

Form #4

OFFICE - WEST VIRGINIA
SECRETARY OF STATE

Walter Belmont
Authorized Signature

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Legislative Rule
West Virginia Department of Agriculture
Series 32
Equine Rescue Facilities

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OFFICE WEST VIRGINIA
SECRETARY OF STATE

§ 61-32 -1. General.

1.1. Scope. -- This legislative rule defines terms, establishes the standards for maintenance of the premises of an Equine Rescue facility, the standards of care and health of the horses kept at the facility, as well as standards for inspection of those facilities. This legislative rule also establishes standards for closure and seizure of horses kept at an Equine Rescue facility.

1.2. Authority. -- West Virginia Code §19-33-1.

1.3. Filing Date. --

1.4. Effective Date. --

§61-32-2. Definitions.

2.1. "APHIS" means Animal and Plant Health Inspection Service.

2.2. "Application" means a request form submitted to the Commissioner to open an Equine Rescue Facility.

2.3. "Body condition score" means an industry accepted evaluation of an animal's body fat and muscle mass as related to skeletal dimension and stage of production.

2.4. "Coggins" means the common name for the agar gel immunodiffusion test for diagnosis of Equine Infectious Anemia (EIA).

2.5. "Commissioner" means the Commissioner of the West Virginia Department of Agriculture.

2.6. "Designated isolation area" means an area with no direct equine contact.

2.7. "Emergency situation" means a serious unexpected and often dangerous situation requiring immediate action.

2.8. "Equine" means any animal in the Family Equidae, including horses, asses, mules, ponies, and zebras.

2.9. "Equine infectious anemia" means an infectious disease of equines caused by a lentivirus, equine infectious anemia virus (EIAV).

2.10. "Equine rescue facility" means a facility that is listed as a nonprofit organization having a legitimate and current status under Title 26 U.S.C. 501(c)(3) that fosters care to unwanted equines due to age, health or other circumstances that deem the equines homeless; provided that a nonprofit organization that supervises foster care of unwanted equines but does not have a physical location where animals are housed is not an equine rescue facility for purpose of West Virginia Code §19-33-1

2.11. "Equine rescue facility license" means a license granted by the Commissioner to an applicant to open an equine rescue facility.

2.12. "Henneke body score" means a numerical scale used to evaluate the amount of fat on a horse's body, based on both visual appraisal and palpable fat cover of the six major points of the horse that are most responsive to changes in body fat. It is the scientific method of evaluating a horse's body condition regardless of breed, body type, sex or age.

2.13. "Humane officer" means a person, designated by the sheriff in each county, to prevent the perpetration or continuance of any act of cruelty upon any animal and to investigate and, upon probable cause, to arrest and assist in the prosecution of any person engaging in cruel and forbidden practices.

2.14. "Inspection" means an examination of an equine rescue facility to see that the standards of care are met for the horses, facility, and premises, conducted by a humane officer or county sheriff, in the county that the facility is located.

2.15. "Licensed accredited veterinarian" means any veterinarian licensed to practice veterinary medicine in the state of West Virginia and accredited by the State Veterinarian, APHIS and approved by the Deputy Administrator of USDA, APHIS, VS (United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Service) in accordance with provisions of Part 161, Title 9, Code of Federal Regulations (CFR) and pre-approved to perform certain functions of Federal and cooperative State-Federal programs.

2.16. "Maintenance" means the preservation and upkeep of the premises of an equine rescue facility, as well as the space in which horses are kept.

2.17. "Quarantine area" means a confined area, a minimum of 200 yards from any equine and under the direct supervision and control of a State or Federal animal health official, who shall establish procedures for the accounting of all animals entering or leaving the area.

2.18. "Revocation" means the withdrawal of a license to operate an equine rescue facility by the Commissioner.

2.19. "Seizure" means to take possession of the horses that are kept at an equine rescue facility.

2.20. "Shelter" means any cover man made or natural that gives livestock or poultry protection from the elements.

2.21. "USDA" means the United States Department of Agriculture.

2.22. "West Virginia Equine Rescue Standards" means the American Association of Equine Practitioners Care Guidelines for Equine Rescue and Retirement Facilities.

§61-32-3. Issuance of license.

3.1. A person requesting a license to operate an Equine Rescue Facility shall submit an application to the Commissioner of the West Virginia Department of Agriculture.

3.2. The application shall include:

3.2.a. The name of the person responsible for the facility;

3.2.b. The address of the facility;

3.2.c. A detailed drawing and measurements of the facility including;

3.2.c.1. A quarantined area; and

3.2.c.2. An isolation area;

3.2.d. The phone number of the person responsible for the facility; and

3.2.e. All veterinary records pertaining to each equine at the facility including;

3.2.e.1. The name of the veterinarian; and

3.2.e.2. The phone number of the veterinarian.

§61-32-4. Annual fee.

4.1. The annual fee for an equine rescue facility license is \$100.

4.2. The Commissioner shall remit this fee to the humane officer in the county where the facility is located to offset the expense of inspecting that facility.

§61-32-5. Standards of care for equine.

5.1. Equine standards of care are contained in the West Virginia Department of Agriculture's rule, Livestock Care Standards 61CSR31.

§61-32-6. Standards of care for equine rescue facility.

6.1. Standards of care for an equine rescue facility are contained in the West Virginia Department of Agriculture's rule, Livestock Care Standards 61CSR31.

§61-32-7. Standards for inspection.

7.1. All equine rescue facilities shall be inspected two (2) times per year.

7.2. If the standards of care that are listed in §61-32-5 and §61-32-6, and the standards in the AAEP Care Guidelines for Equine Rescue and Retirement Facilities are not met the Commissioner shall revoke the facility's license.

7.3. The facility shall have up to sixty (60) days after the revocation to correct its violations.

7.4. In the case of an emergency situation, the Commissioner may allow a facility which is not meeting the standards to remain open until it can resolve the situation.

§61-32-8. Standards for closure.

8.1. The Commissioner shall close any facility that fails to comply with correction of its violations.

8.2. If ownership of equine seized from the facility is granted to the state, the West Virginia Department of Agriculture shall be immediately obligated to sell equine at public auction to the highest bidder.

8.2.a. All equine taken to public auction shall require a negative Coggins test.

American Association of Equine Practitioners

Care Guidelines

FOR EQUINE RESCUE AND RETIREMENT FACILITIES



AAEP CARE GUIDELINES FOR EQUINE RESCUE AND RETIREMENT FACILITIES

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AAEP CARE GUIDELINES FOR EQUINE RESCUE AND RETIREMENT FACILITIES

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INTRODUCTION

Rescue and retirement facilities play a vital role in providing lifelong care and/or finding new owners for horses, or other equidae, that may be considered “unwanted” or have been subjected to neglect or abuse. NOTE: For the purposes of this document, the term “horse” is used to refer to all equidae. The AAEP recognizes and commends the important services these facilities provide to the horses and individuals who benefit from their work.

Recognizing the importance of equine rescue and retirement facilities, the AAEP has developed care guidelines in order to provide guidance about the care of a horse throughout its life. While principles of basic horse care and management apply to all horses regardless of their situation, those horses entering rescue or retirement facilities may arrive with unique health challenges. For these reasons, employees and volunteers should understand and appreciate basic horse care as well as be able to recog-

nize health conditions that may require medical attention from a veterinarian.

Equine veterinarians play an important role in the care of the animals at rescue and retirement facilities. They can offer valuable advice on many aspects of equine management, from disease prevention to basic nutrition, from emergency medical attention to routine health maintenance procedures. It is important that facilities establish a good relationship with an equine veterinarian for the benefit of all, and especially for the benefit of the horses.

The guidelines presented in this manual are for informational use only and should not be considered legally binding. Because appropriate horse care practices may vary due to climate, region, use and many other factors, the guidelines are intentionally broad. For answers to specific questions, owners, employees, and volunteers at rescue and retirement facilities are encouraged to consult their veterinarians.

