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First Aid for Horses

Recommended books:

Emergency! : The Active Horseman's Book of Emergency Care
By Karen Hayes, DVM, MS
Half Halt Press, Inc., 1995
ISBN 0-939481-42-1

The Complete Guide to Buying, Maintaining, and Servicing a Horse Trailer
by Neva Kitrell Sheve
Wiley Publishing, Inc., 2001
ISBN 0-87605-686-9

Online Resources:

U. C. Davis Center for Equine Health
www.vetmed.ucdavis.edu/ceh/

Felton Fire Department
<http://www.feltonfire.com/lar.html>

International Animal Welfare Training Institute
<http://www.vetmed.ucdavis.edu/lawti/index.cfm>

General Considerations:

- 1) First aid is a mindset as much as it is a set of techniques. You can be more effective in an emergency if you can resist panic and remain calm. The more you think about what to do before action is required, and the more contingency planning you do, the less panicky you will be.
- 2) If possible, get to know what is normal for your horse; temp, heart rate, gut sounds, etc (refer to physical exam checklist).
- 3) The horse should tolerate and be used to "close handling", i.e., taking temp, fingers in ears and nose and mouth, being twitched, looking in eyes and mouth, hands on inside surfaces of legs, etc.
- 4) First aid supplies to have on hand: see separate list, and discuss individually with your own veterinarian. Some items require special instruction to use properly.
- 5) Preventive maintenance- regular vaccination, dental care, deworming, maintaining safe environments, etc, will avoid the need for a lot of first aid.
- 6) Much of the effort to prevent problems in the first place, and thereby to avoid the need for "first aid", comes under the heading of what I would call "useful paranoia" or "constructive pessimism".

That is, you should develop an eye for the worst possible outcome in every situation. If there is an exposed edge of sheet metal, or a nail, sooner or later there will be a laceration. If there is any way at all the horse can get into the grain storage bin, sooner or later there will be laminitis. If you have a water tank up on bricks in an otherwise dry paddock, sooner or later you will get to deal with snake bite. And so on. Money and effort spent in hazard mitigation is never wasted.

- 7) Use of a twitch- When treating an ill, or especially an injured horse, often a limiting factor to what can be accomplished (when cleaning a wound, for example, or applying a splint), is the degree to which the horse will cooperate. Veterinarians have the luxury of being able to tranquilize horses as necessary; you will not have that available in rendering first aid. **I would urge anyone with a prejudice against the use of a twitch to get over it;** they are far and away the most useful tool there is in handling an uncooperative and un-sedated horse. They don't work on all horses, and there is an art to using them which you will need to learn, but they are extremely useful in many situations. Contrary to some peoples' belief, they do not cause pain; rather they are a form of acupressure, and act as an endorphin releaser.
- 8) Halters: rope halters with long permanently attached lead ropes have their place in training and normal day-to-day handling, but are inappropriate for emergency situations; they frequently loosen, they apply too much focal pressure at the poll, and long lead ropes tangled on the ground can be dangerous to horse and handler. In emergency situations, a well fitted flat nylon halter with a detachable lead rope is preferred.
- 9) Staging the treatment area: this is more of a consideration away from home (such as at a ride or an evacuation, or a search scene) than at home, but you need to pay attention to the immediate environment where the first aid procedures are to take place, and to move unnecessary personnel well back, and to be aware of and to minimize dangerous objects in the immediate field of action. If on the trail, try to dispatch someone to move a trailer to the nearest possible access point, but have an agreement about what to do if that person doesn't return by a pre-determined time.

Specific Problems:

1) Soft Tissue Injuries: Don't panic- a little bit of blood can look like a lot. A 1000 lb horse has about 12 gallons of blood, and can lose about 20% of that without real difficulties. About that much is stored in the spleen, and can be mobilized as needed to prevent hypovolemic shock. If you plan on calling for veterinary assistance for a wound, confine your treatment to cleaning the wound gently after stopping bleeding with direct pressure, or RARELY with an Esmarch tourniquet. Never put anything caustic or non-water-soluble on a wound or you will render it unsutureable. Examples would be Swat, Wonder Dust, and Corona. Clean the wound gently and flush with sterile saline solution. Apply a clean bandage, if possible, with a light coating of a water-soluble antiseptic, to keep out dirt and prevent drying of skin edges.

2) Fractures: These are among the most serious injuries a horse can sustain, but they can be much more successfully treated than was the case just a decade or so ago, and they are also one situation in which the quality of the first aid rendered makes the biggest difference in the outcome. As a general rule, fractures more distal on the limb have a better prognosis than fractures higher up, and closed fractures have a MUCH better prognosis than open (compound) fractures. The primary goal of first aid for a closed fracture is to prevent its conversion to a compound fracture, and to protect the adjacent soft tissue generally.

The cost of treatment of all major fractures is considerable (at least \$10,000 - \$20,000, or more in most cases), so before treating an *obvious* long bone fracture, and putting the horse through the pain and stress of first aid and transport, cost and prognosis should be calmly assessed, and emergency euthanasia should be considered. Obviously, if there is any real question of whether or not a fracture is present, all effort should be made to get the horse safely to a location where radiographs are possible. Please see the accompanying handouts for specific splinting techniques. The most important aspects of splinting are to immobilize the joints below **and** above the fracture site.

A horse with a front limb fracture should be transported facing rear in the trailer, and a horse with a hind limb fracture should ride facing forward. The trailer should be a large slant load, with dividers, and a ramp or low step-up. The horse should be loaded in the forward-most bay of the trailer.

- 3) Colic: Not a disease, as such, but a sign (abdominal pain) of a number of different problems, ranging from mild digestive upset such as gas cramps, to kidney problems, to potentially fatal intestinal twists, displacements, or obstructions. Can be confused with laminitis and rhabdomyolysis. If the horse is violently painful (thrashing, rolling, kicking, etc.), call for assistance immediately, and try not to let the horse roll.

