Chapter 1
Client Considerations

Making the decision to end an animal’s life can be extremely difficult for a client. Understanding the full scope of the reasons behind euthanasia before passing judgment as to whether it is ethically right or wrong is very important. Veterinarians can help clients determine if euthanasia is the best option for everyone. Veterinary training should provide the necessary tools to assess the animal and determine what physical changes the animal will endure as the end of life approaches. Age, disease, species, financial reserves, beliefs, etc., can all play a role in the decision to euthanize. The client may be considering euthanasia as the only possible option and it is the veterinarian’s role to identify suffering and make sure all options are explored. Clients typically understand their animals very well, especially pertaining to quality of life, and their contributions to the conversation are crucial. The trick is not to let fear of the unknown be the guiding factor, but rather have logical reasoning and education as the prevailing rational.

The best way to approach end-of-life care is to set up the type of relationship with a client that has the best interests of the animal in view as the goal of treatment (Rollin 2006). This can be done early on in the veterinarian’s communication with the family, long before a terminal diagnosis or any other reason for euthanasia presents. The client must feel safe talking to the veterinary staff regarding their fears, hopes, and plans for their animal’s future. Professionalism and respect for the situation go a long way in demonstrating compassion. When death becomes imminent, except maybe in pure crisis situations, preparations and mutual understanding should already have been established. Suffering by the animal and client can hopefully be better avoided. With respect to this final decision, euthanasia is the treatment to end suffering (McMillan 2001).

Suffering is a very subjective term and difficult to define for any one situation. We must take all factors into consideration to help determine if suffering is occurring, and once recognized, how it can be lessened or stopped altogether through euthanasia. Many people look at suffering as the presence of constant pain that cannot be managed. Others view suffering as the inability to do what the heart desires. Both concepts are viable and can further be
Veterinary Euthanasia Techniques

classified as being physical and/or mental in nature. Suffering tends to remain a quality-of-life issue, regardless of the species.

Whether the animal in question is client owned or is kept for production-based purposes, the client will need to consider the following factors regarding disease before deciding to proceed forward with euthanasia:

- Is the animal free of pain?
- Can pain be controlled enough to make the animal comfortable and maintain a reasonable quality of life?
- Is the client willing to care for the animal in its current state of health?
- Is the animal maintaining good body weight and normal hydration?
- Is the client able/willing to finance procedures that would heal or at least improve the animal’s condition?

Opening up dialog early in the end-of-life discussion is important so that everyone involved works together as a team and trust is established. Euthanasia is a viable option and should be addressed rather than skirting around the issue to avoid sadness by the caretakers. When euthanasia enters the discussion, the hope is that the client will feel safe talking about it and the veterinarian will understand their needs. In addition, it needs to be introduced delicately so that they do not feel that the veterinarian has given up prematurely (Cohen and Sawyer 1991). Ultimately, it is the disease or extenuating circumstance that is taking the pet’s life. Veterinarians facilitate death when it is necessary and no other reasonable options are available. Once the decision to euthanize the animal has been made, it is time to talk to the client about the process. They may have very specific questions regarding the euthanasia that need to be addressed:

- What should I know about euthanasia?
- Can or should other animals be present?
- Where can euthanasia be done? (At the clinic, farm, in the home, etc.)
- Is euthanasia painful?
- Do I have to be present?
- How do we handle the body afterward?

The method of euthanasia should be discussed with the client before it is attempted. Many people understand the varying techniques that may be performed to achieve death, but just as many will not. Veterinarians can describe the technique of choice given the circumstances and still allow the client to voice any concerns they may have. It is important to reassure those present that the goal of euthanasia is to provide a stress-free and painless death. Explaining each step of the procedure will help ensure that there are no surprises that may be upsetting to the client. Some clients will choose not to be present during euthanasia, so details will have to be discussed beforehand.
Honesty as well as thoroughness is the key when talking about euthanasia so that unexpected situations are minimized. Financial concerns, quality of life, and matters of personal importance should be considered.

Companion animals

An animal may be kept for companionship and a person’s enjoyment, as opposed to livestock or working animals that are kept for economic or productive reasons. Pets, as they are commonly referred to, are euthanized everyday by the thousands in North America, including species such as dogs, cats, exotics, horses, and so on. Euthanasia is chosen for many reasons, such as debilitating age-related changes, life-limiting disease, financial limitations, safety risks, behavior issues, and so on. In practice, we hope to avoid “convenience euthanasia” as much as possible, and maintain this ultimate act of kindness for the sick and suffering.