I. BASIC HEALTH MANAGEMENT

Caring for New Arrivals

Every horse entering a rescue/retirement facility should receive a complete physical examination upon its arrival. Permanent identification (e.g., microchipping, lip tattoo, freeze branding) of each horse is an economical, humane and unalterable tracking mechanism for a horse, and is included as part of the admissions procedures for many facilities. A health record must be established for each horse, clearly identifying the horse by name and/or number, age, gender and description. Medication and treatments should be given only under the direction of a veterinarian and recorded in the horse's health record.

Horses may be susceptible to transportation stress and disease following transport to a rescue/retirement facility. On arrival, new horses should be isolated from resident horses to prevent the possible spread of disease, preferably for 2-3 weeks. Handlers should carefully monitor recently transported horses for several days after long-distance transport. The temperature of these horses should be recorded daily for several days, and if not normal, the temperature should be recorded at least twice daily, i.e. morning and evening. If a horse's temperature exceeds the normal range, a veterinarian should be consulted.

Monitoring Your Horses

Frequent observation of the horses in a rescue/retirement facility is paramount to ensure that they remain healthy. Horses should be observed routinely, at least once every 24 hours, paying particular attention during high-risk periods (e.g., inclement weather, foaling, introduction of new animals). The table below provides vital signs for an adult 1,200-pound (545 kg) horse at rest at 60°F. These criteria will vary according to age, physical fitness and environmental conditions. Younger horses tend to be at the higher end of the range.

**Vital Signs for a 1,200 Lb (545 Kg) Horse
at Rest at 60° F**

Vital Sign	Normal Range	Average
Rectal Temperature	99.5-101.5° F (37.5-38.5° C)	100° F (38.0° C)
Pulse	30-42 beats/ minute	36 beats/ minute
Respiration Rate	12-20 breaths/ minute	16 breaths/ minute

Preventive Health Care is a Necessity

Rescue/retirement facilities should consult with a veterinarian to develop a sound, integrated health care program appropriate to the facility and environment. Previous health records, if available, can assist a veterinarian in making recommendations that are most appropriate for the horse's needs, and should be requested.

Parasite Control

A parasite control program, one of the most important management matters to be considered, must be established in consultation with a veterinarian.¹ An effective program will include the administration of chemical deworming agents, as well as manure and pasture management. Indiscriminate use of deworming agents is not advisable, as it adds to the growing problem of parasite resistance to such agents. With veterinary guidance, utilizing such tools as fecal egg counts to optimize use of dewormers, an effective and economical parasite control program, can be designed while minimizing parasite resistance.

Vaccination

Administering the appropriate vaccinations is another tool which assists in controlling common infectious diseases of the horse. The specific immunizations needed by a particular group of horses depends upon several factors,

including environment, age, breed, sex, use, exposure risk, geographic location and general management.² Consult your veterinarian to determine the most effective vaccination program for your facility's horses.

Dental Care

A veterinarian should examine horses' teeth at least annually. Uneven wear and other dental abnormalities should not be allowed to interfere with normal eating habits. Dental care will depend on age, nutrition and environment. Dental care must be performed by a veterinarian or under veterinary supervision.

Be Prepared for an Emergency

Caregivers at rescue/retirement facilities must know how to recognize serious problems, respond promptly, and take appropriate action while awaiting the arrival of the veterinarian.³ It is advisable to keep a list of available veterinarians in case of an emergency. Rescues should also maintain list of contacts and protocols for fire, theft and natural disaster.

All rescue/retirement facilities should prepare a first aid kit and store it in a clean, dry and readily accessible place. While a first aid kit can be simple or elaborate, the following items are highly recommended:

- Cotton roll
- Contact bandage
- Gauze or cotton secondary dressing
- Gauze pads, assorted sizes*
- Gauze wrap
- Adhesive wrap and adhesive tape
- Leg wraps
- Bandage scissors
- Hemostats
- Steel cup or container
- Rectal thermometer

- Surgical scrub and antiseptic solution
- Latex gloves
- Flashlight and spare batteries
- Permanent marker pen
- Shoe pullers (to pull loose shoes, or imbedded nails on the advice of the veterinarian)

* Include sterile pads

Special Considerations

The AAEP encourages the castration of all stallions entering a rescue/retirement facility. Castration and other surgical procedures must be conducted by licensed veterinarians using accepted surgical techniques in accordance with state and federal veterinary acts and regulations.

Distressed horses should be dealt with humanely, effectively and promptly to prevent suffering. Sick or injured horses must receive veterinary attention as quickly as possible. Horses unable to rise need immediate veterinary attention. Veterinary consultation must be sought prior to any attempt to move a downed horse.

Evidence of any reportable disease, such as West Nile virus, Equine Herpes virus, Vesicular Stomatitis, Equine Piroplasmiasis, Equine Infectious Anemia or Rabies must immediately be brought to the attention of a veterinarian. Any disease that appears to spread from a horse to a human should be reported.

Signs of disease that should be discussed with your veterinarian include but are not limited to:

- Severe, unexplained, persistent or recurrent fevers
- Unexplained weight loss or progressive weakness
- Thick vaginal discharge

¹ AAEP/Bayer Corporation Animal Health Client Education Brochure. "Internal Parasites: Strategies for Effective Parasite Control," 2010.

² "Principles of Vaccination." AAEP Guidelines. Updated 2012. http://www.aaep.org/vaccination_guidelines.htm

³ AAEP/Bayer Corporation Animal Health Client Education Brochure. "Emergency Care: Guidelines to Follow During Equine Emergencies," 2011.

- Abortion
- Neurological signs such as incoordination, erratic behavior, abnormal postures or hypersensitivity
- Inability to rise
- Difficulty breathing, spasmodic coughing or frothy nasal discharge
- Soft swelling of the face or neck
- Lameness
- Wounds
- Eye problems
- Colic
- Blisters or open sores on the lips, mouth, genitalia or above the hooves.

Separate, isolated quarantine housing should be provided for any sick horse(s) to prevent spread to the rest of the herd. As any-

thing that touches an infected horse, its manure or bodily secretions can carry and spread infectious disease, biosecurity procedures must be followed as described in the AAEP Biosecurity Guidelines.⁴

Control of flying insects, rodents and birds within any equine facility must be a priority. Flying insects such as biting flies and mosquitoes not only create a nuisance and interfere with grazing activity, but can transmit or spread infectious diseases to horses and humans. A sanitation program must also be developed to effectively remove manure and waste in order to prevent accumulation of pests and environmental contamination of water. Dead horses must immediately be removed and disposed of in an appropriate manner, as required by municipal, state or federal regulations.

⁴ Biosecurity Guidelines. AAEP website. http://www.aaep.org/pdfs/control_guidelines/Biosecurity_instructions%201.pdf 2006.

II. NUTRITION

Formulating a diet for a horse should take into account the horse's state of health, geographic location, medical history, exercise/use, and individual metabolism. Special recommendations for feeding a starved horse are found at the end of this chapter. A veterinarian, perhaps assisted by an equine nutritionist, should be consulted to ensure current feeding programs are meeting each animal's needs.

General Feed Requirements

A horse's daily diet should be adequate to maintain health and normal body functions, and should be fed on a regular daily schedule. In its natural state, the horse eats a variety of forages (mainly grasses) to meet its nutritional needs. Due to the small size of its stomach, the horse will normally consume its daily intake over 16 to 20 hours. When confined, horses should be fed at least twice daily; however, there appears to be no nutritional benefit when horses are fed more than three times daily.

Horses should be fed a forage-based diet (hay or pasture). For most mature horses that are not competing or exercising, a forage-based diet is usually adequate to meet caloric needs. Grain supplementation should be rarely needed. Fresh forage (pasture) can seasonally provide most of the horse's needs, but should be supplemented with dry forage (hay) to provide adequate dietary fiber.

Pasture provides additional health benefits to horses, allowing them to move and exercise as they normally do, and regular pasture turnout should be part of a horse's daily routine, unless otherwise directed by a veterinarian. In certain areas, minerals and trace minerals may be lacking (e.g., selenium in parts of the northern United States), and supplementation may be required, ideally as directed by a veterinarian.

