribute to the practice. Cleaning out a drawer, observing others doing their jobs, or even washing down a wall are all ways to contribute and make yourself a valuable member of the practice.

Reflection

Do you work independently? If so, describe some of the work you do without supervision or being asked to do something. If you don’t, think about ways to start working independently.

Benjamin Franklin is credited with saying, “Honesty is the best policy.” But what exactly does that mean. We all have told a “white lie” to avoid hurting someone’s feelings. To not tell the truth when we have done something wrong or have forgotten to do something that endangers a person, animal, place, or thing is a moral flaw. It seems to be human nature to either be truthful or dishonest. Which one often depends on

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how one was raised. Telling the truth, having the punishment fit the crime, and facing the consequences is often a means for teaching that honesty is the best policy. Terrible punishment after telling the truth teaches us to lie the next time to avoid the punishment. Getting away with a lie often reinforces lying because we can get away with it, that is until we get caught in a lie. Telling the truth, facing and dealing with the consequences is still better than being branded a liar and losing the trust of your employer and co-workers. To paraphrase Ankita Bhardwaj, from her essay *Honesty is the Best Policy: Origin, Meaning, Explanation, Essay, Speech*, honesty is the key to a good life, the benefits of telling the truth always come back to you in the long run. Honest people are trusted and respected. Dishonest people may get by for a while but sooner or later their lies will catch up to them and dire consequences usually follow.

Scenario: Honesty

Remember in our last scenario, when Stew put his patient into a kennel and left? Connie reminded him to get a water dish and sleeping pad for his patient, as he was leaning against the counter looking at his phone. He said “Yeah, as soon as I’m done here.” Well, he forgot, two hours have passed. Dr. Kindheart has a break in seeing afternoon patients and goes to check the patients that were dropped off. Remember, these are patients that had to be seen today as their conditions were such that they couldn’t wait a few days for an appointment. As she enters the kennel room she sees a very sick dog without a water dish and no sleeping pad. She turns to Stew, who is her assigned assistant, saying, “Who put this dog in a kennel without water? How long has he been here without water?” Stew realizes that he forgot to take care of this patient. He must make a quick decision: tell the truth or lie. Here’s what runs through his thoughts:

1. Blame it on Connie. She brought another dog back at the same time and Dr. Kindheart wouldn’t know who brought which dog back. No, that won’t work, everyone knows Connie is a stickler for details and would never forget to put water in a patient’s kennel.
2. Say, “I don’t know” and leave it at that. No, that won’t work either, everyone knows we were both called to the front to pick up a patient, so it was me or Connie.
3. Fess up, I forgot to give him water, tell the truth and hope they don’t fire me.

Stew replies, “Oh no! I am so sorry, little guy, I totally got distracted and forgot to put water in for you! I am sorry, Dr. Kindheart, I will never let this happen again. I hope he is going to be alright.” For all of Stew’s faults he is not a liar. He does care about animals and would never do anything to intentionally hurt one. Dr. Kindheart says, “Well, let’s check him out and see if it caused any damage.” She continues to say that because of workplace policy she will have to report this and let the owners know what happened. Stew understands and vows to pay better attention to patients while he is at work.

Information Check and Reflection

- What consequences do you think Stew will face because of this incident?
- If the dog is OK do you think Dr. Kindheart should keep this between her and Stew or should she report him?
- What if the dog was harmed by not having water? What would you decide then if you were Dr. Kindheart?
- Reflect on what you would do in the same circumstances when faced with telling the truth or lying, by either omission or outright denial. This does not need to be shared with classmates or instructor, it is simply a means to have you consider if honesty is always the best policy.

Problem solving is an invaluable skill. There are two types of problem solving you’ll be exposed to in this world. One is the everyday problems that crop up. For example, not being able to find a specific piece of equipment because it wasn’t put back in its storage place. If this is a onetime occurrence there isn’t much of a problem other than finding it and putting it back. However, what if this keeps happening because it is used often and never put back into its storage spot? You have three choices: resign yourself to always looking for it and putting it back yourself, you could find out who used it last and tell them to put it back, or you could think about asking the team if another one could be purchased or maybe move the item to an easier storage location. Each of these actions is valid – which one can you live with? Or maybe a better question is which one resolves the problem? Being able to come up with a solution to a problem within the practice’s guidelines or protocol manual frees up the owner and office manager to deal with issues far more important than those everyday problems that pop up. Of course, if it means changing a protocol or standard of operation (SOP) then running it past your immediate supervisor first is always a must.

Dealing with a personal problem with another employee is the other type of problem solving that is a skill that is highly valued. These personal conflicts crop up even within the most effective teams. Being able to discuss a problem with the person who is causing the issue is your first mode of action. Utilize “I” or “my” statements to start the conversation. For example, “it is my perception,” “it hurts my feelings,” “could you help me figure out,” or “I need help with...” This puts the person you are having this crucial conversation with into a more receptive mood to help. If you approach the person with a combative, “I wanted to speak to you about...,” it immediately puts the person on the defensive and usually nothing gets solved.

If you have approached someone about a problem, remember to ask for a follow-up. This helps to confirm that you both will work on the issue at hand.

If the problem continues or you are met with resistance, determine whether you can live with the issue and let it roll or if you need to take it up the chain of command. This is also important to remember: never jump the chain of command. It often backfires and creates an even worse situation. The chain of command is your immediate supervisor. If the issue is with that person and you have already tried to resolve it with them and gotten nowhere, then move up to that person's supervisor. Again, consider the situation carefully. If it is detrimental to the patients, clients, and practice, then by all means take it up the chain of command. Be sure to have a solution in mind, especially if the problem is about your job specifically. If it is a personal issue and no one else seems bothered, then take a deep look at why it bothers you and come to terms with it and move on.

Information Check and Reflection

- What strategies for starting a crucial conversation do you hope will prevent the person you are speaking to from becoming defensive?
- Reflect on an everyday issue that you have resolved or needs to be resolved. What did you do or could you do to resolve it?
- Reflect on a crucial conversation you have had to have with a co-worker, friend, parent, or significant other. How did you approach them? How did the conversation turn out? Was it successful in resolving the problem? Were you able to move forward after the conversation?