If the horse is more mildly painful (posturing, pawing, stretching, looking at flanks), then assess vital signs (see physical exam checklist), and then call for advise once there is some information to relate. Walking the horse may relieve some mild digestive colics, but don't force the horse to walk if he is very reluctant; the problem could be laminitis or rhabdomyolysis, both of which would be made worse by forced walking.

Many people have access to Banamine. It is **NOT** advised to give Banamine to a colicky horse that has not been examined professionally, if the horse would be an economic candidate for colic surgery if that should turn out to be indicated. The reason is that Banamine is so effective at alleviating colic pain that a condition can continue to become worse physiologically even while the horse *appears* to be recovering. If the horse is **definitely not** a colic surgery candidate, for whatever reason, then there are fewer disadvantages to giving Banamine to relieve colic pain if the owner wants to avoid the cost of a veterinary examination, or if a veterinarian is not available. In no case should Banamine be given without at least taking the temperature of the horse, since the drug is extremely effective at lowering a fever. Therefore, if the horse is still not doing well several hours later, and is examined at that time and the temperature is normal, a useful piece of information will have been needlessly sacrificed, and the correct diagnosis may be delayed.

- 4) Laminitis ("founder"): This is an inflammation of the feet, which occurs for poorly understood reasons, including infections, carbohydrate overload, metabolic and endocrine derangements, and others, and which has potentially very serious consequences. Signs include reluctance to walk, a "sawhorse" stance, warm or hot hooves, and prominent digital pulses. This is a true emergency, and requires immediate veterinary intervention. Standing the horse with his feet in ice water may help until more definitive treatment is available.
- 5) Rhabdomyolysis ("tying up"): This is another poorly understood problem with potentially serious consequences. Heavily muscled horses are predisposed, especially if on a high carbohydrate (i.e., grain) diet, and with an uneven work schedule. In most cases there is probably also a genetic predisposition. Signs include reluctance to walk, stiff muscles, especially of the hindquarters, and in really severe cases, dark (coffee colored) urine. If you suspect this, do not force the horse to walk even a few steps, and call for help immediately
- 6) Snakebite: Relatively common in California, and vary a lot in severity, depending on relative size of snake and horse, as well as other considerations. Treatment revolves around limiting magnitude and consequences of swelling
- Airway maintenance if on face
 - Cold water and careful counter-pressure with hypertonic dressing if on leg
 - Banamine in both cases
 - If possible, have the veterinarian come to the horse, rather than transport the horse
- 7) Foaling: Normally requires no help from humans, and proceeds rapidly once the mare lies down and begins to strain. Best to provide a roomy box stall, bedded with straw rather than shavings, and to wash the mare's genitalia and wrap the tail when labor begins. Call for help if labor lasts more than 20 minutes beyond when the water breaks, or if the placenta is not passed within 3 hours of foaling. The

placenta should be inspected by a veterinarian or experienced horseperson who is completely familiar with normal placentae. (Even small pieces left in for more than 8 hours can cause uterine infection and laminitis).

Allow the umbilical cord to remain attached until the mare or foal stands and it breaks. Dip the stump in dilute Betadine or Nolvasan. Some bleeding from the stump is normal, but if it is more than an ounce or so in volume, the stump can be tied off with a piece of string which has first been soaked for about a minute in Betadine or Nolvasan.

- 8) Choke: This is usually a lot less of an emergency than it appears. Essentially, this is a blockage of the esophagus. Symptoms are usually pretty clear: feed material, and saliva, and mucous discharging from the mouth and nose. The horse may appear to be in quite a bit of distress, and may be coughing or gagging. It is important to put the horse somewhere in which there is no access to feed or water.

Most chokes, if they are caused by poorly chewed hay or by pellets or cubes, will resolve spontaneously in 1-2 hours. If it does not, then the veterinarian can usually push the mass into the stomach with a tube.

- 9) Nail in hoof: This is a rather common problem, and needs to be dealt with in a fairly counter-intuitive way: **the nail should not be removed**. This is because it is critical to know what specific anatomic structures the nail has penetrated, in order to make accurate treatment decisions. In particular, if the nail has contacted the coffin bone, or has invaded a synovial structure such as the navicular bursa or tendon sheath, the treatment will involve surgery at the earliest possible time. The nail can be seen easily on an x-ray if it remains in place, but it is difficult to impossible to know where the nail has been if it has been removed. If it appears that the nail is at risk of being pushed further into the hoof, then cut it off flush with the surface with diagonal cutters, but leave it in place until it can be radiographed.

10) Burn injuries

- Often more serious than they appear at first
- Can involve eyes, internal organs, and respiratory system, as well as obvious skin injuries
- Almost always require extensive veterinary treatment if at all extensive
- Initial treatment involves application of non-adherent dressing with sterile saline and/or silver sulfadiazine.

- 11) Emergency euthanasia: This is a subject which will be difficult and distasteful for many people, including me, but needs to be discussed, because the occasion will inevitably arise. Circumstances such as broken necks, compound fractures, and intractable colics will necessitate backcountry euthanasia of horses.

While several methods exist, there is really no good alternative to the use of a firearm for this purpose. The caliber of the weapon should be greater than a .22, and a soft-nosed round should be used.

Correct placement of the bullet is critical: draw a line between each ear and the opposite eye. Orient the muzzle of the weapon perpendicular to the plane of the forehead about 1 inch from the surface at the intersection of the lines. Keep all unnecessary bystanders well away. Wear eye protection. One shot should be sufficient. While this is difficult and disturbing both to watch and to do, properly done it is a very effective and humane method of euthanasia.