There is rarely a need for horses in rescue and retirement facilities to be fed high-grain (high-energy) diets. If such diets are selected,

attention should be paid to avoid nutrition-related health problems, such as grain overload, laminitis, founder or obesity. To avoid problems such as colic, abrupt changes in diet should be avoided. To avoid major health problems, any changes in the type and quantity of feed should be introduced gradually over a period of several days. Feeds used in the horse's diet should be fresh, free of spoilage, toxic insects or contaminants, dust and molds. Horses should also have access to free-choice salt and appropriate minerals, as necessary.

When horses are fed in groups, some horses may "bully" others, and prevent other horses from eating. This may lead to some horses' overeating and becoming obese, while others may become thin and malnourished, even if adequate feed is being supplied. To prevent such problems, adequate manger space or separate feeding areas should be available to minimize competition for feed. All horses should have simultaneous access to feeders so that all can eat at one time. Horses that "bully" others should be separated from less dominant horses to ensure that the less dominant horses receive adequate feed.

All feeds and supplements should be properly labeled and stored appropriately to avoid misuse. Owners and operators of retirement facilities would be well-advised to consult with their veterinarians prior to implementing nutritional supplements; such supplements may significantly increase the cost of care for the horses, but may not provide significant nutritional benefit. Feeds designed for other species, particularly medicated feeds and those containing urea, are unsuitable for horses. Feed troughs and buckets should be cleaned regularly.

Supplementary Feeds

Cereal grains such as oats, corn and barley should be rarely needed for most horses at rescue and retirement facilities. Grains should

only be added to the horse's diet to meet extra energy needs, such as those associated with exercise, late pregnancy, lactation, growth, and occasionally to help maintain proper weight, or during convalescence or recovery from surgery. Cereal grains should always be measured by weight rather than volume when feeding (e.g., 1 pound, rather than 1 "coffee can"), as there are marked differences in densities, not only among types of grains, but also within different consignments of the same grain.

Oats tend to be safer to feed than other grains due to high fiber content. Most of the digestibility studies that have been conducted comparing crimped and whole oats indicate that there is, at most, a 6% increase in the digestibility of crimped oats, when compared to whole oats. Thus, in most cases, there is no real benefit to using crimped oats over whole oats. Prolonged storage of crimped oats reduces their nutritional value and should be avoided.

Corn and barley have a higher energy value than oats, and provide more calories on a per weight basis than do oats, and thus may be easier to overfeed. Barley's energy value lies between that of corn and oats. Its hard husk needs to be crushed or cracked to aid digestion.

Young and growing horses have increased protein requirements compared to older horses. There are many ways to increase protein in a horse's ration, including feeding alfalfa hay. Meals such as soybean meal are often included in rations for young and growing horses also increase the protein content of the ration. They should be fed in small amounts and introduced gradually. Linseed meal is not an appropriate protein supplement for growing horses because it is low in the amino acid lysine, which is essential for normal development.

Many brands of blended horse feeds are on the market. Following the manufacturer's feeding guidelines provides a simple method of dietary supplementation recommendations (this information should be printed on the label, along with an analysis of ingredients). In

operations where small numbers of horses have similar supplementary feeding needs, premixed balanced feeds can save the facility work and ensure continuity of diet. When feeding commercially blended feeds, care should be taken to ensure the horse has access to its minimum daily forage (fiber) requirement of 0.5 to 1 pound dry matter/100 pounds bodyweight.

When horses are working and sweating, salt (sodium chloride) and possibly other electrolytes may need to be supplemented. Hand-fed horses should have salt supplemented daily, or have free choice access to a trace mineral/salt block. Advice on mineral deficiencies peculiar to any grazing area should be sought from a veterinarian or local extension nutritionist, and addressed accordingly.

Calculating Horse Bodyweight

Before accurate feed calculations can be made, the bodyweight of the horse should be estimated. Bodyweight assessment is also required when medicines, including dewormers, are administered.

The most accurate method of determining bodyweight is the use of electronic scales. To get the most accurate weight for a horse when using scales, weigh the animal just before feeding and watering. This will help avoid variations caused by different gut-fill levels, and will allow subsequent weight measurements to be more standardized, and thus more meaningful.

Weight tapes also can be useful in estimating a horse's body weight. While they may not give an accurate absolute measurement, they can be very effectively used to see if a horse is gaining or losing weight. For those without scales, the Henneke Body Scoring System can help the average horseman, with practice, to establish and track changes in a horse's body condition. The "ideal" body condition is said to be when the horse's ribs can be easily felt, but not seen. See the appendix for this scoring system.

Determining Feed Requirements for Each Horse

The amount of feed required by a horse is made up of two factors:

- Maintenance needs, that is, the amount of feed that is required to keep the horse in good health.
- Activity needs (which include rate of work, growth, lactation and pregnancy)

Both requirements must be satisfied in order to maintain ideal body condition and weight. Every horse should be offered daily a sufficient and appropriate ration of feed to maintain its body condition at between 4 and 6 points on the Henneke condition score chart.

Maintenance Needs

Maintenance feed is the amount required to maintain the normal horse's body condition at rest. "At rest" means that physical activity is no more than is expected of a healthy horse grazing freely in a paddock. Maintenance requirements are being met when an idle, mature horse maintains its normal weight. Examples of horses with no more than maintenance nutritional requirements include horses being rested from their usual work, most horses at rescue/retirement facilities, learners' horses that rarely get into a canter, and pleasure horses ridden carefully at a relaxing pace for no more than one hour per day.

The average horse consumes approximately 1.5 - 2% of its bodyweight daily, as dry matter of a palatable feed, to meet daily maintenance requirements. Regular condition scoring or weighing will help establish any individual variation required from these general bodyweight guidelines.

Individual horses may be subjected to circumstances that affect their dietary maintenance requirements. For example, periods of extremely cold weather may increase maintenance needs by up to 30%. The horses'

temperaments should also be taken into account; nervous or highly-strung horses may require more energy than do quiet horses of the same bodyweight. The following table will help calculate the necessary daily ration based on level of activity.

**Expected Total Ration
Consumption By Horses**

CLASS	TOTAL CONSUMPTION % BODYWEIGHT
Maintenance	1.5 – 2.0
Late Gestation	1.5 – 2.0
Lactation	2.0 – 3.0
Working	1.5 – 3.0
Weanling	2.0 – 3.0
Yearling	2.0 – 3.0
Two-year-old	1.8 – 2.5

Adapted from Nutrient Requirements of Horses: Sixth Revised Edition (NRC), Committee on Nutrient Requirements of Horses, National Research Council, Washington, DC: 2007

Nutrition of the Pregnant Mare

It is not common for rescue and retirement facilities to receive pregnant mares. However, if such mares are received, the non-working, non-lactating pregnant mare does not require an increase in feed above maintenance during the first eight months of pregnancy. During the last three months of pregnancy, the extra energy requirement, because of fetal growth and an increase in the mare's weight, is about 0.5% of bodyweight, as dry matter, so the total dry matter feed requirement becomes approximately 2.2% of bodyweight.

It has been estimated that a normal mare will produce milk equivalent to 3% of bodyweight in early lactation and 2% in late lactation. The milk production of pony mares is estimated at 4% in early lactation and 3% in late lactation. For example, this means an 1,100-pound mare (500kg) should produce 4

gallons (15 liters) of milk per day in the first three months and 2 ½ gallons (10 liters) per day in the last three months prior to weaning. Producing milk requires extra calories, and as a result, in dry matter intake, the lactating mare's nutritional needs are between 1 and 1.5% bodyweight above that which is required for maintenance.

Pregnant mares may also have additional health needs, such as vaccination against equine herpesvirus-1. Rescue and retirement facilities are encouraged to contact their veterinarians for advice on caring for pregnant, postpartum, and lactating mares.

Nutrition of Growing Horses

Growing horses need feeding above that which would be required to simply maintain their body weight because they need additional "building blocks" for growth. The feed required will vary with factors such as the expected mature weight, growth rate, age, and exercise. Young horses have a higher protein requirement than do mature horses. Their feed should contain 13 to 15% protein as weanlings. Yearlings may require 12 – 13% dietary protein, and two-year-olds require about 11% dietary protein. Young horses need approximately 3% of their bodyweight as dry matter intake, depending on dietary ingredients.