Loyalty and commitment to your place of work are so important. This encompasses the preceding information as well as the following points. Adherence to the policies and procedures of the workplace shows a commitment to following the guidelines set out by the owners of the practice. They are usually in place to ensure fair and equal treatment of employees, clients, and patients. These policies and procedures usually dictate how employees dress, ask for time off, how benefits are dispersed, how to report when a policy or procedure has been ignored, to name a few. Client policies are also in place so that all are treated in the same way. For example, there may be a no credit extended policy, or if a client is disrespectful and abusive towards the staff they may be fired from being a client. Patient policies include things like how they are cared for and treated when in the practice. For example, every animal is given a water dish, sleeping pad, and a litter box (as needed) when placed in a hospital kennel. You will also see that procedures are often

written down. For example, how is a patient checked in when they arrive at the practice? How are the clients to be addressed when asking to them enter an exam room? Sometimes you will find a practice that doesn't have policies and procedures written out. This can lead to issues amongst the staff members, especially when employees are doing whatever they think is best and it rubs someone else the wrong way. With clearly stated rules, everyone should commit them to memory and act accordingly. This has the benefit of everyone moving in the same direction. This builds trust and loyalty to the practice and to each other.

Scenario: Reporting a Violation of the Policies and Procedures

Remember our scenario where Stew forgot to put water and a sleeping pad into a patient's kennel and Dr. Kindheart had to report him for this oversight? The reason she had to do this is that at their practice the policy and procedure for hospitalizing a patient is quite clear. Stew failed to protect the health and well-being of this patient and the policy states that "Any employee found to have willingly and/or neglectfully caused harm to a patient of the practice will be dismissed without further consideration. Any employee that has witnessed any such incident is required to report this incident in writing to the practice manager. Failure to report is the same as if the witness perpetrated the harm. The practice manager will interview all parties involved and discuss it with the practice owners and a final decision will be made that may range from retraining, probation status or dismissal from the practice." As you can see, Dr. Kindheart really didn't have a choice in reporting Stew.

Stew did have some things going for him. One was that he didn't leave the patient without water and sleeping pad on purpose. It was a crazy busy day and he did get distracted, albeit on his phone! Secondly, the patient didn't suffer any long-term effect, nor did it exacerbate its symptoms, which Dr. Kindheart did include in her report. She also noted that he was very apologetic and had immediately told the truth that it was his fault. The office manager also noted that this was the first time Stew had ever been reported for a violation of the practice's policies and procedures.

Information Check and Reflection

- What decision would you have come up with if you were the office manager and owner of the practice?
- Why did you reach that conclusion?
- If you were the boss how could you build Stew's and other employees' loyalty and commitment to the practice and still follow the policies and procedures?

Take, then act upon *constructive criticism* without anger or defense. It is human nature to become defensive when someone calls us out on a behavior or action that

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is detrimental to the practice or to ourselves. It seems that we must justify why we are doing something a certain way. When told about our deficiency it is always wise to take a moment and digest the information. Try to see it from their perspective and be honest with yourself. Remember the person giving you the constructive criticism is doing it with your best interests in mind. They are usually also doing it because your action or behavior may be moving you towards being dismissed from your job.

Scenario: *Stew's Meeting with the Practice Manager and Owner*

"Stew, we have reviewed your actions with the forgotten patient with Dr. Kindheart, other staff members, and yourself. As per our policy you failed to take adequate action to ensure the comfort of the patient while here. Taking into consideration your years of employment and this being your first major incident we have decided to put you on a 3-month probation with the following stipulations. You are not to use your phone during office hours. It must remain in your locker or vehicle, you may use it on your break and lunch period. You will arrive to work on time every day with no excuses. This means that you are here at least 5–10 minutes early to get settled and be presentable for work. Failure to adhere to either of these stipulations during and after the probation period will be grounds for immediate dismissal. In addition, if another incident occurs where a patient is placed in danger or even compromised you will be dismissed immediately with no justification. Do you have any questions?"

Information Check and Reflection

- Put yourself into Stew's situation, was this a fair means of handling his actions?
- Put yourself into the other employees' shoes, do you think they will think this is a fair decision?
- Why do you think the employers decided to give Stew another chance?

Focus on *customer satisfaction* and *product quality*. The veterinary practice is a business and as such it is essential that clients are well taken care of. They bring their pets to the practice because they are getting value for their money. It isn't always about who is the cheapest in town, it is that your entire team cares about the patient and the owner as well.

Information Check and Reflection

- How can team members show they care about patients' and clients' well-being?
- What are some ways that you can show your practice that you care about client satisfaction and offer quality service?

Lifetime learning keeps you sharp, it expands your experiences, and opens the mind to possibilities. It doesn't have to be only in veterinary medicine, it can be in arts, crafts, hobbies, or in a completely different area of study. With the internet there is really no end to what you can learn. Find your passion outside of work. Yes, work should be fulfilling and enjoyable, but it shouldn't consume your entire life. Outside interests give you a break from the daily grind, keep the mind fresh and spirit open to new possibilities.

Information Check and Reflection

- Reflect on your outside interests. If you are not currently pursuing outside interests, what have you always wanted to do with your spare time?
- If you do pursue outside interests, what are they and what do they do for your mental and physical health?

Professional Appearance

"First impressions are lasting impressions." This saying is important in veterinary medicine as in any other business. Clients have no way of knowing the skill of the veterinarian in surgery; they are not present. They do judge the quality of patient care; not only on how well their animal recovers but judgments are based on the appearance of the facility and staff as well. It may seem hard to believe, but it is true.

Personal grooming includes common sense rules with special adaptations for the work and environment involved. All clothing must be washable in hot water and cleaned daily to reduce the risk of disease transmission. It should be of durable, smooth fabric in a simple style. Scrubs are an excellent answer to these criteria (Figure 1.1). Sleeves should be at or above three-quarter length with a V or round neckline that is modest when bending over. Pants should not be tight, as bending and squatting are done throughout the day. Again, modesty is important when considering the style of waistline. Darker colors or prints are often preferable as they do not show stains and soil as do lighter colors. It is an excellent idea to have an extra set of scrubs at the practice to change into if the set you are wearing is soiled with feces, vomit, blood, or urine. All of which can transmit disease as well as becoming odorous. Scrubs also have an abundance of pockets as it is good to stock your pockets with items that are often used throughout the day.

Shoes must be closed toed, slip or skid resistant, and clean. A solid pair of shoes is an excellent investment in foot health. You will be on your feet for your entire shift and when your feet start to ache it takes your mind off



FIGURE 1.1 Clean scrubs ready to work.

your work and mistakes can occur. In large animal practices you will be required to wear rubber boots that fit over your shoes. Often, if doing large animal work only, those shoes should have a steel toe. Clean shoes and rubber boots are essential to prevent the transmission of diseases from outside the clinic in and from farm to farm.

