

**Prepared by Joanna Stroeder - March 2006**

## **Equine Backcountry First Aid**

The care of our saddle and pack stock starts long before the backcountry trip. Stock should be properly vaccinated, have current Coggins Test and Health Certificates if going out of state (or where required), and on a regular deworming and dental program. Stock should be trimmed or shod well in advance of the trip. Adequate physical conditioning and training may require weeks or months of preparation. Hopefully you will never need to use the things covered in this section, but if the need arises, it is very important to have a well-stocked first aid kit. You will also need to know how to assess the situation and administer the necessary emergency care. It can mean the difference in continuing your trip or walking out on your own.

### **First Aid Kit:**

In this handout you will find a list of items needed for your first aid kit. Develop a good working relationship with your veterinarian before your trip season. They can help you work out various treatments and they can address your animals' specific needs or special medical problems.

### **Backcountry Problems:**

The most common problems you will encounter are wounds of various types and locations, colic, sores, strains and hoof injuries. Even though first aid treatment is more limited in the backcountry, your knowledge and supplies will allow you to administer the basic aid necessary for many situations.

### **Assessment:**

When an accident or illness occurs, the first thing that needs to be done is assess the condition of the animal and the severity of the situation. This determines your course of action in treating.

### **Euthanasia:**

No one wants to be in this situation. If you ever talk with someone who has, I guarantee you it was done with a very heavy heart, but with no other choice. Every horse owner who goes out into the backcountry needs to know how to do this even if they don't handle a firearm. It can be the kindest thing you can do if your stock truly needs your help.

In order to accurately assess the condition of the animal, you will use a combination of overall appearance and attitude, a hands on inspection for any heat or swelling, the horses' vital signs and intestinal sounds. Some of the signs of trouble can be very subtle at first. Be very observant at all times, paying close attention to what is normal, so it is much easier to recognize small abnormal differences when they do occur.

## The Vital Signs

**The vital signs give an indication of the overall state of health.** The results you obtain when you suspect a horse is ill will be much more useful if you compare them to the animals' own "normals".

### Body Temperature:

1. Use a 6-inch veterinary thermometer with a 2-foot string tied to it, and an alligator clip or clothespin on the other end.
2. Shake the thermometer down below 95-98 degrees. Lubricate the tip of the thermometer and insert into the rectum. (while standing off to the side of the animal should it kick).
3. Allow 2-3 minutes of incubation.
4. **Normal temperature is: 99-101.5 Adult 99.5-102 Foals**  
A slight increase in temperature alone is not cause for alarm but a 4-degree increase is cause for concern. Temperature might also increase when an animal is exercised, excited, in pain, diseased, or in a hot, humid climate.

### Heart Rate:

1. Listen with a stethoscope behind the left elbow on the chest.
2. The heart will make a "Lub-Dub" sound which is one beat.
3. Pulse rates can also be taken anywhere an artery lies close to the surface of the skin. Such arteries are just above the fetlock (palmer digital artery) or the inside of the jawbone (mandibular artery).
4. Hold your index and middle finger over the artery. Do not use your thumb, it has its' own pulse and you could get conflicting results.
5. **Normal is 35-40 beats per minute**

### Capillary Refill Time and Gum Color:

1. Noting how long it takes for blood to return to blanched tissue is the capillary refill time (CRT) this can indicate circulation problems like shock, dehydration, or toxic reactions.
2. Place a fingertip on the gum for 2-3 seconds, pressing hard enough to create a white spot on the pink surface. Release the pressure and count how many seconds pass until the color returns.
3. If the CRT is prolonged, the animal is showing circulatory impairment and may be in shock. This is often indicative of an animal that may have colic.
4. 3-4 seconds or longer indicates a serious problem. Pale membranes mean shock or blood loss (even if you don't see blood loss they may be bleeding internally). Bright (brick) red may indicate a toxic situation ("Tying Up") Blue membranes are lack of oxygen and impending death.
5. **Normal is 1-2 second CRT and pink in color.**

### **Respiratory Rate:**

1. Watch the rib cage. You should see a regular, rhythmic pendular motion. Count every time it breathes in and out as one breath.
2. Respiration increases with hot, humid weather, exercise, fever, pain, pregnancy, and age.
3. The respiration rate should never exceed the pulse rate.
4. **Normal is 8-20 breaths per minute.**

### **Intestinal Sounds:**

1. The abdomen usually produces sounds indicating roughage and fluids are moving in the intestines.
2. Excess gut sounds are generally less indicative of a problem than the absence of sounds.
3. The mixing sounds are normally short in duration (2-5 seconds) and rapid in rate (2-5 per minute).
4. The propulsive-retropulsive sounds are 15-30 seconds long and occur every 2-3 minutes post feeding.
5. You may not hear any sounds if the gut quits moving.
6. Hyper motile sounds occur with an irritated gut.
7. Gas sounds like wind chimes.
8. Put your stethoscope to your animals' flank. With practice, you should be able to determine if the gurgling, gaseous sounds are normal, in excess or absent.