Morally, veterinarians must examine all possible options before euthanasia is chosen. On a personal level, are we as members of the veterinarian field comfortable with the decision? Was the decision-making process thorough and were we motivated by proper reasoning? Professionally, did we offer every viable treatment or re-homing option? Are we acting in accordance with the law and feel certain that public opinion would show favorably on the decision to euthanize? Overall, veterinarians and attending staff may harbor guilt and resentment towards their decisions if the answers to these questions have not been well thought out. One may need to ask themselves if their reason for, and method of, euthanasia became public, would they feel certain events played out in the best interest of the animal and family.

Because of client/family dynamics, current medical options, public opinion, ethics, etc, veterinarians are encouraged to reach outside themselves for answers to difficult questions surrounding euthanasia. When appropriate, entire families can be consulted and viewpoints heard before euthanasia is chosen. Staff members can be brought into conversations so that life-maintaining options are not overlooked. Hasty decision-making can fuel compassion fatigue and ‘burnout’, leaving veterinary staff feeling troubled and upset.

When veterinarians and caregivers examine best and worst case scenarios, the goal is to arrive at euthanasia when it is most appropriate and justified. Someone just given a life-limiting diagnosis for their pet may view euthanasia as the worst-case scenario. They choose palliative and hospice care to provide more quality time; to allow the pet to remain with the hospice-devoted caretaker for as long as possible in the face of life-limiting disease. When managed appropriately, their goal might be a peaceful natural death at home. Euthanasia will be chosen when suffering is recognized regardless of strong palliative care, i.e. pain management, oxygen support, etc. While still recognizing its benefits, this family will view euthanasia as the worst-case scenario and endeavor away from it through hospice care as long as possible. Examining euthanasia
Veterinary Euthanasia Techniques

as the best-case scenario, we might consider someone whose pet is diagnosed with a rapidly progressive incurable disease that is impossible to manage for numerous reasons. They do not have the time, physical ability, or financial resources to support a dying pet. Choosing euthanasia as the best-case scenario ultimately prevents suffering by all involved and allows them to be together to provide love and support for their pet during death. Therefore, they will endeavor towards euthanasia by acting on it sooner rather than later. To fully understand anyone’s reasoning behind the decisions they make, veterinarians and support staff should appreciate all philosophical and logistical factors that may be present. It is also very important to recognize that the emotional implications of their decisions may remain with them forever, especially when guilt is involved.

In terms of a pet’s disease, it is important to consider the pet’s suffering as well as the client’s. Can human caretakers safely move a large dog inside and outside for potty breaks? Are they emotionally strong enough to watch their horse worsen from lymphoma when it is the same cancer a human loved one died from? Can they financially handle the extreme cost of treatment for one cow and still provide for the rest of the herd and their client?

Also to consider is how much does the client understand about euthanasia. When euthanasia enters the conversation, the client may have a completely different scenario in mind than what will be done. Veterinarians or support staff can describe the procedure and address concerns of the client. If pain for the pet is the biggest concern, the client may be comforted to know that a sedative will be given first. If they are envisioning a gas chamber or something similar, they might be comforted to learn that it will be an injection, and so on. When euthanasia takes place in a shelter setting, and the client cannot be present, they might want to know standard protocol.

Educating clients about their options and how best to proceed is important so that, if they choose euthanasia for a beloved pet, they know that they are doing so for the right reasons. This will ultimately lessen the guilt and help them achieve healthier mourning (Wolfelt 2004).

Common questions by a client include the following:

• How do I know my pet is suffering?
• What does suffering look like?
• Does he have a good quality of life?
• Is it what my pet really wants?
• Is euthanasia the only option?
• What should I know about euthanasia?
• Is it important to have my kids present? Other pets?
• Where can euthanasia be done? In the clinic, home, or special center?
• Is euthanasia painful?
• Do I have to be present?
• How do I handle the body afterward?
• Will I be able to have a ceremony?
• How will I ever get over this loss?
Client Considerations

The answers to these questions depend on many variables: beliefs, prior experiences (of the client and tending veterinarian), education, physical and mental fortitude, community offerings, etc. With regard to suffering, a quality-of-life assessment may be performed to help the client understand the changes that they are seeing in their pet. Factors such as hygiene, mobility, mentation, appetite, etc., are considered collectively to help a client determine how comfortable a dog or cat is in its body and surroundings (Villalobos and Kaplan 2007). If children will be present, they should be gently instructed on how euthanasia will occur and why. Children do remarkably well when introduced to euthanasia in a positive and safe manner (Cooney 2011). The presence of other pets may also be allowed if the client and veterinarian deem it appropriate. The location of the procedure depends on how the practice is designed and by what means veterinarians can accommodate a client’s request. If the service can be performed in or near the client’s home, they should be informed of that ahead of time. A memorial garden or comfort room may be perfect too.