Special Needs of Aged, Sick and Injured Horses

When horses are underweight, or are losing weight, despite being fed a diet that provides additional calories beyond those that should be required for maintenance, a veterinarian's advice should be obtained and followed. A veterinarian, perhaps working together with an equine nutritionist or county extension agent, can examine the horse to see if there are any medical problems that may need attention, as well as address special feed requirements that may be needed for sick and injured horses.

Horses with abnormalities of the mouth may find normal grazing and chewing difficult.

Because of problems such as tooth loss, they may not be able to process normal forage and may require supplemental feeds to maintain bodyweight, such as complete pelleted rations. This problem is more prevalent in older horses. Horses with abnormalities of the mouth should be examined by a veterinarian and have appropriate corrective action taken. (Refer to Chapter IV for special considerations for the geriatric horse.)

Overfeeding, Obesity and Laminitis (Founder)

Excessive energy intake, both acute and chronic, is one of the causes of a common and crippling disease: laminitis. Laminitis affects the feet of horses and disrupts the sensitive and insensitive laminae, which secure the coffin bone to the hoof wall. "Founder" is a commonly used name for this condition. It is important to note, however, that there are many causal agents of laminitis, including stress, as well as various disease conditions.

In order to avoid laminitis, horses should not be permitted to become overly fat. Some equines, particularly ponies and donkeys, are able to utilize energy in feeds very efficiently; other obese horses may be affected with a condition known as insulin resistance/equine metabolic syndrome.⁵ Horses and ponies that tend towards obesity ("easy keepers") are considered to be more susceptible to laminitis, and should have restricted access to grains (if grains are fed at all), as well as spring and autumn pasture, which is low in fiber, and high in sugars. Low-energy forages such as grass-type hays should be fed in preference to higher energy legume hays (e.g., alfalfa).

Controlling the weight of horses using starvation diets is unacceptable. Such horses should first be examined by a veterinarian to rule out disease conditions that might affect weight, and then supplied with a balanced, reduced calorie diet, as well as free access to water.

⁵ Frank, N. *Insulin Resistance in Horses. Proceedings American Association of Equine Practitioners, 2006; 52: 51 – 54.*

Water Requirements

Every horse should have access to a sufficient amount of fresh, clean water to meet its individual maintenance and activity needs. A horse's daily water requirements may range from 5 to 20 gallons (20 to 70 liters), depending on air temperature, humidity, body weight, level of activity and health and physiological status (e.g., pregnant, lactating or growing).

As a general guide, horses need $\frac{1}{2}$ to 1 gallon (2 to 4 liters) of water per 2 pounds of dry matter intake. This requirement increases with increasing air temperature; for example, an increase in ambient temperature from 55°F to 77°F (13°C to 25°C) increases water required by 15 to 20%.

As a practical matter, a horse should always have unlimited access to fresh water. Water troughs and containers should be regularly cleaned to prevent algae buildup. They should be located where they are protected from electrical problems, fouling, and freezing. In cold climates, horses preferentially consume warm water; if warmer water cannot be provided in cold climates, watering systems should be examined regularly to ensure that the water is not frozen. Automatic watering systems should be checked daily to ensure they are dispensing water properly.

In some disease conditions, such as severe diarrhea, rapid loss of water and essential body salts (electrolytes) can result. Fluid replacement necessary to overcome fluid loss should be administered by a veterinarian.

Refeeding the Starved Horse

Unfortunately, some horses that arrive at rescue/retirement facilities have been subjected to long-term neglect and may suffer from starvation. Rehabilitating a starved horse presents many challenges for caregivers. In both horses and humans, the abrupt refeeding of a starved horse can cause dysfunction of the body's metabolic system, which can lead to failure of the heart and lungs and ultimately death.⁶ A veterinarian is vital to the recovery of these animals and should be consulted as soon as a

starved horse arrives at the facility. Even under the best of care, horses subjected to prolonged malnutrition may die, even after having been placed with a responsible caregiver and having been provided an appropriate diet. Owners and operators of rescue and retirement facilities should realize that the financial costs of stabilizing malnourished horses may significantly exceed their market price, and that responsible management of chronically starved horses should include the option of euthanasia.⁷

What Happens during Starvation

During starvation, the horse initially uses any fat and carbohydrate stores in his body to supply energy for metabolism and normal body functions. This is the normal process for any healthy horse: fat and carbohydrates are used for energy, exercise, brain function, circulation, etc., and are then replaced with nutrients from food. The cycle is constant and never-ending, even during sleep.

In a starved animal, once this source of fat and carbohydrate is gone, energy is derived from the breakdown of protein. While protein is a component of every tissue, excesses of protein are not stored in the body, as is the case for fat and carbohydrates. Consequently, the starved body uses protein not only from muscles, but also from vital tissues such as the heart and even gastrointestinal tissues – tissues that are necessary for life – for energy. As time goes by and starvation continues, the horse's survival becomes precarious. When a horse loses more than 50% of its body weight, the prognosis for survival is extremely poor.

The Refeeding Problem

Refeeding starved animals, including humans, is not an easy process. In humans suf-

⁶ *The Horse Report*, Volume 21, Number 3, July 2003, the newsletter of the Center for Equine Health. Copyright 2003, University of California Regents.

⁷ *Chronically starved horses: predicting survival, economic, and ethical considerations*. Whiting TL, Salmon RH, Wruck GC. *Can Vet J*. 2005; 46(4): 320-4.

fering from starvation caused by illnesses such as anorexia, cancer or gastrointestinal obstruction, patients can develop "refeeding" syndrome when they are given concentrated calories, and this in turn can lead to heart, respiratory and kidney failure, usually three to five days after the initial meal. This same syndrome has been reported in the literature for horses.

The Best Diet

A team of California researchers led by Drs. Christine Witham and Carolyn Stull of the University of California-Davis Veterinary Medicine Extension studied the rehabilitation of chronically starved horses and developed guidelines extremely beneficial for use in rescue/retirement facilities. Drs. Witham, Stull and their team showed through their research that the best approach for initial refeeding of the starved horse consists of frequent small amounts of high-quality alfalfa hay. This amount should be increased slowly at each meal and the number of feedings decreased gradually over ten days. After ten days to two weeks, horses can be fed as much as they will eat. The horse will show signs of increased energy after about two weeks. Ears, eyes and head movement will be the first noticeable movements. Some weight gain can be achieved in one month, but three to five months usually are needed to rehabilitate to a normal weight. Veterinary care and nutritional advice should be sought as complications arise. However, even under ideal refeeding circumstances, malnourished horses may not

survive; 3 of the 22 horses reported on in Drs. Witham and Stull's 1998 study died;⁷ in another study, in Canada, 9 of 45 starved horses did not survive.⁸

Refeeding Recommendations⁹

Days 1-3

Feed one pound (approximately 1/6 flake) of leafy alfalfa every four hours (total of six pounds per day in six feedings). Contact a veterinarian to evaluate the medical status of the horse.

Days 4-10

Slowly increase the amount of alfalfa and decrease the number of feedings so that by day six, you are feeding just over four pounds of hay every eight hours (total of 13 pounds per day in three feedings.)

Day 10 – Several Months

Feed as much alfalfa as the horse will eat and decrease feeding to twice a day. Provide access to a salt block. Do not feed grain or supplemental feed until the horse is well along in its recovery; early feeding of grain and supplemental feed complicates the return of normal metabolic function and can result in death.

- Provide clean, fresh water at all times.
- Deworming and correction of dental problems are very beneficial to the horse's recovery.

⁷ Witham, CL, Stull, CL. *Metabolic Responses of Chronically Starved Horses to Refeeding with Three Isoenergetic Diets*. JAVMA1998, 212(5): 691-696.

⁸ *The Horse Report*, Volume 21, Number 3, July 2003, the newsletter of the Center for Equine Health. Copyright 2003, University of California Regents.

⁹ Reprinted by permission of the University of California, Davis, School of Veterinary Medicine, *The Horse Report*, The Newsletter of the Center for Equine Health, 2003: 21(3).