Jewelry should be left at home. Loop earrings, rings, and necklaces can become caught on equipment or snag on an animal. An inexpensive wristwatch with a second hand is acceptable to facilitate pulse and respiration readings. The practice may have a policy on facial piercings and tattoos. Check the policy manual or with the office manager before getting any of these things done in an obvious location.

Hair must be kept clean and if long tied back or put up in a bun. Do not allow it to hang free as it will obscure your vision when bending or leaning over. Fingernails should not be longer than just over the top of the tip of the finger and should not be painted (Figure 1.2). Chipped polish or chipped nails makes a person look unkept. If you chew your nails this is a good time to break that habit. Debris and germs can easily get under fingernails and if ingested you can become sick.

If you smoke, drink coffee, or have had food with a strong odor for lunch please be kind and take a breath mint. Chewing gum is usually not appropriate, as the chomping and inadvertent snapping of gum can be interpreted as boredom or non-interest in what you are doing. If you can

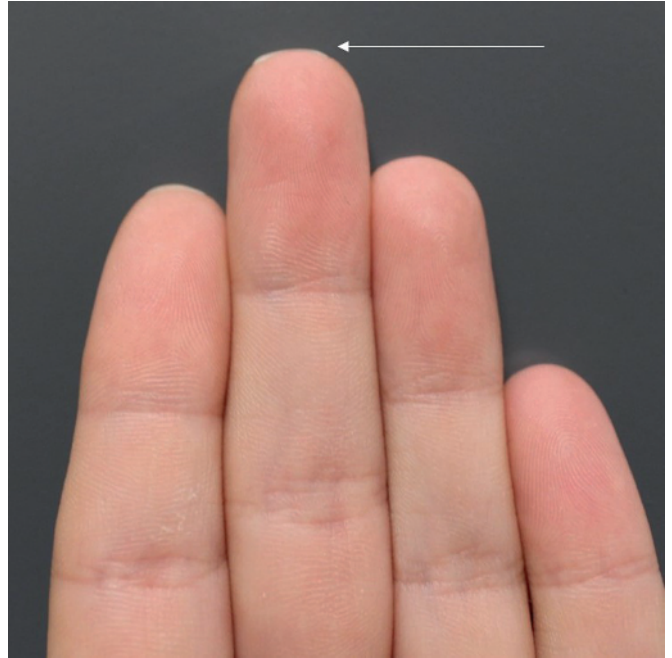


FIGURE 1.2 Fingernail tips.

smoke on your breaks, make sure to remove your scrub top or to spritz yourself with a deodorizing spray. Non-smokers are often disturbed by the smell of smoke and even if you can't smell it because you are used to it, believe that others can! This also is good advice for perfumes and aftershave lotions. It is important to use them sparingly if at all at work. Many people are affected negatively by scents. Save them for your after hours and weekends.

Men should keep a clean-shaven face but if you have facial hair it should be kept neat. Women, if you wear makeup keep it simple; this is not the time to come glammed up! Bathe regularly and use a perfume-free deodorant. Remember you may be one of the first visual representatives of the clinic so aim for a positive impression!

Help a co-worker. Be the person that notices that there is something in someone's teeth, a zipper isn't quite where it needs to be, or if someone smells bad. Kindly let them know that there is an issue. You can take the sting out of this information by following up your statement with, "I would sure want to know if..."

Information Check and Reflection

- Do you meet the personal appearance expectations?
- What can you do to make sure you are ready for a day at the clinic?
- What items should be stored in your pockets for work?

Effective Communication Skills Within the Veterinary Practice

Verbal Communication

Good manners and common courtesies are always expected in the workplace and in every interaction with clients, team members, and other visitors to the practice. Good manners are nothing more than making social interactions comfortable for everyone involved, which put those with whom you interact at ease. They are like the rules for the road. If everyone follows them, traffic moves smoothly, and everyone is happier. Please, thank you, may I assist and a genuine how are you are all common courtesies that should be used in all interactions. These common courtesies seem to have faded from our society. It is amazing the response they invoke when used, especially in tense situations. They demonstrate that you respect other people and it builds trust and respect for you.

Reflection

Practice common courtesies. Make note of yourself saying thank you, please, may I assist, yes mam, and no sir when addressing classmates, friends, teachers, parents, siblings, clients, and co-workers. Write down their reactions to these courtesies and how they made you feel when using them.

Non-verbal Communication

Humans use body language and facial features to convey feelings and emotions to match or reinforce what they are saying – sometimes! We are very good at verbally saying one thing but non-verbally saying another with our body language. A frown or closed body position will deflate your words, making it seem that you are saying one thing but thinking another. Crossed arms, weight shifted to one foot, and a raised eyebrow gives the appearance of indifference, defensiveness, anger, or aggravation (Figure 1.3a). An open stance with both feet at shoulder width, arms loosely held at your sides, and relaxed facial features or a smile conveys sincerity and interest (Figure 1.3b).

Common courtesies are just one aspect of verbal communication. It also includes using correct grammar. Clients make assumptions about the education and quality

of work by the veterinary staff based on their use of language. Listen carefully to the veterinarian's and veterinary technician's manner of speaking to help you expand your vocabulary and grammar.

To check your grammatic ear, read these two sentences out loud:

- I ain't got time to get that mop and bucket to clean up no mess up front!
- I don't have time to get the mop and bucket to clean the mess up in front!

This is an obvious example of improper grammar versus proper grammar. If you are having trouble speaking well, ask someone that does to coach you. This may mean they catch you and correct you on the spot. Be ready to take their advice with good grace and learn from it!

At all times avoid swearing, vulgarities, and the use of slang words as they instantly lower your standing in everyone's estimation. You also want to pay attention to the tone of voice you use. A wise crack or joking tone may be offensive. Baby talk to animals may be OK at home or for a brief time at work, but keep it brief as excessive baby talk can become annoying.

Client Communication

Interacting with clients must integrate all the information shared in the previous section along with the following. All clients should be greeted with a smile, open body language, by their name with an honorific: Mr., Mrs., Ms., Miss, or Dr. Acknowledgment of the pet by name is very important when first meeting a client and patient. It shows respect for the client and care about the pet. The client may ask you to call them by their first name but until that happens use the honorific and last name.