A big concern for some clients is whether or not to be present when saying goodbye to a beloved pet. Many individuals find the act of euthanasia too emotional and thus feel they cannot be there. Like many of these questions, the answer is up to them. However, if they are leaving because they have a negative perception of the euthanasia procedure, veterinarians and staff can help them to understand exactly what will take place. Taking away the unknown can make the last moments with their pet more memorable and maintain the human-animal bond at its most critical time.

Once the decision has been made to proceed with euthanasia, there are numerous questions that need to be addressed by the tending veterinarian:

- What does the client need to know about euthanasia?
- Where should it take place?
- Who should be present?
- Has the body aftercare been decided?
- Is the person making the decision authorized to do so?
- Should a necropsy be chosen?
- Do we have any financial concerns or beliefs that need to be discussed?

Preparations for euthanasia will be made before the appointment and continue throughout to make sure that things proceed smoothly. The goal of those assisting with the procedure should be to make decisions on behalf of the client that will make their experience less stressful. It is comforting for them to know that the veterinary staff is working together to handle all arrangements.

Before gathering with the client and pet, everything should be ready to proceed. In the clinic setting, all drugs and equipment should be readied, the lights should be set to a comfortable level, and the staff alerted to the time and location of the euthanasia. There are usually many people involved with euthanasia in the hospital setting: receptionist, technician, doctor, and vet students where teaching is performed (Martin and Ruby 2004). In the field,
those gathered may simply be the veterinarian and client, as is often the case on house calls. All drugs and supplies should be drawn, drugs recorded, and readied for the pet. If the setting and situation calls for personal touches such as candles, music, etc., everything should be in place. Clients may want to lay on the ground with smaller animals, so providing blankets, etc., can be a welcomed touch. It is important that everyone working in the area is alerted to the procedure, by verbal communication, a marker outside the door or area, etc. When possible, the surrounding area should be kept quiet to prevent distractions.

To allow the client more privacy, appointments can be scheduled during quieter times of the day, and handling payment and having forms signed beforehand can be helpful. More and more practices are gathering information and accepting payment over the phone, so it does not need to be discussed during the appointment. If practice policy is to have aftercare arrangements made ahead of time, such as a time for the crematory to pick up the pet afterward, this can all be done before euthanasia. It is important to be flexible, understanding, and compassionate to the client’s wishes and emotions.

If the client chooses euthanasia outside of the clinic, for example, at their home, unique preparations need to be made. The attending veterinarian must carry all supplies with them to the pet being helped. Being prepared for every situation will help ensure a smooth procedure. Mobile veterinarians should have a good navigation system in place to ensure they arrive at the home on time. It is also helpful for clients to prepare themselves when you arrive by turning off phones and limiting distractions (Cooney 2011).

Following euthanasia, clients feel a wide range of emotions: sadness, anger, relief, guilt, helplessness, and more. Even if they have experienced the loss of a pet before, each time is unique and reflects directly upon the relationship they had with their animal. Veterinarians and their staff should know how to accurately discuss grief, offer guidance, and be informed on what the community can offer with aftercare options and pet loss support.

### Species-specific considerations

#### Dogs and cats

According to the American Society for the Prevention and Cruelty to Animals (ASPCA), there were an estimated 75 million dogs and 85 million cats living in homes across the United States in 2011. A large percentage of people consider these animals to be the members of their family. Many are treated like surrogate children, and the pending loss of life can be overwhelming for those who have devoted so much love and time toward their care. With dogs and cats living close to home, usually in the home or within the confines of the property, the connection these two species have with their “people” could be considered unparalleled to other species in today’s society (Figure 1.1). Dogs and cats present unique challenges with regard to euthanasia, not because of any
great anatomical differences, but rather because of the kinds of requests and wants that come from their human caretakers.