III. BASIC HOOF CARE

The age-old saying "no foot, no horse" applies to every discipline in the horse industry and is equally important to the horse that enters a retirement/rescue facility. The foot is a common source of lameness; therefore, good, quality hoof care is imperative to the well-being of a horse in these facilities. For the sake of the organization, discussion here applies specifically to horses in rescue/retirement facilities and should not be confused with any breed predilection or discipline.

Hoof Growth

As a general rule, adult horse hoof growth is approximately $\frac{3}{8}$ of an inch (9 millimeters) per month, while hoof growth in a foal is approximately $\frac{5}{8}$ of an inch (15 millimeters) per month. With that in mind, as a general guideline, an adult horse should be trimmed (or shod) in accordance with the needs of the horse. Foals should be trimmed every four weeks, or as needed.

Start with a Thorough Examination

Upon entering a facility, a complete physical examination should be performed on every horse. As part of the examination, the feet should be evaluated carefully to identify any hoof wall cracks, bruises, lacerations or any other pathology that need the attention of the farrier or veterinarian. Any history of disease should be addressed at this time to help facilitate proper shoeing for the horse.

Special Considerations

Horses entering retirement/rescue facilities come in all shapes and sizes and often require the involvement of the veterinarian and the farrier to address hoof concerns specific for individual horses. For example, retired racehorses are shod in aluminum shoes with toe grabs; American Saddlebred horses may have been shod in stacks of pads. For retired horses,

it may be best to remove these shoes, balance the foot according to conformation, and shoe him, or trim him and leave him barefoot, according to his individual needs.

Some other items to consider are:

1. *Hoof Wall Cracks/Quarter Cracks:* A farrier should evaluate and address the crack for infection, necrotic tissue and, most importantly, stability. Stability of a hoof wall crack is necessary for the crack to heal, and for normal hoof growth to resume.
2. *Navicular Disease:* If history exists or a diagnosis is made, veterinarian and farrier involvement is necessary to facilitate the comfort and shoeing needs of the horse.
3. *Laminitis:* Accurate diagnosis, which may require radiographs, is necessary to determine the shoeing needs of the horse. Proper shoeing, good management and nutrition all play a vital role in foot care relative to laminitis.
4. *Corrective Shoeing:* May sometimes be necessary depending upon injury and conformation. Consultation with a veterinarian, working in conjunction with a farrier, is recommended.
5. *Environment:* Hoof care can be affected by the environment in which the horse lives. Moisture can soften hooves, and can lead to thrush and other problems. Cold weather slows hoof growth. Shoeing and trimming considerations must be addressed for each horse as an individual, in light of his environmental circumstances; for example, recommendations may be different for a frozen pasture versus a rocky pasture.

6. *Management:* Basic horse husbandry considerations such as good nutrition, shelter and dry bedding are all important in maintaining good, healthy feet. Some people advocate the use of feed additives for healthy hoof growth; these should be considered on the advice of a veterinarian.

Rely on Qualified Caregivers

When a horse is to be shod, a qualified farrier who is working in conjunction with a veterinarian, both of whom understand the goals of the facility, should be consulted. This will aid in minimizing any potential hoof problems, as well as correct any previous hoof problems. Veterinarians and farriers may serve as good referrals for each other, or organizations such as the American Farrier's Association (<http://www.americanfarriers.org>) can provide referrals.

The horse should be shod or trimmed in accordance with its individual needs. These needs depend upon housing, musculoskeletal problems, conformation and environment. Hind foot shoes may not be recommended when horses are turned out in groups, so as to minimize injury to other individuals from kicking. However, there are some problems of the hind feet that require shoeing.

Due to space considerations, numerous other specific aspects of hoof care have not been mentioned here. However, under any circumstances, management plays a critical role in the success of the retirement/rescue facility and more importantly, in the health of the horse. Good management should incorporate both the veterinarian and the farrier when addressing hoof care for the horse.

IV. CARING FOR THE GERIATRIC HORSE

The proportion of the equine population living into their 20s and 30s and beyond is growing. Proper care is vital to maintain the active, healthy lifespan of geriatric horses. Rescue/retirement facilities must have knowledge of conditions common in geriatric horses, be able to identify early signs of disease, distress and injury, and work closely with veterinarians in order to provide for the special needs of these animals. Appendix 1 contains additional discussion on evaluation of the health status of geriatric horses.

It is imperative to recognize that caring for the geriatric equid is exacting and labor-intensive and may involve considerable expense. At times, difficult decisions concerning quality of life and euthanasia must be made (see "Euthanasia," Chapter VII).

Health and Disease in the Geriatric Horse

Older horses are more likely to experience colic, dental disease, parasitism, tumors, lameness and metabolic disease than younger horses. They tend to have lower body condition scores on the Henneke system than younger horses and may have greater difficulty recovering from injury, starvation or disease.

Dental problems, such as the wearing down of tooth grinding surfaces, may cause a decreased ability to crush whole grains and forage. This may predispose the geriatric horse to colic or choke (intestinal or esophageal or obstructions), or reduced intestinal absorption of nutrients. A thorough dental examination should be performed in the older horse regularly.

An increased prevalence of metabolic and endocrine disease in geriatrics, including Equine Cushing's Disease (ECD), place them at higher risk for chronic infections, eye problems and laminitis or founder.

Musculoskeletal problems are also common in the older horse and are many times an accu-

mulation of past injuries and wear and tear. Under direction of a veterinarian, management of arthritis through regular exercise, nutritional supplements and medications can significantly improve comfort for the geriatric horse. For example, we look at recommendations for older people: regular exercise and resistance training improve muscle tone and mobility. Conversely, confinement and lack of movement weaken muscles and bones. Even in the oldest group of horses, movement in a pasture is generally preferred to stall confinement.

Providing Proper Shelter

Standards described in Chapter VI, "Shelter, Stalls and Horse Facilities," should be applied to geriatric horses as necessary to accommodate older horses' decreased ability to regulate body temperature and increased susceptibility to extremes of heat and cold.

It is essential to protect older horses from heat and/or humidity by providing shade and ventilation. Pastures and paddocks should include natural shade or properly constructed well-ventilated shelters. Stables may require fans. Body clipping may be necessary to promote dissipation of heat from the body.

Likewise, protection of older horses from extremes of cold through the appropriate combination of shelter, wind breaks and blanketing is essential. Pastures and paddocks should include natural or constructed shelter to provide a dry environment and protection from wind. Soft footing and deep bedding (but not too deep, as it's harder to move around in) should be considered for older horses with arthritic conditions and other lameness.

A pasture environment is an excellent option for older horses, as turnout promotes beneficial activity. Consistent light exercise regimens are recommended and may improve range of motion and muscle strength. Pasture turnout is preferred over stall rest, because stall rest

generally results in increased stiffness and pain. Stall rest should be used only during periods of acute pain or joint instability, as directed by a veterinarian. Body weight should be reduced to normal or slightly lighter levels to minimize mechanical stress on the limbs.

Feed and Water

Standards described in Chapter II, "Nutrition," should be adapted to the special needs of geriatric horses. The body condition and/or actual body weight of older horses should be monitored carefully, because loss of condition is the most common problem in older horses. Loss of body condition, which is harder to regain in older horses than in younger horses, can indicate abnormal and often treatable conditions such as parasitism, dental disease or other underlying illnesses. Thus, integrated health care for the geriatric horse includes analysis of nutrition.

Current recommendations from the National Research Council's Nutrient Requirements of Horses for mature adult horses (updated last in 2007) are influenced by several circumstances of the aging horse, including slower metabolism, decreased digestive efficiency and decreased level of energy expenditure. Nutrient requirements of geriatric horses more closely approximate those of weanlings in terms of protein, calcium and phosphorous.

Protein requirements are higher in older horses than in younger adult horses, as the ability to digest crude protein is less in geriatric horses. Subsequently, it is suggested that geriatric horses are fed diets containing 14% to 16% crude protein. Loss of muscle mass is a common characteristic of geriatric horses. Although this has been attributed to decreased levels of activity, nutrition has also been implicated. Leucine, which may stimulate protein synthesis and is relatively high in alfalfa hay, may be useful in preventing loss of muscle mass in geriatric horses.