When speaking about the veterinarian to clients always refer to her/him by Dr. Lastname. Veterinarians tend to be more comfortable with Dr. Firstname but that is only acceptable behind the scenes. They worked hard for that title and it should be acknowledged when speaking to clients.

Reflection

Do you speak well? Listen to yourself and others in school, at work, and at home. Document the times that you needed to check your grammar or you caught someone else speaking poorly or well and share it with the class.



FIGURE 1.3 (a) Closed body language. (b) Open body language.

Written Communication

In veterinary practice the patients' records are legal documents. They are used to record all the treatments, surgeries, medications, and observations carried out by the veterinarian and others in the practice. It is imperative that they are written concisely, completely, and correctly. Therefore, proper grammar and spelling are essential. Making sure you have the correct file is essential. If the practice uses paper files, neat handwriting is essential. More information about what goes into records is covered in Chapter 3.

Computer Competency

The computers used in a veterinary practice will usually have a practice management software package that is very expensive to purchase and maintain but the ease of file management, financial recording, inventory management, and elimination of paper shuffling pays for itself repeatedly.

There are usually several computers networked together, referred to as workstations, which are strategically placed around the clinic. The network allows information placed on one computer to be accessible by all the other computers. For example, the receptionist checks in a patient, taking their chief complaint and indicates that they are ready to be seen. They are escorted

to an exam room where the veterinarian, technician, or assistant calls up the patient's file on that workstation and begins the visit. Once the patient has been examined and a plan is formulated for care, all that information is put into its file at that workstation. A list of charges is completed, and the client is asked to step to the reception desk for their bill. The receptionist calls up that patient's file and sees what fees were applied and asks for payment. There is no waiting for paperwork to be brought to the reception desk or failure to capture all the fees applied to that visit.

Because of the important role these computers have at work they should never be used for personal emails, surfing the internet, or have anything downloaded to them as it could put the entire network in jeopardy from viruses or malware. Each person in a practice is given a password to log into the software and the computer network. This safeguard renders them unavailable to the public. This is to protect client records and practice financial information. It is extremely important to follow the guidelines set out by the practice when utilizing the computers.

Client records are confidential and should never be left open on a workstation, especially between clients. It is to be hoped that the workstations will time out between patients, meaning they have to be logged into to start the next visit. If they don't, the previous client's information is there for anyone to read. This is a violation of client confidentiality and can result in severe

consequences for you and the practice. There is more about client confidentiality in the section on application of veterinary ethics later in this chapter.

Information Check

- Why is it so important that work computers not be used for personal reasons?
- What could happen if an employee downloads a virus or malware to a business computer?

Use and Misuse of Social Media

For many people social media has become as routine as talking on the telephone. It is amazing how many people can be reached in a short period of time. This works great for events and information the veterinary practice wants to get distributed. There is usually one person in charge of generating social media bursts in the practice. It is important to not post photos of patients or clients on your personal social media. This is an invasion of their privacy and can be grounds for immediate dismissal.

The unfortunate side of social media is a total lack of privacy to this method of communication. Snapchatting, Tweeting, Facebook, and email once posted can never be removed and becomes part of the public domain. It is never appropriate to discuss employee relations, how you feel about your boss or job, patients, or clients. One should never vent about what is going on at work or whom you feel has caused you an injustice. Stories about patients or clients, even if names are not used, is a violation of client privacy.

Social media can also be used to assess your potential fit for a position in a practice. Pictures and stories of wild nights or rants about life's injustices may not paint the picture you would want of your abilities.

Reflection

Examine your social media accounts from a prospective employer's frame of reference:

- What type of person do you appear to be based on pictures and language used?
- Have a classmate or friend check your accounts. Do they come up with the same type of person as your evaluation?
- Would you hire this person to fit into a professional practice?

Determining Credible Web Sources

Credible web sources are sometimes difficult to find. Before utilizing a website for a paper or to increase your knowledge, ask these questions:

- Who has written the information provided on the page?
- What are their credentials, do they possess a degree, or have they studied the topic extensively?
- Do the author(s) have a good reputation?
- Is the information valid, with checkable facts, or is the information provided purely opinion?
- Does more than one source contain the same information?

All these questions should be answered with a yes before utilizing the source as a point of knowledge. Anyone can produce a webpage and make it look and "sound" believable. Many of them are great sites, but there are an equal number of sites that offer poor information if not downright misinformation!

Information Challenge

Find a website that talks about a common disease like heartworm. Answer the questions on credible web sources to confirm that it is a reliable site then try finding another site about heartworm and compare them. Do the sites offer the same information? Do both sites meet the criteria? See if you can't find one that offers conflicting information. Compare it to the "reliable" site.

Anticipation of Workflow

One of the most valuable skills is anticipating what comes next. This is an ongoing learning process that may take months to achieve but when you do you will be extremely valuable to the practice. From day one start watching and remembering what needs to be done and when. Learn everyone's routine, know how they coordinate work and use their time. Have everything ready to begin procedures without being asked. The veterinarian and technician should be able to walk into a room and have everything on the counters ready to go to work. Be ready, willing, and able to pitch in and help with whatever is asked of you. Don't wait to be told what to do if there is down time. Restock exam rooms and treatment areas, grab a bucket of soapy water and wash down a wall or completely clean off a counter top, even under the items sitting upon it! This too will increase your value in the practice.

Review the appointment schedule, treatment board, and hospitalized patients throughout the day. Be

especially mindful of supplies and equipment necessary to have everything on hand. This also goes for your work duties. Set priorities for accomplishing all tasks and work efficiently to stay ahead. Be flexible though, as one never knows how animals will react in a veterinary setting and sometimes things such as schedules can be knocked off track because of an uncooperative patient or a patient that requires extensive care.

Information Exercise

Brainstorm with your classmates on how to develop a strategy for learning and remembering the sequence of various procedures. Start with the very routine procedures like toenail trims, ear cleaning, and vaccinations. Think about what equipment or supplies will be needed. Consider marking down the steps and supplies in a small notebook you can carry in your scrub suit pocket. Utilize this until you are confident that everything is ready to go for those procedures.

Application of Veterinary Ethics

Ethics are defined as the rules or principles that govern right conduct. What is right or correct varies within a culture and society and changes over time. It is to be hoped that you were taught the difference between right and wrong behavior, to be a kind and caring person, and to stand up for what is right or just.

The AVMA and the NAVTA provide codes of ethics on their websites to help make difficult decisions and to provide guidelines for how to behave in a veterinary practice.