Because dogs and cats are so commonly intertwined with our daily life, clients commonly request unique locations for euthanasia. In the typical clinic setting, comfort rooms may be an option. In the home setting, requests such as “on the master bed” or “under the favorite tree in the backyard” are common. More elaborate requests may include “next to the lake frequented during hikes” or “in the motor-home the pet liked to travel in.” Any place may be accommodated within reason as long as the euthanasia can be conducted safely and state regulations allow it.

Our pets develop lasting human relationships within the family and beyond, so it is common for friends and extended family to be present. For dogs and cats, this may include pet sitters, groomers, breeders, kennel attendants, and other veterinarians or vet technicians involved in the pet’s care. For those people who may have a particularly difficult time with the loss, pet loss support personnel may also be present.

Many American households have more than one pet. This means that the client will need to decide if other pets are to be allowed to remain during the euthanasia procedure. The decision to allow another pet to remain in the area will depend on client beliefs, the temperament of both animals, the veterinarian’s recommendations, etc. Ultimately, this is up to the client, unless other pets are disruptive to the procedure, wherein the veterinarian may suggest that the others be allowed in after the procedure to view the body.

How the euthanasia procedure itself is conducted can also be affected by dog and cat clients, commonly called pet parents. They may request pre-euthanasia sedation or anesthesia for their anxious dog or request an
Veterinary Euthanasia Techniques

Intraperitoneal injection for their cat because they want time to sit with them while they gently “slip away.” Small animals can be euthanized on the client’s lap, in their arms, etc., keeping the human-animal bond strong up until the end. These are matters that can be talked about before euthanasia is attempted. Actual euthanasia techniques will be described in Chapter 5.

Before death occurs, clients will need to know the common physical changes their dog or cat’s body will undergo. They should be prepared for urination and defecation, possible agonal breathing, muscle fasciculation, etc., all of which will be discussed later. If they know what to expect, any changes they see will generally be acceptable, especially when they know that the actions are completely involuntary.

Whenever possible, aftercare arrangements, such as cremation or burial, should be determined before euthanasia. Dogs and cats can be easily transported to a cremation facility or pet cemetery for internment or even buried on the client’s property if local law permits. Large dogs can be moved using stretchers and smaller dogs and cats can be carried in blankets, towels, burial boxes, etc. As mentioned previously, dogs and cats commonly fill the role of surrogate children and clients may expect their bodies to be treated with the same level of respect as a human loved one. Veterinarians should strive to meet the level of care expected by the client.

Exotics

Working with exotic companion animals has many rewards as well as many challenges. Their families often view these animals in different ways. They can be pets that are part of the family (Figure 1.2), or a less valued commodity that the client may not be willing to spend much money on for health care. Many clients want to help the animal within reasonable financial constraints and want to be sure the animal is not suffering. So many times, veterinarians are faced with the option of euthanasia simply due to the client’s finances, even more so than with dogs and cats, especially when dealing with the small pocket pets such as hamsters, gerbils, and mice. These have a relatively short lifespan. Clients with fish of any species often value them as companion animals and share a human-animal bond similar to that seen between clients and other pets, such as dogs and cats (AVMA euthanasia guidelines draft review 2011). Actual euthanasia techniques will be described in Chapter 5.

Reptiles can survive a very poor state of health for extraordinarily long periods of time, so when they do arrive at the hospital, sometimes the only option is euthanasia. When medical care is a viable option, sometimes the amount of care they need or the home care required from the client is too much for the clients to take on and they decide on euthanasia.

Euthanizing almost any of the avian species is a very emotional ordeal in private practice. Birds are usually beloved pets and possibly have been part of the family for years, if not decades. This includes ducks and chickens, as these birds can become very special pets. The decision to euthanize can be very difficult and emotional, and veterinarians need to be there for our clients.
Figure 1.2  Young boy bonding with his rabbit.

as guides to help them with their decision. The same guidelines as with other species should be followed such as quality of life, degree of pain or discomfort present, the ability of the client to care for the bird in its particular condition, and sometimes client financial concerns. Regardless of the reason, once the decision is made to end the life of the bird, the decision of whether the clients want to be present during the procedure and what form of body care is desired should all be made prior to the procedure. The clinician should offer a footprint or any feathers or leg band from the bird as a memorial of their pet. If the clients wish to be present during the euthanasia procedure, the steps involved should be explained prior to the procedure.

