

The Emergency Euthanasia of Horses

*Consideration for Owners, Equine Facility Managers,
Auction Market Operators, Horse Transporters,
and Law Enforcement Officers*



Euthanasia is defined as
“the intentional causing of
a painless and easy death
to a patient suffering from
an incurable or painful
disease”

Webster's II University Dictionary, 1996

Introduction

Catastrophic accidents and illness affecting horses can happen at any time. This may necessitate that an animal's life be ended humanely. This guide is designed to aid owners, equine facility managers, auction market employees, horse transporters and law enforcement officers in making the appropriate decisions regarding the emergency euthanasia of horses. It is always best to seek assistance from a veterinarian when considering euthanasia. However, in some circumstances a veterinarian may not be available. It will be in the horse's best interest to provide a swift and humane death to prevent or minimize suffering. These guidelines are a summary of the current, best practices known for providing a humane death to horses in the absence of a veterinarian.

There are three acceptable mechanisms for inducing emergency euthanasia in horses:

- Drugs that directly depress the central nervous system (barbiturates, anesthetics). Overdoses lead to depression of the respiratory centers and cardiac arrest.
- Physical or functional destruction of brain tissue vital for life (e.g., gunshot, penetrating captive bolt gun).
- Methods that induce unconsciousness followed by exsanguination (e.g., massive blood loss).



Considerations in the Selection of a Euthanasia Method

The following information should be considered when choosing the appropriate method of euthanasia:

- **Human Safety** - The method should not put anyone at unnecessary risk. Considerations include ricochet of a bullet and/or the unpredictability of a falling or thrashing animal.
- **Horse Welfare** - All methods of euthanasia should produce a quick and painless death. However, certain environments or animal behaviors may prevent the use of a specific method.
- **Restraint** - Each method requires a differing amount of restraint. For example, administration of barbiturate or use of a captive bolt gun require physical contact with the animal, whereas a firearm does not.
- **Practicality** - The euthanasia method selected must be practical in the emergency situation that currently exists. For example, the necessary equipment must be readily available, and one must realize that barbiturates are only available to licensed veterinarians.
- **Skill** - All methods require some degree of skill or training to administer correctly. Horse owners in remote locations, auction market employees, horse transporters and law enforcement personnel should be aware and appropriately trained in at least one emergency euthanasia method.
- **Cost** - Some methods require a larger initial investment (e.g. firearms and penetrating captive bolt gun) but are relatively inexpensive to use thereafter.
- **Aesthetics** - Some methods of euthanasia “appear” less objectionable to the untrained eye. Most methods will result in some exaggerated muscular activity (e.g. leg movements and twitching) even when the animal is not experiencing any pain or distress.

The Euthanasia Decision

In certain emergency situations, there may be a need to euthanize a horse in order to prevent unnecessary pain and suffering from injuries for which there is no treatment that will save the horse’s life. In most circumstances, there is adequate time to call a veterinarian to determine if there is a hopeless prognosis for life and to euthanize the horse if necessary. However, when a veterinarian is not available, the following guidelines can be used in determining if there is an immediate need to euthanize a horse to avoid excessive and unnecessary suffering:

Is the horse a hazard to itself or its handlers?

Examples may include violent or uncontrollable self-destructive, thrashing behavior in traffic or crowded areas.

Does the immediate condition carry a hopeless prognosis for life?

Examples may include, open long bone (leg bones below the shoulder or hip) fractures, exposed abdominal contents, and loss of a limb.

Other non-emergency situations that may require decisions regarding euthanasia include chronic or incurable conditions or conditions that require continuous medication for the relief of pain or suffering. Veterinary consultation should be sought in these situations.

Location

When practical, choose a location where the carcass can be easily reached by removal equipment. Remember not to cause any further pain or unnecessary suffering in this handling process.

Summary of Equine Euthanasia Methods

Method	Human Safety	Animal Welfare	Skill Required	Cost	Aesthetics	Considerations
Gunshot	Moderate; firearm laws apply	Good	Moderate; correct placement essential	Low	Fair; some blood and body movement	Distance from animal can be maintained
Penetrating Captive Bolt Gun	Good	Good	Moderate; correct placement essential	Low	Fair; some blood and body movement	Contact with animal required
Barbiturate Overdose	Good	Excellent	Moderate; intravenous injections required	High	Good	Drug only available to licensed veterinarians
Exsanguination	Fair	Good; animal must already be unconscious	Moderate	Low	Poor; very bloody	Not sole method of euthanasia

Moderate - Operator training required; some risk of injury involved.

Fair - Proper training, appropriate equipment, and restraint required.

Good - Safe with good restraint and proper training.



Details of the Summary

Gunshot

The proper location of gunshot penetration is important in the destruction of the brain and minimizing suffering. The optimal site for penetration of the skull is one-half inch above the intersection of a diagonal line from the base of the ear to the inside corner of the opposite eye. The firearm should be aimed directly down the neck, perpendicular to the front of the skull, and held at least 2-6 inches away from the point of impact. When performed skillfully, gunshot induces instantaneous unconsciousness, is inexpensive, and does not require close contact with the horse.

A .22 caliber long rifle is recommended, but a 9mm or 38 caliber handgun will be sufficient for most horses. The use of hollow-point or soft nose bullets will increase brain destruction and reduce the chance of ricochet. If a shotgun is the only available firearm, the use of a rifled slug is preferred.