Information Exercise

Utilizing the internet, find these key points in both the AVMA's Principles of Veterinary Medical Ethics and the NAVTA's Veterinary Technician Code of Ethics on their respective websites. Then, in your own words, define or describe what each means:

- Establishment of a veterinarian–client–patient relationship
- Confidentiality of medical records
- The principle of doing no harm
- Protection of public health

Reflect how a code of ethics may help you determine a course of action when faced with an ethical dilemma.

Human–Animal Bond

The relationship between a human and an animal can be very complex and often involves a broad range of emotions. Relationships between animals and people have evolved from predominantly the utilitarian model in an agrarian environment to a companionship model in an urban environment. In either instance, the bonds between people and animals is complex, unique, and may change over time and circumstances. It is real, ever-changing in intensity, and induces physical changes in the limbic system of the brain.

Veterinary medicine can improve the human–animal bond. The veterinary staff including the veterinary assistant can either encourage or discourage positive client behaviors towards their animals.

We often associate the human–animal bond with companion animals such as dogs, cats, pocket pets, and birds. However, there is a move towards bringing more livestock and poultry into the urban setting than ever before. Each species of animal plays a part in the client's life ranging from companionship, playmate, surrogate children, and comfort to warmth and food. Regardless of the circumstance, it is our job to understand the different bonds, support the client in decisions, and not pass judgments on the perceived loving or unloving client.

A way to determine how bonded an individual client is to their animal takes some powers of observation. How does the client take care of their animal? How do they interact with their animal? How do they talk about or describe their animal? These are all questions to ask yourself to help interpret how strong the bond is between a client and their animal.

Sometimes there is an aberration in the human–animal bond, ranging from totally absent to an over-reliance on the animal for emotional or physical support. This broad spectrum often causes compassion fatigue in veterinary staff. Clients making decisions because of a lack of knowledge, a lack of caring, or a total dependence on the life of a pet can become very burdensome. By understanding the human–animal bond in its many forms you can interact more effectively with clients, support clients compassionately during times of crisis, and know when to rein back your involvement to prevent burning yourself out.

Reflection

How you can tell if a bond is strong between a client and pet? Use yourself or a friend as an example. Can there be a human–animal bond between a client and his/her livestock?

Grief Process

Dr. Elisabeth Kübler-Ross, in her book *On Death and Dying*, researched and developed the human experience when grieving a loved one who has died. She discovered there are five stages to the grieving process: denial, anger, bargaining, guilt, and acceptance. Further research has shown that humans go through these stages whenever they experience a loss of any magnitude. It was also discovered that we don't necessarily go through the stages in order, there is no timeframe for how long each stage lasts, and that we can get stuck in a stage. It is to be hoped that we do reach acceptance at some point in time. However, a reminder of the loss can trigger a "mini" grief process or a period of experiencing the loss again. It is usually faster than the first process, but it can trigger a period of sadness and grief all over again.

Recognizing the stages of grief can help to explain many behaviors that normally are not part of an individual's behavior. Statements like "I don't believe it" or "There has to be another alternative" are statements often associated with denial. Lashing out or accusing the veterinary staff of "letting a pet die" is an obvious sign of anger. Bargaining could be something like "Do whatever you can to keep him alive until Christmas, then I can let him go." Guilt is demonstrated by statements of blame: "I should have," "I wish I would have," and so on. Acceptance is often demonstrated by being able to speak about the loss without a total and prolonged regression into the previous stages. There may still be tears, but stories, comparisons, and evidence of being able to carry on with their lives are good signs that clients have reached acceptance.

Some people get stuck at a stage during the grief process. They can't move forward until they work through the stage in which they are stuck. Often professional help is required at this point. Otherwise you may see the veterinary staff acting as a sounding board by clients. We of all people understand how it feels to lose a pet or treasured livestock animal. We know about the stages of grief and how to spot trouble if a client isn't moving forward. Have information about professional grief counselors available in your city ready to hand out when the signs appear.

Information Exercise

List the five stages of grief and think about what statement you may hear in a veterinary clinic that may tip you off as to where that client is in the grief process.

Reflection

Reflect on a loss and see if you can pinpoint the stages of grief you went through. Remember it can be about a lost loved one or a lost boyfriend/girlfriend, a lost treasured object.

Foundation Skills – Veterinary Practice Math and Medical Terminology

The veterinary practice is often non-stop action all day long. An employee must be able to adapt to the situations occurring, understand what is said, and to process information quickly and accurately. This chapter covers the basic math used in the practice every day. It touches on the basic medical terminology that is used by veterinarians and technicians when speaking to each other and writing medical records.

Basic Math Used in the Veterinary Practice

Basic math problem solving is an essential function in the daily work of a veterinary assistant. Common occurrences include converting weight in pounds to kilograms and vice versa or milliliters to ounces or diluting a disinfectant to a 10% solution are examples of the math you will be doing all day, every day in a veterinary practice. Estimation skills are another important skill to develop in addition to solving math problems accurately. This is a quick way to check your work as you go. Being able to ask yourself, "Does this amount make sense," and knowing that it does, can keep you moving through the day.

It is to be hoped that you have a good foundation in adding, subtracting, multiplying, and dividing already in place. If you can do these things without a calculator, even better. It is a skill that should be developed because we don't always have a free hand to pull out the phone or calculator on which to figure out a problem. This does take time but is worth the effort as it adds value to you as an employee. A technique to use to polish your math skills is flash cards; this is an old technique but one that does work and can be easily found or made. With this information under control let's move on to the daily math problems you will encounter as a veterinary assistant.

Weight Conversion

This is an important skill to master because medication dosages, solution dilutions, and prescription diets are

often prescribed in a per pound or per kilogram format. Let's begin with a comparison of the US system and the metric system for weights.

The US system of weights from smallest to largest are ounces, pounds, and tons. The base unit is the ounce. It takes 16 ounces (oz) to equal 1 pound (lb) and 2000 pounds to equal 1 ton. Anything smaller than 1 ounce is expressed as a decimal point or as a fraction. For example, half of an ounce is either 0.5 oz or as a fraction $\frac{1}{2}$ oz. Once you get to 1/16th of an ounce the name changes to a dram and at 1/7000th of a pound it is called a grain. These are tiny, tiny measurements and are usually used for weighing the ingredients in capsules or powders which a veterinary assistant doesn't need to worry too much about. However, you will need to know how to convert fractions of a pound into ounces. As we said before, 16 ounces equals 1 pound. For example, when you get a weight on a cat that is 8 lb 7 oz, the 7 oz needs to be converted into "pounds" and is expressed as a decimal point. This is necessary to work out drug dosages accurately.