Fat is an excellent source of calories for older horses and is well utilized with almost no increase of digestive upset compared to energy-

dense rations containing primarily cereal grains. Commercial grain rations with fat added are available (5 to 8% crude fat content). Another way to increase fat is to add vegetable oil (up to 2 cups per day) or rice bran. If protein is insufficient in the diet, soybean meal is an excellent, high-quality protein source for older horses.

While calcium absorption remains consistent with age, phosphorous absorption may be impaired in older horses, such that phosphorous requirements are relatively higher. In an otherwise healthy but underweight geriatric horse, the ratio of calcium to phosphorous should remain at approximately 1.5:1. The ration typically should be between 0.4 - 0.65% phosphorus and not more than 1% calcium on a dry matter basis.

Commercial rations designed for geriatric horses are available, and can provide a highly digestible fiber and higher fat content to meet their increased energy needs. An extruded or pelleted feed is more likely than sweet feed or grain to improve body condition, weight gain and blood protein levels. Due to a natural reduction in saliva, these diets may need to be pre-soaked to prevent esophageal obstruction or choke. Fat, rice bran or soybean meal can be added to these diets to further improve fat and protein content. Attention to a dust-free diet can be helpful in managing chronic respiratory conditions in older animals.

Older horses should receive high-quality roughage because of their decreased ability to digest fiber and to chew forage properly. Sweet, young grass is ideal, supplemented with hay for additional fiber. However, access to carbohydrate rich grass may need to be monitored closely in those individuals with a predisposition to founder, as can occur with Cushing's disease or other metabolic conditions.

Hays should be less mature and free of coarse stems, such as mixed hay with 60% legume content. A 100% legume hay, such as straight alfalfa, is not ideal because the protein content may be too high and the phosphorous

content is very low, although phosphorous could be supplemented. If chewing is impaired, chopped hay, hay cubes or roughage-containing pellets are alternatives. Soaking hay cubes and pellets in water will make them easier to chew, while decreasing the risk of choke (obstruction of the esophagus with impacted feed). Another roughage alternative for older horses is beet pulp, because of its digestibility and calcium content. It also can be soaked to make chewing easier.

Feed supplements, such as glucosamine and chondroitin sulfate, are sometimes utilized for older horses with arthritic conditions, but lack scientific support. Electrolytes may be appropriate in the performing geriatric horse, as they sweat more at lesser intensity exercise. Probiotic products may also be advocated to help digestion, however, scientific support for the effectiveness of these products is also lacking. If expense of care is a concern, these sorts of supplemental products can usually be eliminated.

Water intake should be monitored in geriatric horses. Increased water intake is a sign of some of the more common medical conditions of geriatric horses, along with increased urine production. Older horses may be less inclined

to drink excessively cold water; in cold weather, warming the water has been shown to increase water consumption. Feeding water-soaked feeds (at least 2 gallons of water per feeding) will also help increase fluid intake. Addition of 1 to 2 ounces of salt to the feed may also encourage increased water intake but should be done only if the horse has unlimited access to water.

Special attention should be given to older horses pastured with other horses to avoid problems arising from age-associated decreasing aggressiveness. Access to feed, water and shelter should be ensured. Ideally, older horses should be pastured with their peers rather than with younger, more aggressive horses.

For Additional Information on Feeding Geriatric Horses, see:

Pugh, D.G. Feeding the Geriatric Horse. AAEP Proceedings 2002; 48, 21-23. http://www.aaep.org/health_articles_view.php?id=224

"The Aging Horse." Horse Report, 2006, 23(3), 2006. <http://www.vetmed.ucdavis.edu/ceh>

V. SHELTERS, STALLS AND HORSE FACILITIES

Many different types of housing and shelters are used at retirement/rescue facilities; therefore, multiple factors should be taken into account when designing shelters, including individual and diverse climatic and geographic conditions. Local sources of information, such as veterinarians and extension agencies, can be extremely valuable in considering such factors.

Shelter

A shelter is a natural or man-made structure that provides relief to each individual animal from direct sunlight, wind, precipitation and other inclement weather. The design and use of shelters should promote the health, well-being and good performance of horses throughout all stages of their lives.

All constructed shelters should be structurally safe for horses and personnel. Shelters where horses are located should be constructed with no exposed surfaces or projections likely to cause injury. Shelter design should promote easy and safe handling of horses, as well as ease of cleaning and care. Horses should be provided with a clean, dry area on which to lie.

Ceilings and support beams in horse-housing facilities should be high enough to permit the horse to stand naturally with a full range of motion of the head and neck without touching the ceiling. Floors in horse stables should be

constructed and maintained to provide traction and drainage and prevent injury. Ventilation should be designed to provide adequate air circulation.

Electrical wiring and panels should not be accessible to horses and should be installed in accordance with applicable electrical codes. Lighting should be provided in a manner to permit effective observation of stabled horses. Alleyways and work areas should be uniformly illuminated. Natural lighting should be provided wherever possible.

Manure and soiled bedding should be handled and stored in a manner that has as little negative impact on the surrounding area and the environment as is reasonably possible.

Rescue/retirement facilities should have a designated area for quarantine or isolation purposes. This area should be separated from other holding areas.

Stalls

Stalls or portable corrals should be available to contain horses that may be sick or injured. The stalls should be of sufficient size for a horse to get up and down. Bedding should be provided and kept clean, with stalls being cleaned at least once every 24 hours. Good ventilation is always necessary, and it is important in the prevention of respiratory problems.

VI. PASTURES, PADDOCKS AND FENCING

Pastures are an important aspect of many rescue/retirement facilities. Pastures allow horses to have access to grass as needed, give them room for exercise, and allow them normal socialization. The size and number of pastures and/or paddocks at a facility should be appropriate for the number of horses intended to be kept. Important factors to consider are safety and injury prevention as well as sufficient room to allow plenty of exercise.

Stocking requirements of pastures will vary, depending on feed and quality of the pastures. Generally, one or two acres per horse are required. Horses have a natural herd instinct, and as such, will prefer to be with other horses. In addition, pasture containment with proper shelter will serve a facility better than stalls only.

Pastures and Range Management

Horses on pasture or range should have an adequate quantity and quality of feed and water. Properly maintained pastures may provide all or most of the nutrient requirements of grazing horses. Nutrient content of pastures should be closely monitored and supplemental feed provided when necessary. Salt and mineral supplements should be provided when necessary to supplement specific nutrient deficits in grasses and forage.

To prevent digestive and health problems, horses should be introduced to pasture gradually or cautiously, especially in heavy growing periods such as spring in some areas. Horses on pasture should be inspected regularly, paying close attention during high-risk periods (seasonal changes, introduction of new horses, foaling, etc.).

Application of fertilizers, pesticides, herbicides and manure to pastures should be planned and conducted to minimize risk to grazing horses and the environment. In addition, pastures and range land should be inspected regularly for poisonous plants.

Pasture and Paddock Fencing Safety

Pastures and paddocks should be properly fenced to safely confine horses. The suitability of type of fence varies according to the disposition of the horses, as well as stocking density and pasture/paddock size. Horses should be introduced to unfamiliar fenced areas during daylight hours and be monitored to reduce the risk of injury.

Fences and gates should be maintained in good repair to minimize the risk of horses gaining access to public roadways. Barbed wire and narrow gauge high tensile wire, because of their cutting properties, can cause severe injury to horses. These materials are not ideal, even though they are sometimes used for fencing extensive pasture areas. However, they should generally be avoided in closely confined paddocks or small pastures.

Pastures, paddocks and range should be free from equipment, machinery, debris and refuse that have the potential to cause serious injury.

Paddock and Small Pasture Management

Every property in which horses are kept should have a sufficient number of paddocks or pastures to permit separation of incompatible animals. The risk of injury increases when horses are overcrowded. Competition for food, water and space often leads to fighting and subsequent injury.

The number of horses and their grouping in each paddock or small pasture should be appropriate for compatibility and for the ground conditions, taking into account the climatic conditions at the time. For example, rocky areas and steep hills/stream banks/ditches should be avoided for geriatric and debilitated horses.

Paddocks and small pastures should be cleaned regularly. Horses will not eat pasture grass or forage that is contaminated with manure. Without regular cleaning the effective grazing area is decreased.