Another challenge is handling exotics and minimizing their stress in front of clients for the euthanasia procedure. Unfortunately, many exotic companion animals die before the client gets them into the hospital, either on the trip in or just after they have made the appointment. When this happens, the client may come to the conclusion that the trip into the veterinary hospital was just too stressful and that is what killed the pet. In reality, many people notice that their exotic pet is in need of medical care after it has been sick for quite some time. This can be due to the ability of the exotic pet to hide their symptoms for quite a long time, as a mode for survival. Other times, the client either is not
Veterinary Euthanasia Techniques

Aware that there is veterinary care available for these types of pets or they are unwilling to spend money on them and then decide too late that they better get them in for treatment. This commonly happens when the client has left the pet care in the hands of a child too young to make the decision on the pet’s state of health. Whichever the case may be, birds and the small mammals such as hamsters and guinea pigs die before or just after their arrival to the hospital. If the ability of the exotic pet to reach the hospital setting for euthanasia is in question, then home visits may be more appropriate.

For those clients that do reach the clinic for euthanasia, minimizing stress is of the utmost importance. Whenever possible, exotics should be kept in familiar surroundings, such as a home cage and an aquarium. If the euthanasia procedure can be accomplished without removing them, this would be ideal for everyone. If physical contact is necessary, especially with regard to exotics that have had little human contact, a quiet environment setting and a rapidly performed euthanasia must be achieved.

There are varying thoughts on allowing other exotics to be present for the death of a companion. Opinions differ mostly because of the types of relationships that some exotics maintain and the length of time they have been together. With respect to birds, for example, a client may request that another bird be present during euthanasia. Birds are very sensitive and intelligent and can get quite stressed watching their companion die. When this is the concern, it may be prudent to recommend that the living bird view the body after euthanasia, but not be there for the actual process of euthanasia. Ultimately, the family will know what may be best for the remaining housemate. Another exotic pet, the rabbit, is also considered to be closely bonded to housemates. Clients may request that another rabbit be present or be allowed to spend time with the body afterward. Families have been known to borrow the body of the rabbit just euthanized to take home to the cage mate and then bring it back to the clinic the next day for aftercare such as cremation. Some members in the House Rabbit Society think that it helps the bonded mate get over the loss of their companion, so they recommend it.

It is not uncommon for some exotics to vocalize during a euthanasia procedure. This can alarm both the client and the clinician because they can happen suddenly and sometimes quite loudly. Two examples of this come from a stressed rabbit and hedgehog, both of which are generally very quiet animals with minimal vocalizations during life. If stressed during the euthanasia procedure, the hedgehog can make a sound similar to a young child screaming and the rabbit may give a piercing cry out. Generally though, if they are handled quietly and calmly, they will not get stressed. It is helpful to warn the client of this possible occurrence ahead of time. Again, pre-euthanasia sedation may help to lessen stress and subsequent vocalization.

Also, as with other types of companion animals, the exotic pet can continue with body movements long after the heart has stopped. In most of the species, the eyes do remain open and they do empty their bladders and bowels, so preparations for this may be made ahead of time. With birds, the eyes may close and the crop fluid will flow out of the mouth, especially if it was full prior
Client Considerations

to euthanizing. The veterinarian should always warn the client of all expected physical changes and verify when death has occurred.

Horses

The position of the horse in society has evolved over the last half century from a working animal of primarily economic importance to a companion animal/pet whose economic value may be eclipsed by its personal value. It is essential that we know what relationship the client has with a horse before any other discussions take place. Veterinarians are commonly called to cattle ranches to euthanize a working animal and find tears in a tough old rancher’s eyes when the horse has died.

There are many reasons to euthanize a horse (AAEP 2007). Trauma is a common reason and often requires an immediate decision for humane reasons. Advanced age, severe illness or lameness, and even economic conditions may be valid reasons for euthanasia. For some younger horse clients, this may be the first time they have had personal experience with death. For others, this horse may have been considered part of the family and may have been with the client for decades. If it is an emergency situation, the client, and possibly others in the vicinity, often have to make a decision quickly. Veterinary advice in these situations may be invaluable for the client to choose the most humane treatment for their animal (Lenz 2004). Actual euthanasia techniques will be discussed in Chapter 5.