Here is the way the equation would be written: 7 ounces / 16 ounces/lb = 0.____ lb. The ounces cancel each other out $7 / 16 \text{ /lb} = _0.____ \text{ lb}$, leaving you only a portion of the pound. The 0.____ indicates that you have less than 1 and so your answer is behind the decimal point. Divide 7 by 16 and you get 0.4375 lb. Now place that portion of a pound behind your 8 lb and your animal's weight is 8.4375 lb. Most clinics will have you drop the last two digits and use 8.43 lb, or some may ask you to round that last digit up if it is above a 6, so you would end up with 8.44 lb. As you can see, this could be a mathematical nightmare for those of us that are a bit challenged by math, but always keep this in mind whenever you are working with a portion of a pound you will *always* divide by 16 oz/lb and you will *always* end up with that portion of a pound as a decimal point that is placed behind your full pound(s).

The metric system is a decimal system based on units of 10. The base unit of measurement is the gram and is designated as 1. You may have pocket pets and birds that weigh 1–9 grams. But what happens when you reach 10 grams? Now for some, the confusion starts. The metric system uses prefixes to indicate what multiplication factor of 10 is being applied to the gram.

For example, let's use a common measurement in veterinary medicine the kilogram. The prefix *kilo* stands for 1000. So, a *kilogram* is 1 gram $\times 10^3$ or 1000 grams. However, this would be very lengthy to write out, so 1000 grams is expressed as 1 kilogram or 1 kg. Let's explore the math. If you take 1 gram and multiply it by 10 three times you get 1000 ($10 \times 10 \times 10$). Or another way of doing it is to place three zeros (10^3) behind the 1-0-0-0 ending up with 1000. The zeros behind the one represents tens (10), hundreds (100), thousands (1000), all the way up to millions (1,000,000), simple right!? A great example of this is our money, we have \$1, \$10, \$100, and \$1000 bills all based on the base unit of \$1. In US slang, 1000 dollars is often referred to as \$1K so in metric terms 1 *kilo*!

What do we do if we have something that weighs less than a gram? We insert a decimal behind the 1 and place zeros behind the decimal. Let's say we have something that weighs 1000 times less than a gram. The prefix milli stands for *minus* 1000 or 10^{-3} . The zeros behind the decimal represents tenths (1/10), hundredths (1/100), and thousandths (1/1000), in that order. If a milligram is 1000th of a gram we would write it as 1 milligram or 1 mg, which is the abbreviation for milligram.

The gram, kilogram, and milligram are three weights often utilized in veterinary medicine to weigh animals, medications, and powders. Understanding this and learning the other prefixes to indicate greater or lesser weights is very important.

Information Exercise

Utilize the internet to fill in this chart:

Name	Number	Prefix	Power of 10	Abbreviation
million				
thousand				
hundred				
tens				
Base unit – gram	1	No prefix	0	g
tenth				
hundredth				
thousandth				
millionth				

Today's scales can often be switched from pounds (US system) to kilograms (metric system). The scale may be one the animal sits upon, giving you a number in either pounds or kilograms, and if tiny like a bird or pocket pet in grams. Often the scales are in pounds, especially in US clinics. Being able to convert pounds to kilograms accurately and vice versa is a skill used constantly in a practice. One trick to remember is that an animal *always* weighs *less* in the metric system; they really don't weigh less, but the number for the weight is smaller.

The most common conversion factor to remember is *1 kilogram (kg) equals 2.2 pounds (lb)*. For example, if you have an animal that weighs 10lb it will weigh 4.45kg. How did we arrive at this number? The equation is written like this: $10\text{lb} / 2.2\text{lb/kg} = \underline{\hspace{1cm}}$ kg. The pounds cancel each other out: $10 / 2.2 / \text{kg}$, leaving you with $10/2.2\text{kg}$. Divide 10 by 2.2 and you get 4.45, so the answer is 4.45kg.

If you must convert the other way, kilograms to pounds, you multiply by 2.2lb/kg. For example, if an animal weighs 5kg the equation would be written $5\text{kg} \times 2.2\text{lb/kg} = \underline{\hspace{1cm}}$ lb. In this instance the kilograms cancel each other out, $5 \times 2.2 \underline{\hspace{1cm}}$ lb, and the answer is 11 lb.

This all works easily with whole numbers. What happens when you have an animal that weighs 4lb 6oz? Remember how to find the decimal point for a portion of a pound? Here are the equations.

Convert ounces into pounds: $6\text{ oz} / 16\text{ oz/lb} = \underline{\hspace{1cm}}$ lb, ounces cancel each other out, $6 / 16 / \text{lb}$, leaving you with $6/16 = 0.\underline{\hspace{1cm}}$ lb, the answer is 0.37lb and if your clinic likes you to round up the working answer is 4.4lb. Remember we set the portion of a pound behind the decimal which is placed behind the full pounds. Now let's plug the 4.4lb into the equation to convert pounds to kilograms: $4.4\text{lb} / 2.2\text{lb/kg} = \underline{\hspace{1cm}}$ kg. The pounds cancel each other out $4.4 / 2.2 / \text{kg}$ so you are just left with kilograms. That gives you $4.4/2.2 = 2\text{ kg}$.

Information Exercise

Practice the following weight conversions to kilograms:

- 62lb 14oz _____
- 16lb 8 oz _____
- 24lb 2oz _____

At the start of this section we briefly mentioned building your estimating skills. This takes some practice, but it is a good way to help check that your work is in range. For example, if you simply divide a number by 2 you are going to be close when converting pounds into kilograms. Here are some examples.

Estimating kilograms from pounds, if we drop the 0.2 from the equation and divide 6lb by 2 it equals 3lb. That

is your estimate number and our real answer should be close to 3. Remember it will be a bit less because of the 0.2 decimal.

Answer using the conversion of 1lb = 2.2kg: $6\text{lb} / 2.2\text{lb/kg} = 2.72\text{kg}$, and if your clinic rounds up the answer is 3kg!