Experience in the use of firearms with large animals is helpful. Care must be taken to minimize the danger to the operator, observers, and other animals. Personnel must comply with all laws and regulations governing the possession and discharge of firearms; local ordinances may prohibit the discharge of firearms in certain areas.

Penetrating Captive Bolt Gun

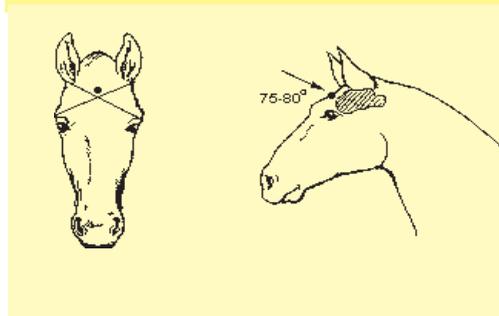
When properly used, the penetrating captive bolt gun produces immediate brain tissue destruction that kills the animal. Captive bolts are powered by gunpowder, thus the selection of the cartridge strength should be appropriate for the size of the animal (adult vs. foal) and this varies among manufacturers. The penetrating captive bolt gun should be placed very firmly against the skull at the same location previously described for gunshot. Horses must be adequately restrained to ensure proper placement of the captive bolt.

Maintenance and cleaning of the penetrating captive bolt gun as described by the manufacturer must be followed to ensure proper operation.

Barbiturate Overdose

When properly administered by the intravenous route, barbiturate overdose (sodium pentobarbital) depresses the central nervous system, causing deep anesthesia progressing to respiratory and cardiac arrest. However, barbiturates can cause sudden or violent falls if administered too slowly or inefficient quantities. Thus, the use of sedatives (e.g., xylazine or detomidine) prior to the barbiturate overdose can minimize violent thrashing and provide a more controlled recumbency process which is less objectionable for the owner and other public viewers. Induction of unconsciousness results in minimal pain associated with the needle puncture. While barbiturate overdose is less disturbing to observers (more aesthetically acceptable), it is also more expensive than other options.

Placement



It is illegal for a non-veterinarian to possess injectable euthanasia products. The carcass of the horse will be unfit for human or animal consumption. Keep in mind that house pets and wildlife that ingest portions of the barbiturate-injected carcass can be poisoned.

Exsanguination (massive blood loss)

This method can be used to ensure death immediately following stunning, induction of anesthesia, or unconsciousness. Because severe anxiety is associated with the hypoxia (lack of oxygen) caused by exsanguination, it must **not** be used as the sole method of euthanasia. The most common method in the horse is to cut the carotid arteries and jugular veins on both sides of the neck. A long, sharp knife is fully inserted in the upper one third of the neck behind the angle of the jaw and directed toward the spinal column through the trachea, until bone is contacted. Successful severing of the vessels can be recognized by freely flowing, pulsing blood. This procedure is very disturbing to observers due to the large volume of blood loss.



Confirmation of Death

Confirmation of death is essential. Immediately following the euthanasia method, a standing animal should collapse and may experience a period of muscle contraction (usually no longer than 20 seconds). This will be followed by a period of relaxation and some poorly coordinated kicking or paddling movements. The pupils of the eyes should be totally dilated. The horse must be checked within 5 minutes to confirm death. Death may be confirmed by the absence of breathing, a heartbeat, and a corneal reflex (a blink). To check a corneal reflex (blinking response), touch the animal's cornea (surface of the eye); there should be no response to the touch if the animal is deceased. The presence of any eye movement or blinking at this time is evidence of sustained or recovering brain activity and the individual should repeat the same or an alternative euthanasia procedure.

Unacceptable Methods of Equine Euthanasia

Ethical and humane standards of euthanasia DO NOT permit the following methods of euthanasia for horses:

- Manually applied blunt trauma to the head.
- Injection of chemical agents into conscious animals (e.g., disinfectants, certain electrolytes such as KCl, non-anesthetic pharmaceutical agents).
- Air embolism (e.g., the injection of a large amount of air into the circulatory system).
- Electrocutation with a 120-volt electrical cord.

Carcass Disposal

Animal carcasses should be disposed of promptly by a commercial rendering service or other appropriate means (on-farm burial, incineration, direct haul to a solid waste land fill). Disposal should be in accordance with all federal, state, and local regulations.

Euthanasia Plan

Owners and producers should work with their veterinarian to determine which methods of euthanasia might be suitable in their management system. It is advisable to post the written emergency euthanasia plan in a centralized area as a guideline for the humane destruction of animals on the premises. The plan should be reviewed with new employees.

Euthanasia Action Plan

Business Name: _____

Veterinarian Name & Phone: _____

Date: _____

Drafted By: _____

Age of Horse	Euthanasia Method of Choice	Alternative Method of Euthanasia
Foals (less than 4 mos.)		
Adults		



“One of the most difficult decisions a person may make is when to end an animal’s life. Many of these decisions must be made in very stressful and less-than-ideal situations. We hope that this booklet can help make that decision the best one possible for both the animal and the owner. With a true appreciation of life comes the responsibility of ensuring an humane death.”

-Pam Hullinger, DVM and Carolyn Stull, Ph.D



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