The client may be considering euthanasia as only one possible option, when really several options may exist. One consideration is selling the animal for slaughter, which may ameliorate the financial loss incurred when a working animal is taken out of service. Currently, the value of a horse for slaughter is very low, due in part to legislation in 2007, which has forced closure of all equine slaughter plants in the United States (Heleski 2008). Horses sold for slaughter in the United States are transported to Canada or Mexico in the present system. This is not optimum for two reasons. First, the horses must be transported for long distances to reach a slaughter facility. Second, and perhaps more important, veterinarians have no control over slaughter procedures utilized in these plants (Cordes 2008). As this book is being written, several states are pursuing legislation that would legalize horse slaughter. The result of this legislative effort is hard to predict in the current political climate. If slaughter is legalized again in the United States, it would increase the base value of horses and give clients a viable means of recovering some of the investment they have made in their working animal (Heleski 2008). An active horse slaughter industry would also decrease the very real problem of equine carcass disposal in the United States.

Another consideration is the well-trained horse that has become physically unable to perform his work. This horse might be sold to another person who requires a much lower level of performance. It is also possible to find organizations such as therapeutic riding groups who will be able to use a gentle, dependable horse that cannot otherwise perform as a higher level athlete.
Veterinary Euthanasia Techniques

Donations to these groups may have significant tax advantages for the horse client as well. Of overwhelming concern in these situations is the horse’s comfort. A seriously injured horse may not be able to be used humanely, even at the lowest levels of performance.

Clients may choose to breed a very valuable animal, which has been injured, before considering euthanasia. Their motives may be to either recoup some of their loss or to perpetuate a loved companion. These situations need to be looked at carefully to ascertain if this is a humane use of this animal or if immediate euthanasia is a better option for the horse. New enhanced reproductive techniques may now allow harvesting of eggs or sperm immediately after euthanasia in certain situations.

Once the decision is made, it is time to talk to the client about the process. The client may have a very strong preference for the method of euthanasia used, and the veterinarian will need to work to accommodate their wishes within the bounds of humane euthanasia. For example, some owners may request a physical method of euthanasia rather than an injection so the horse may be allowed to biodegrade naturally; give the body back to nature if you will without risking secondary wildlife death from barbiturate ingestion. They will need to know why a captive bolt gun is being used or why it is important to euthanize close to an area with vehicle access. Moving a deceased horse has many challenges that must be considered before death occurs. More on equine aftercare specifics will be discussed in Chapter 6.

Some clients may ask if euthanasia will be painful for the horse or if the horse will be stressed or afraid. Veterinarians can reassure them that the goal is to make the procedure as quiet and painless as possible for the horse and for the client. Each step of the procedure can be discussed so there are no surprises that may be upsetting to the client and those present.

Some clients will choose to be absent when the euthanasia is performed. This is a legitimate choice, which may actually make the process easier for the veterinarian and the horse. A very emotional client can transfer their anxiety to the horse. If they do choose to observe the euthanasia, it is important to talk about what they will see.

Almost all horses will be standing when euthanized. They will generally not just lie down and shut their eyes, but will lose consciousness and fall to the ground. This abrupt crash to the ground can be the most troubling part of equine euthanasia. In some hospital situations, an anesthesia induction stall may be used to mitigate the fall. This appears more acceptable to the horse client but may not be better for the horse. Many horses will become anxious in this very confining space. It is important for the client to understand that when the horse falls it is unconscious and, therefore, will not feel anything or be afraid. Even though the horse will be unconscious, the heart will continue to beat for several minutes. The veterinarian must stay and monitor the horse until all signs of life are gone.

Human bodies are always presented with eyes closed at funerals. Many horse clients are startled and troubled when the horse dies with eyes wide open. Veterinarians often forget that open eyes are equated with
Client Considerations

Figure 1.3 Woman and her horse. This close proximity during euthanasia is not safe and should be avoided. Time for bonding should be allowed before the procedure begins.

consciousness, and perhaps even fear, by some horse clients. It is important to take the time to explain this to the client and reassure them the horse is not aware.

Because it is unnatural for a horse to fall down, this may startle other horses in the area. Some clients want the other horses to understand that their herd mate is gone. Some horses will actually try to get the euthanized horse up by nuzzling or pawing at it. Other horses will completely ignore the deceased horse. Most horses come investigate for a short time and then go on as if nothing can be done. Whatever the expected reaction, horses can be allowed to watch as long as they can do so safely.