Estimating

Estimating portions of a pound into a decimal point. Visualize a 1-lb cookie and remember that 1 lb is equal to 16 oz. Now start dividing that cookie into portions. Half of a 16-oz cookie would be 8 oz, $16/2 = 8$ and to change that to a decimal we would divide 8 by 16 and we would get 0.5lb or $\frac{1}{2}$ lb if expressed as a fraction. When estimating for 7 or 9 ounces the number should be something close to 0.5 lb. Let's work the problem and see how close we get. At 7 oz, we can estimate to be just a little under 0.5lb because 7 is less than 8. We plug the 7oz into our formula: $7\text{ oz} / 16\text{ oz/lb} = 0.4375\text{lb}$. If we round up, we would use 0.44lb.

Information Exercise

An animal weighs 8lb 9oz. If 8oz is equal to 0.5lb and 7 oz is equal to 0.44lb, where would you expect 9 to be as a decimal? What is your estimate for the decimal point? Now plug the 9oz into the formula. What was your answer? Were you close with your estimate? Continue estimating and checking your answers for 13, 14, and 15 oz. Are you getting the hang of it?

Volume Measurements - Dilutions

Another common occurrence in the veterinary practice is diluting solutions. These are often purchased as a concentrated solution or powder which saves on shipping costs. The veterinary assistant must be able to dilute the concentrate properly to achieve the optimum strength in which to do the job. Too concentrated and a dilution may cause damage and is wasteful. A solution that is too weak will not work as indicated. All products will have the instructions written on the label. Being able to read, understand, and dilute the solution is an important skill. The instructions are often written using the US or the metric system of measurements.

The most common US system of measuring volumes uses teaspoons, tablespoons, fluid ounces, cups, pints, quarts, and gallons for solutions and teaspoons, tablespoons, ounces, cups, pounds, tons for powders. The metric system uses the liter as its base unit for liquid

TABLE 1.1

Comparison of US to Metric Volumes

US liquid measurements	Metric liquid measurements
teaspoon (tsp or t) 3 = 1 tbsp	5 mL
tablespoon (TB, Tbl, tbs, or T) 2 = 1 fl oz	15 mL
fluid ounce (fl oz)	30 mL
8 oz per 1 cup (C or c) – dry and liquid	250 mL
2 cups per 1 pint (pt)	500 mL
2 pints per 1 quart (qt)	1000 mL or 1 liter*
4 quarts per 1 gallon (gal)	4 liters

* 1 liter is slightly more volume than a quart.

volumes and we have already covered what it uses for powders. Table 1.1 shows a comparison of US to metric volumes.

Often, instructions to dilute a liquid concentrate are given as either ounces per quart or gallon in the US system or milliliters per liter. Here is an example of each:

- 1 oz of solution to 1 gallon of water
- 15 mL of solution to 2 liters of water
- 200 mL to 4 liters of water.

Information Exercise

- Utilizing the measuring devices in Figure 1.4, describe how you would fulfill the diluting instructions given.

A second method of diluting is by using ratios. They are often expressed as a number:number, or as a

decimal point, percentage, or fraction. For example, the instructions for diluting a window cleaner is 1:30. This means that you take 1 part of the concentrate and add it to 30 parts of water. This can be any unit of measurement: cups, milliliters, or liters:

- 1 cup of window cleaner to 30 cups of water
- 1 mL of window cleaner to 30 mL of water.

However, there are also instructions like this: 1:30 per gallon. This indicates that to make 1 gallon of window cleaner you must figure out how many ounces to add to 1 gallon. To figure this out we must remember that 1 gallon is equal to 128 oz. We would take the ratio number 30 and divide it into 128: $128/30 = 4.27$ oz. The next issue arises because we don't have a measuring device that we can accurately measure out 0.27 oz. But we work in a veterinary clinic that has graduated cylinders and syringes! These use milliliters and we know that 1 fl oz is equal to 30 mL. Here is the equation: $4.27 \text{ oz} \times 30 \text{ mL/oz}$. The ounces cancel each other, $4.27 \text{ oz} \times 30 \text{ mL/oz}$ so we would be left with mL and the answer is 128.1 mL. We have the choice of using the graduated cylinder or 12-mL syringe, refer to Figure 1.4. Which measuring device would it make the most sense to use? Both! You could accurately measure up to 120 mL with the graduated cylinder but would need to add the 8 mL using the syringe. The 0.1 mL would be dropped as it would be such a tiny amount it would not affect the dilution significantly.

Information Exercise

Utilizing Figure 1.4, select the correct implement to mix the following dilutions:

- 1:16 dilution per gallon
- 4 oz to 1 quart
- 120 mL per gallon



FIGURE 1.4 Measuring devices: (a) measuring cup – 250 mL; (b) large beaker – 2000 mL; (c) graduated cylinder – 1000 mL; (d) syringe – 12 mL.

18 Tasks for the Veterinary Assistant

Finally, you may see instructions for diluting a concentrate written as a percentage. This is a three-step formula:

$$\frac{\text{_____}(\%)}{100} \times (\text{_____ total amount desired} / 100 \text{ mL}) \\ = \text{_____ mL of concentrate.}$$

The final amount of solution needed is based on the total amount needed minus the milliliters of solution:

$$\text{_____ mL (total amount of water required)} - \text{_____} \\ \text{mL of concentrate} = \text{_____ mL of water.}$$

You have to subtract the starting volume from the final volume to get the amount of water required for the dilution. For example, you need to refill a quart spray bottle with a 3% dilution of bleach with water. We know that a quart is about 1000 mL. Plug the numbers into the formula:

$$3 \times (1000 / 100 \text{ mL}) = 30 \text{ mL.}$$

$$1000 \text{ mL (desired volume)} - 30 \text{ mL (concentrate)} \\ = 970 \text{ mL of water.}$$

30 mL of bleach is added to 970 mL of water
= 1000 mL of 3% diluted bleach solution.