Effective parasite control is more difficult in paddock or small pasture environments. Pasture rotation, manure removal and internal parasite control with effective deworming programs are a part of an integrated program of management. Your local veterinarian can help in the development of a specific program to fit individual conditions.

VII. EUTHANASIA

The term euthanasia is derived from the Greek terms eu meaning good and thanatos meaning death. A good death would be one that occurs with minimal pain and at the appropriate time in the horse's life to prevent unnecessary pain and suffering.

Justification for euthanization of a horse for humane reasons should be based on both medical considerations as well as current and future quality of life issues for the horse. Although by no means a replacement for consultation with the veterinarian, Appendix 1 contains additional discussion on the decision-making process for euthanasia. The American Association of Equine Practitioners has developed the following Euthanasia Guidelines.

2011 AAEP EUTHANASIA GUIDELINES -
http://www.aaep.org/euthanasia_guidelines.htm

The AAEP recommends that the following guidelines be considered in evaluating the need for humane euthanasia of a horse. The attending veterinarian is often able to assist in making this determination, especially regarding the degree to which the horse is suffering. It should be pointed out that each case should be addressed on its individual merits and that the following are guidelines only. It is not necessary for all criteria to be met. Horses may be euthanized at an owner's request for other reasons, as the owner has sole responsibility for the horse's care. Prior to euthanasia, clear determination of the insurance status of the horse should be made as this policy constitutes a contract between owner and insurance carrier.

In accordance with AVMA's position on euthanasia of animals, the AAEP accepts that humane euthanasia of unwanted horses or those deemed unfit for adoption is an acceptable procedure once all available alternatives have been explored with the client. A horse should not have to endure conditions of lack of

feed or care erosive of the animal's quality of life. This is in accord with the role of the veterinarian as animal advocate.

The following are guidelines to assist in making humane decisions regarding euthanasia of horses:

- A horse should not have to endure continuous or unmanageable pain from a condition that is chronic and incurable.
- A horse should not have to endure a medical or surgical condition that has a hopeless chance of survival.
- A horse should not have to remain alive if it has an unmanageable medical condition that renders it a hazard to itself or its handlers.
- A horse should not have to receive continuous analgesic medication for the relief of pain for the rest of its life.
- A horse should not have to endure a lifetime of continuous individual box stall confinement for prevention or relief of unmanageable pain or suffering.

Techniques for Euthanasia – The following techniques for performing euthanasia of horses by properly trained personnel are deemed acceptable:

1. Intravenous administration of an overdose of barbiturates
2. Gunshot to the brain (edis.ifas.ufl.edu/vm114 Shearer JK, Nicoletti P. Humane euthanasia of sick, injured and/or debilitated livestock. University of Florida IFAS Extension)

3. Penetrating captive bolt to the brain (edis.ifas.ufl.edu/vm114 Shearer JK, Nicoletti P. Humane euthanasia of sick, injured and/or debilitated livestock. University of Florida IFAS Extension)
4. Intravenous administration of a solution of concentrated potassium chloride (KCl) with the horse in a surgical plane of general anesthesia.
5. Alternative methods may be necessary in special circumstances.

Special Considerations for the Insured Horse and Cases Involving Multiple Practitioners:

Each insurance policy for a horse is a contract between the horse owner and the insurance company and will dictate the specific terms and conditions concerning the payment

of a mortality claim. Careful consideration should be given to possible "conflicts of interest" as referenced in the Ethical and Professional Guidelines in the AAEP Resource Guide and Membership Directory. The attending, consulting and referring veterinarians should follow the Ethical and Professional Guidelines under section IV, "Attending, Consulting and Referring," as described in the AAEP Resource Guide & Membership Directory.

VIII: THE BOTTOM LINE – PROTECTING THE HEALTH AND WELFARE OF THE HORSE

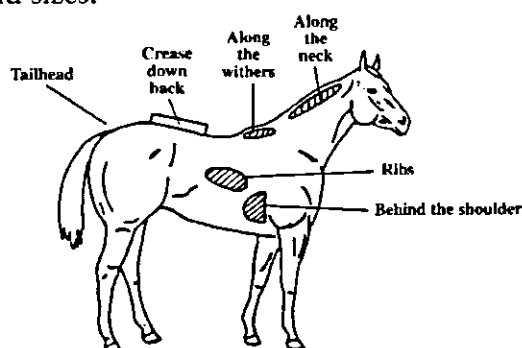
Ultimately, the best indicators of proper management of an equine rescue/retirement facility are the physical and emotional health of the horses and the overall improvement in horses previously suffering from disease, trauma or neglect. Unless there is a medical explanation, all horses should regain and maintain an acceptable state of health and well-being with proper care.

Allowing rescued horses to deteriorate as a result of inadequate care, resources or

space is no favor to them and can progress to the point of cruelty. Those who take in every animal, regardless of ability to provide care or refusal to recognize when an animal is suffering, are hoarders, not rescuers. All rescue and retirement organizations should periodically reevaluate their principles, practices, capabilities and goals with the help of objective, knowledgeable outsiders, especially their equine veterinarians.

BODY CONDITION SCORECARD

This numerical condition scoring system provides a consistent measure of the degree of body fat in horses of various breeds and sizes.



Condition Score Descriptions

- 1 **Poor:** Animal extremely emaciated. Spinous processes, ribs, tailhead and hooks and pins projecting prominently. Bone structure of withers, shoulders and neck easily noticeable. No fatty tissues can be felt.
- 2 **Very thin:** Animal emaciated. Slight fat covering over base of spinous processes, transverse processes of lumbar vertebrae feel rounded. Spinous processes, ribs, tailhead and hooks and pins prominent. Withers, shoulders and neck structures faintly discernible.
- 3 **Thin:** Fat build-up about halfway on spinous processes, transverse processes cannot be felt. Slight fat cover over ribs. Spinous processes and ribs easily discernible. Tailhead prominent, but individual vertebrae cannot be visually identified. Hook bones appear rounded, but easily discernible. Pin bones not distinguishable. Withers, shoulders and neck accentuated.
- 4 **Moderately thin:** Negative crease along back. Faint outline of ribs discernible. Tailhead prominence depends on conformation, fat can be felt around it. Hook bones not discernible. Withers, shoulders and neck not obviously thin.
- 5 **Moderate:** Back level. Ribs cannot be visually distinguished but can be easily felt. Fat around tailhead beginning to feel spongy. Withers appear rounded over spinous processes. Shoulders and neck blend smoothly into body.
- 6 **Moderate to fleshy:** May have a slight crease down back. Fat over ribs feels spongy. Fat around tailhead feels soft. Fat beginning to be deposited along the sides of the withers, behind the shoulders and along the sides of the neck.
- 7 **Fleshy:** May have crease down back. Individual ribs can be felt, but noticeable filling between ribs with fat. Fat around tailhead is soft. Fat deposited along withers, behind shoulders and along the neck.
- 8 **Fat:** Crease down back. Difficult to feel ribs. Fat around tailhead very soft. Area along withers filled with fat. Area behind shoulder filled in flush. Noticeable thickening of neck. Fat deposited along inner buttocks.
- 9 **Extremely fat:** Obvious crease down back. Patch fat appearing over ribs. Bulging fat around tailhead, along withers, behind shoulders and along neck. Fat along inner buttocks may rub together. Flank filled in flush.

Recommendations for Assigning Scores

- Scoring is based on visual appraisal and handling (particularly in scoring horses with long hair) of horses.
- Conformation differences between breeds or types do not affect scoring when all criteria are applied.
- Muscle tone should not be confused with fatness. Scores can be assigned in half-point increments.

Henneke et al Texas A&M 1983

VETERINARY CHECKLIST FOR RESCUE/RETIREMENT FACILITIES

(Adapted from the Thoroughbred Adoption and Retirement Association's (TARA)
"Vet Check for Thoroughbred Adoption & Retirement Sites.")

Note: This checklist is provided as a sample for use by a veterinarian when evaluating the facilities available at an individual rescue or retirement.

Scoring System for Checklist:

Excellent – 5

Good – 4

Adequate – 3

Fair – 2

Inadequate – 1

(Add specific comments as needed.)