Companion Livestock

Some commercial livestock have value to the client that goes beyond simple commercial dollar value. This may be true for special seed stock animals, show or 4H animals, or pet livestock. In these cases, treatment and euthanasia decisions can become very complex. Appreciating the emotional ties a client may have with the animal become very important in the communication process (Figure 1.4). Clients may request treatment and care that is beyond the ordinary. There are also clients of pet livestock that do not feel comfortable with euthanasia of their pet and will request supportive care that provides as much comfort to the animal as possible until it passes away naturally. These requests often challenge the livestock veterinarian and, in some cases, test our beliefs in the client’s ability to minimize animal suffering and provide animal welfare, including a humane death.
Veterinary Euthanasia Techniques

Figure 1.4 Two boys presenting their livestock.

Production animals

An important aspect of livestock production and veterinary medicine is recognizing animal suffering and providing a humane end of life for animals that have serious or terminal disease. Livestock including cattle, sheep, goats, pigs, llamas, alpacas, and more all fall into this category. This section will focus on the specific considerations and methods of euthanasia for livestock species and is meant to augment the information provided in the American Veterinary Medical Association (AVMA) Guidelines on Euthanasia.

There are many factors that go into the decision of whether an animal should be euthanized. In the livestock production setting, this will include the type and severity of disease, the likelihood of recovery from disease, the degree of recovery expected and the potential for persistent complications and suffering, and the prognosis for return to function or productivity. In addition to the health and animal wellness issues, veterinarians and producers are also faced with the evaluation of the economics of treatment relative to the predicted return to production.

A simple but effective method of economic decision-making is to evaluate the replacement value of the animal relative to the prognosis for return to productivity and the cost of treatment. On strictly economic terms, further treatment of an animal is economically justified if:

\[
\text{Replacement Value} \times \text{Prognosis} > \text{Cost of Treatment}
\]

For commercial livestock operations, it is evident that more complicated medical conditions generally have a lower prognosis and higher cost of
treatment resulting in less incentive to treat the animal. In these cases, culling or, if necessary, euthanizing the animal should be considered. In some circumstances, the animal has already been treated with medications that have meat-withholding periods and the animal cannot be immediately salvaged for slaughter. Such cases may present difficult dilemmas regarding the cost of further treatment, prolonged drug withdrawal times, or continued suffering of the animal if treatment is withdrawn to allow for elimination of drug residues. In some cases, further treatment is not warranted and salvage for slaughter is not an option due to the animal being recumbent, having drug residues, or having a disease that would not be acceptable for slaughter. In such cases, the decision for euthanasia is often the most humane choice (Figure 1.5).

Figure 1.5 Determining factors for the euthanization of livestock. (Robert Callan, author.)
Veterinary Euthanasia Techniques

Some indications for euthanasia include the following:

- Fractured leg, where treatment is not considered a suitable option.
- Severe trauma.
- Progressive or nonresponsive infectious disease (pneumonia, pleuritis, peritonitis, mastitis, metritis, enteritis, etc.).
- Inability to stand or walk.
- Zoonotic disease with significant public health implications (i.e., rabies).
- Unresponsive metabolic disease resulting in debilitation.
- Progressive organ failure (heart, liver, kidney).
- Persistent pain or discomfort (suffering) that is not responsive to medical treatment.

The question of whether or not an animal is suitable for market and slaughter is sometimes difficult. Beef quality assurance guidelines recommend that animals should not be marketed for meat unless they:

- do not pose a known public health threat;
- have cleared proper drug withdrawal times;
- do not have a condition that would result in condemnation at slaughter, such as severe infectious disease, advanced neoplasia, or unresponsive metabolic disease;
- are able to ambulate and are able to remain standing for transportation;
- are not severely emaciated (body condition score >2.5/9 for beef cattle or >1/5 for dairy cattle);
- do not have a uterine or vaginal prolapse with visible fetal membranes;
- do not have advanced stages of ocular neoplasia (eye cancer, ocular squamous cell carcinoma);
- do not have advanced lumpy jaw.

Most livestock producers are very familiar with terminal disease in their animals and the decisions leading up to euthanasia. As some producers put it, “If you own livestock, you quickly learn about dead stock.” Livestock producers are routinely very knowledgeable about basic medical conditions in their animals, fundamental care, and treatment. In addition, most livestock producers generally demonstrate a strong sense of animal welfare and are conscientious at minimizing animal suffering in the face of illness or injury.