Drug Calculation

Another mathematical problem used consistently in veterinary medicine is that to calculate drug dosages. These calculations are usually handled by veterinarians and veterinary technicians; however, there may come a time when you are asked to figure one out and being able to add value to you as an employee. Veterinarians prescribe medications based on their knowledge of pharmacology and diseases or conditions that these medications are specifically manufactured to treat. The amount to give an individual is usually based on weight in either pounds (lb) or kilograms (kg). Each medication is formulated to be therapeutic at a certain dosage. The medication is manufactured at a certain concentration, which is found on the label. This information is utilized to figure out how much medication an animal should receive for it to heal the disease or condition the patient is currently suffering from. The formula is expressed as:

$$\text{Weight (W)} \times \text{dose (D)} / \text{concentration (C)} \\ = \text{number of tablets, capsules, or milliliters required.}$$

For example, a non-steroidal anti-inflammatory drug (NSAID) is a routinely used medication for the treatment of pain in dogs. The dosage is 2 mg/lb of body weight (BW) per day, the patient is a 25-lb dog, and the medication comes in 75 mg tablet concentrations. Plug the information into the formula:

$$25 \text{ lb (W)} \times 2 \text{ mg / lb} / 75 \text{ mg / tablet.}$$

The pounds cancel each other out:

$$25 \cancel{\text{ lb}} (W) \times 2 \text{ mg} / \cancel{\text{ lb}} / 75 \text{ mg / tablet} = 25 \times 2 / 75 \text{ mg /} \\ \text{tablet} = 50 / 75 \text{ mg / tablet} = 0.666 \text{ of a tablet.}$$

As tablets cannot be broken into 0.66 portions, your only option in this case is to round down or up. With this medication the clinic will opt to round down to 0.5 or ½ of a tablet. If the answer was in the 0.8 or higher range it would be rounded up. Decisions on when to round up or round down will be those bits of information that you learn when you are working in the practice.

What happens if the dosage of the medication is in mg/kg? The first thing we must do is convert the weight of the patient from pounds to kilograms. Remember how to do that? Then proceed with the drug calculation. Here is an example.

Patient weighs 16 lb 13 oz. Your drug dosage is 4 mg/kg, the concentration of the medication is 20 mg/mL.

Weight conversion – first ounces into pounds: 13 oz / 16 oz / lb – oz cancels out – 13 oz / 16 oz = 0.81 lb

16.81 lb are then converted to kilograms: 16.81 lb / 2.2 lb / kg = lb cancel out 16.81 lb / 2.2 lb / kg = 7.64 kg

Drug calculation formula: 7.64 kg (W) × 4 mg / kg / 20 mg / mL – kg and mg cancel out 7.64 kg (W) × 4 mg / kg / 20 mg / mL = 7.64 × 4 / 20 = 1.528 mL.

We can drop the last two digits and deliver 1.5 mL.

Information Exercise

Solve the following drug calculations. Read each carefully!

- A patient weighs 42 lb 5 oz, and needs an injection of medicine, the dose is 0.04 mg/lb, the concentration is 0.54 mg/mL.
- A patient weighs 6 lb 11 oz and needs an oral antibiotic, the dose is 25 mg/kg and the tablets are 50 mg. They have score marks for breaking them in quarters.

Medical Terminology

The base languages of medical terminology are either Latin or Greek, with some exceptions. Therefore, learning medical terminology is very much like learning a new language. Recognizing and memorizing definitions of frequently occurring word parts is essential to deciphering a word's meaning. The word parts are key to understanding medical terminology. Most words will use

one or all the following: a prefix (beginning of a word), root (often the middle part of a word), and suffix (ending of a word). Not all medical terms will have all three parts but are often made up of at least two parts.

suffix starts with one, [ectomy] means surgical removal.

- **Encephalomyelitis** – [encephal] is the root word for brain or inside the skull, [o] is the combining vowel,

Information Exercise

Utilize the Appendix, the Glossary, or the internet to find medical terminology sources on prefixes, root words, suffixes, and combining vowels to determine the meaning of the following terms:

Medical term	Prefix	Root	Suffix	Combining vowel
Tachycardia				
Pneumothorax				
Urinary cystitis				
Otitis				
Hemorrhage				

- Prefixes are often used to indicate intensity, numbers, colors, sizes, position, and time.
- Root words are often related to body systems and/or convey the meaning of the medical term. Root words can be utilized as prefixes and suffixes.
- Suffixes are used to modify the root to indicate a procedure, condition, disease, or part of speech.
- Combining or connected vowels are o, i, e, and a. They are used to build more comprehensive words to describe a condition, disease, or action.

Here are some examples:

- **Intracardial** – [intra] prefix for within, [cardial] root word for heart. Note the absence of a combining vowel because the prefix ended with a vowel.
- **Conjunctivitis** – [conjunctiv] root word for conjunctiva or the white part of the eye, [itis] is the suffix that means inflammation.
- **Hysterectomy** – [hyster] root word meaning uterus, there is no combining vowel because the

[myel] is the root word for spinal cord or marrow, [itis] is the suffix for inflammation. Note that there is not a combining vowel between myel and itis, because itis starts with a vowel a combining vowel is not necessary. This also holds true for root words that end with a vowel.

Multiple abbreviations are used by veterinarians to shorten the time it takes to write orders, prescriptions, and instructions for the veterinary technician to carry out for a patient and to educate the client. As a veterinary assistant you may be asked to interpret these orders, prescriptions, and instructions. The ones you may be exposed to the most are those that have something to do with consumption of food and/or medications. Table 1.2 shows some examples.

The abbreviations in Table 1.3 are used for giving medications or treatments to certain areas of the body. These are just a few of the many abbreviations you will see used daily in a veterinary practice. These

TABLE 1.2

Examples of Abbreviations

Abbreviation	Meaning	Abbreviation	Meaning
ad lib	as much as desired	q	every
bw or BW	body weight	h	hour
qd	daily or once a day, every day	q2h	every 2 hours – number is interchangeable
bid	twice a day	NPO	nothing by mouth
tid	three times a day	x	duration of RX
qid	four times a day	PRN	as needed
RX	prescription	TX	prescribed treatment

TABLE 1.3

Abbreviations Used For Giving Medications or Treatments to Certain Areas of the Body

Abbreviation	Meaning
SQ, SubQ	subcutaneous – injection given under the skin
IM	intramuscular – injection given into the muscle
IN	intranasal – liquid squirted into a nostril
IV	intravenous – injection or catheter placed into a vein
PO, po	per os – by mouth or orally
PR, pr	per rectum – rectal medications
as, AS	left ear
ad, AD	right ear
au, AU	each or both ears
os, OS	left eye
od, OD	right eye
ou, OU	each or both eyes

abbreviations will crop up in the rest of this textbook. It is suggested that you keep a small notebook in your pocket and when you see an abbreviation or acronym that you don't know the mean of, write it down and look it up.

Information Exercise

One of the best ways to learn these root words, suffixes and prefixes, and abbreviations is to write them on flash cards to test yourself and practice using them every day in a sentence.

Chapter Reflection

Think about all of the information in this chapter. What was the easiest to learn? What was the hardest? What will you need to practice the most?