Name of Facility: _____

Address: _____

Primary Contact: _____

Telephone: _____ Fax: _____

I. Equids

Number at facility: _____ Maximum capacity: _____

Overall appearance and health: _____

II. Preventative Care and Basic Health Management

___ Parasite Control Program _____

___ Vaccination Program _____

___ Dental Care _____

___ Emergency First Aid Kit _____

___ Health Records System _____

___ Injury Protocol _____

III. Feed Program

___ Hay _____

___ Pasture _____

___ Grain _____

___ Supplements _____

___ Storage of Hay, Grain & Supplements _____

___ Free Access to Hay _____

IV. Water

Indoor water supply: ___ Buckets ___ Automatic Waterers

___ Availability _____

___ Cleanliness _____

Outdoor water supply: ___ Tanks ___ Automatic Waterers ___ Naturally Occurring

___ Availability _____

___ Cleanliness _____

Please list all indoor/outdoor water sources:

V. Pastures and Paddocks

- ___ Cleanliness _____
- ___ Available for Turnout _____
- ___ Access to Feed and Water _____
- ___ Size _____
- ___ Division of Horses _____

VI. Fencing

- ___ Type _____
- ___ Condition _____
- ___ Safety _____

VII. Facility

- ___ Barns _____
- ___ Stalls _____
- Size: _____
- Number: _____
- Isolation/Quarantine Area: _____
- ___ Run-in Sheds _____
- ___ Living Quarters for Workers _____
- ___ Personnel Present at Facility at All Times _____

VII. Farrier

___ Regular Visits _____

___ Quality of Care _____

VIII. Horse Transportation

Please describe modes of transportation for horses available at this facility (van, truck trailer, etc.):

IX. Equipment Condition

___ Tack _____

___ Buckets _____

___ Brushes _____

___ Hoses _____

___ Hay Racks _____

X. Environment

___ Safety _____

___ Cleanliness _____

___ Bedding _____

___ Manure Removal _____

___ Fly Control _____

[illegible]

Date: _____

APPENDIX 1

From: <http://www.vetmed.ucdavis.edu/ceh/docs/special/pubs-Sanctuary-bkm-sec.pdf>

Evaluation of Stages of Disability

In general, horses that have normal ambulatory movement (M) capability, are eating (E) and drinking (D), and have stable body weight (W) are considered healthy (Table 4). Observation should also be made within the horse's environment for their ability to lie down and get up in the pasture or area of confinement. Short-term conditions which can produce illness or lameness need to be diagnosed and those conditions with a favorable prognosis for cure should be treated by the attending veterinarian. Their guidance should determine whether on-site short-term treatments or hospitalization with acute care measures are appropriate for the resolution of each individual case. Rescue facilities should have a small treatment area and individual stalls assigned for medical treatments to insure the proper care of horses treated on-site.

The health status of geriatric or medically compromised horses may sometimes degenerate to levels which are inconsistent with humane care and sustenance of life. Consequently, a predetermined experienced and knowledgeable individual should be identified who can work in conjunction with a veterinarian to assess horses when there is a question raised as to their ability to live a life without pain and/or severe physical restrictions. Each case must be evaluated carefully and individually as a degree of subjectivity is often an unavoidable part of the decision making process. Often a horse may have to be closely observed and monitored for a period of time with multiple and sequential evaluations to determine the magnitude of a disability and its consequences. An equine sanctuary or rescue facility should never become a hospice for horses that are severely infirmed, in chronic pain or for those

where their humane continuance of life is not sustainable. Animals whose health status puts them in such a category should receive careful consideration for a humane end of life. Modern veterinary medicine has the ability to humanely end the life of an animal whose pain and suffering cannot otherwise be alleviated. "While medicine aims at restoring or maintaining healthy living, similarly, it is also conceptually part of the veterinarian's duty to end suffering totally erosive of the animal's quality of life." (Rollins, 2006).

Long-term Survival Evaluation and Care of Geriatric Horses

Regardless of the horse's age in years, the physical criteria of normal movement, eating, drinking, and normal weight (MEDW) should be the basis of evaluation of a horse's general state of well being. Additionally, the ability to lie down and get back up without significant difficulty is especially important in the older horse. Geriatric horses may loose some weight or appear, physically different due to redistribution of fat and the normal ventral curvature of the spine that occurs with aging, but if the other components of MEDW are present then quality of life is presumed to be adequate for their continued maintenance within the rescue facility or sanctuary. Regular assessments of these basic criteria should be used. In general older horses need more attention to hoof care, dental care, parasite control, and segregation from aggressive horses which may prevent them from eating hay placed in group feeders or pasture. Signs that an older horse has reached an end point vary but the use of MEDW is the basic assessment criteria. Additionally, frequent veterinary health examinations must be part of the routine care with geriatric animals so that early signs of metabolic organ failure or disease will be recognized and adequately addressed. Failure to attend promptly to diseases common

to older horses can lead to unnecessary suffering and premature loss of life.

Decision Tree for the Timing and Need for the Humane End of Life

There are two instances where euthanasia of a horse needs to be considered. The first is an emergency setting involving a painful, acute-onset condition such as a fracture, head or spinal trauma and recumbency, severe colic, severe body wound, or penetrating wound to a joint. The second is a chronic longer-term problem which may be progressing to a situation that is erosive to the quality of life or involves uncontrollable pain.

The emergency situation requires an immediate veterinary response and prompt evaluation and consideration for euthanasia. If immediate veterinary attendance is not possible, experienced farm managers, animal control officers, or others who have had training to certify them in the use of emergency euthanasia of horses may perform euthanasia on an animal if it is a clear cut situation with massive suffering and/or the impossibility for recovery.

Specific information regarding emergency euthanasia procedures can be found at: www.vetmed.ucdavis.edu/vetext/animalwelfare/euthanasia/emergencyEuth_horses2-2pdf

In chronic conditions, the decision to end the life of a horse which has slowly progressed is much more difficult. While quality of life is always the primary consideration economic factors can also have influence. If a very old or infirm animal cannot be maintained properly due to lack of the financial ability to sustain care, then euthanasia, may be a reasonable option. There is no standard flow chart or set of rules for decision making other than attempting to answer the following questions:

How much suffering is the horse going through? What, if any, are the chances for recovery? What will be the veterinary costs of recovery? How much will it cost to maintain the debilitated animal?

Can the care needed for the horse's condition be provided and maintained? Will other animals under the care of the facility be negatively affected by the commitment of time and expense to this one horse?

Does the horse not meet MEDW standards for normal life in spite of the fact that it has been adequately treated for an extended period of time?

Specific guidelines for the humane end of life decision process for horses have been developed by the AAEP and can be found on their web site (www.aaep.org).

Table 4 MEDW Criteria Expanded for Chronic Conditions

Movement (M)

Horses are able to walk, trot, lie down and get up without substantial lameness or lack of weight bearing on all four limbs. In veterinary medicine, lameness is graded on a 5-point scale with mild conditions starting at a grade of 1 progressing to total lack of weight bearing graded a 5. When a given horse must constantly struggle to move, its condition may very well have progressed to a point where euthanasia should be considered.

Eating (E)

Horses must be able to eat long stem hay, processed feed pellets or cubes, and/or supplements. A loss of appetite, a general disinterest in feed or the physical inability that prevents chewing and swallowing are all signs for concern. If eating desire or ability is severely compromised and dental or other conditions cannot be corrected, then euthanasia may be considered.

Drinking (D)

Horses must be able to easily seek, move towards, and consume appropriate amounts of water daily for proper fluid balance

and digestive function. Failure to consume adequate amounts of water leads to a rapid and dangerous degeneration of health. Horses with a physical or neurological impairment which prevents them from obtaining adequate water consumption should be considered for euthanasia.

Weight (W)

Horse's body condition scores (BCS) will vary with time of year, age, and response to a medical condition. An older, skinny horse that is eating, drinking and moving is not a reason for euthanasia. Deteriorating body weight and condition as the result of old age or an ongoing medical condition will lead to weakness and inability to comfortably survive. Horses which arrive at this state should be considered for euthanasia.

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