The initial consideration with the client is whether or not euthanasia is an appropriate decision. Once the decision for euthanasia is made, it is important to discuss the method of euthanasia and what the client should expect from the procedure. When working with a regular client, the method of euthanasia has often already been established. However, with new clients or clients that own pet livestock, this is a very important discussion. There are two basic options for euthanasia in livestock: euthanasia by lethal injection of a pentobarbital solution, or euthanasia by rendering the animal unconscious with penetrating impact (captive bolt or gunshot) to the head, followed, if necessary, by a
secondary means to cause cardiac or respiratory arrest. Both methods have their advantages and disadvantages and must be discussed with the client when the method of euthanasia has not been previously established.

Euthanasia by injection of a pentobarbital solution often is considered a more aesthetically acceptable method of euthanasia than gunshot or captive bolt. However, the cost of the procedure may be considerably more due to the cost of the euthanasia drugs, particularly in larger livestock such as cattle. There may also be additional costs associated with the placement of an intravenous catheter if this is deemed necessary. If euthanasia by injection of pentobarbital is selected, then the carcass remains must be disposed of in a way that prevents scavenger animals (dogs, coyotes, wolves, bears, eagles, etc.) from consuming any of the tissues. This means that the carcass must be quickly picked up by the renderer, buried, or properly ensiled to prevent toxicity and possible death in scavenger animals.

Euthanasia by gunshot or captive bolt may have negative aesthetic connotations with some people, particularly pet livestock clients, or when used on neonates and young stock. While this may be difficult to explain in rational terms, it is still the perception of many clients and veterinarians. As will be discussed, proper euthanasia by gunshot or captive bolt renders the animal immediately unconscious with less physical or psychological effects caused by the prolonged restraint and time for venipuncture that is required for intravenous administration of pentobarbital solution.

It is always good to ensure that the client understands the fundamental goals of euthanasia. A well-performed euthanasia will rapidly render the animal unconscious in a humane way with minimal physical pain or psychological stress. This is followed by cardiac and respiratory arrest. For inexperienced clients, it may be useful to describe the procedure in detail prior to performing the euthanasia so that they know what to expect and may also be prepared for any adverse responses. For example, if euthanizing an animal by pentobarbital injection, the client should be informed that the animal will become unconscious rapidly after the injection and will become recumbent. There may be some persistent paddling of the legs. Respiratory arrest generally precedes cardiac arrest but this can take up to 5 minutes. During that time, the animal may demonstrate several deep breaths. In ruminants and camels, the loss of esophageal tone following euthanasia will often result in spontaneous passive regurgitation following death. Spontaneous urination and defecation may also occur.

When gunshot or captive bolt is used, the animal is instantaneously rendered unconscious and will become immediately recumbent. This is more dramatic than with pentobarbital euthanasia, and the client should be forewarned, particularly if they are observing or assisting with the restraint of the animal. Unconsciousness can be demonstrated by the lack of a corneal reflex. Hemorrhage is often observed from the penetrating wound. Nasal hemorrhage (epistaxis) may also be observed. While the animal is rendered immediately unconscious, cardiac or respiratory arrest may not occur right away and secondary methods (pithing, exsanguination, intravenous potassium chloride, and
Veterinary Euthanasia Techniques

Pneumothorax) are often used to ensure rapid death. During this time, the animal may show persistent paddling that can increase with time until final death. This is often more pronounced compared with euthanasia by pentobarbital because the penetrating concussion to the brain, while rendering the animal unconscious, does not prevent involuntary motor activity of the extremities. Further, the penetrating concussion disrupts the motor inhibitory centers of the brain making spontaneous peripheral motor responses and reflexes more exaggerated.

The physical location of the euthanasia may also be a consideration for the client and the veterinarian. Should euthanasia be performed on the farm or at a veterinary facility? If the animal is recumbent or would have difficulty being transported, a farm euthanasia may be preferred. The client may request an on-farm euthanasia for pure convenience. This must be balanced with the availability of suitable restraint for the animal in order to perform the procedure in a safe manner. Options for disposal of the carcass must also be considered. In the cases of acute skeletal trauma or fracture, the client may request on-site slaughter. Alternatively, the animal may be picked up by the renderer, buried or ensiled on site, or sent to a veterinary diagnostic laboratory for necropsy. If the client would like a necropsy, this can be performed on the farm following the euthanasia. If the client requests that a necropsy be performed at a veterinary diagnostic laboratory, it may be easier to load the animal onto a trailer alive and then transport to the diagnostic laboratory for evaluation, euthanasia, and necropsy.