### **Pinch Test:**

The pliability and resiliency of the skin is a good indication of the level of hydration. To determine if an animal is dehydrated, perform a pinch test. Pick up a fold of skin in the shoulder or neck region and then release it. It should return to its flat position almost instantaneously, within a second or two. If the skin remains peaked for more than two seconds, this is termed a "standing tent" and indicates some degree of loss in body fluids. If the standing tent is 5-10 seconds or longer, the animal is suffering moderate to severe dehydration and needs immediate veterinary attention.

### **Equine First Aid Kit**

#### **1. Wound Cleaning**

- 2 oz. surgical scrub
- Gauze sponges
- Hemostat forceps
- 1 oz. Betadine liquid
- 20-30 cc syringe

#### **2. Wound Treatment**

- Triple antibiotic ointment
- 4x4 telfa pads
- 6" cling gauze roll
- Cotton padding
- Brown gauze

- 4" Vet-wrap
- 2" Wet-Pruf tape
- Sanitary panty liners
- Scissors
- 3. Assessment Tools**
  - 6" veterinary thermometer (with string and clip)
  - Stethoscope
- 4. Hoof Care**
  - Hoof pick
  - Duct Tape
  - Diapers
- 5. Pharmacy**
  - SMZ/TMP tablets 960 mg. (30 tablets)
  - Bute paste
  - Banamine paste
  - Electrolyte paste
  - Triple antibiotic eye ointment
  - .9% saline

## **Emergencies**

### **Wounds**

#### **Inspect the Patient:**

Wait 5-10 minutes for the animal to calm down after an injury before starting any major treatment.

Check overall condition of the patient. More serious injuries require a check of the vitals. With blood loss or shock the heart rate elevates (greater than 60 BPM) with a CRT of 4 seconds or greater, cool extremities and shivering. These patients need help other than just wound care...blankets, IV fluids, shock Rx and pressure wraps to stop bleeding. Take what steps you can and seek help.

#### **Inspect the Wound:**

Cuts not extending all the way through the skin are rarely severe. Topical antibiotic ointment may be all that is needed after the area is cleaned if the patient does not show any signs of lameness.

Wounds that go completely through the skin but have not damaged tissue in other layers may heal without complications if they are above the knee or hock.

Wounds below the knee or hock, damaging tissues below the skin layer, or near a joint or tendon need professional assistance as soon as possible.

### **Wound Cleaning:**

Using surgical soap and a small sponge, thoroughly clean the wound.

Use clean water tinted with Betadine mixed to weak tea strength, and flush the wound with pressure through a syringe. Pick any debris out of the wound. Multiple flushings are very important to remove bacteria and dirt.

If you have a bleeding vessel, clamp the hemostat on the vessel and twist it 10-15 times.

Often this will stop the hemorrhage. If this does not work, a pressure wrap will assist.

Apply pressure to the wound until the bleeding stops. If necessary, tape the clamped hemostat into your pressure wrap and seek medical attention.

### **Medicate the Wound**

Blot the area around the wound dry.

Apply antiseptic ointment.

#### **Do not use:**

Hydrogen Peroxide

Bleach

Grease

Wonder Dust

Purple Wound Dressing

Strong soaps

Straight iodine

Creolin

Talcum powder

Scarlet Oil

Petroleum products

If suturing is needed, do not apply wound ointment of any kind. Keep the wound fresh and moist. It is best if suturing can be done within the first 6 hours. Do not attempt suturing if you have not done it before. Contact your Veterinarian beforehand and learn how to do it if you feel this is something you would like learn.

### **The Bandage**

If you are not proficient at bandaging, do not use a wrap! No wrap is better than a bad wrap. A bandage will protect lower leg wounds from dirt, keep the wound fresh for possible suturing, and help keep the wound edges together. Upper body and head wounds seldom need wraps and these areas are difficult to bandage.

#### **1.Primary Layer**

**Purpose:** To maintain sterile wound environment

**Parts:** Topical Rx, Telfa pad and 6" cling gauze

**Application:** Apply ointment, then telfa pad. Secure the pad with the cling gauze dressing with a gentle motion spiral the wrap down the leg from the injury, then upward past the injury and finally down the leg all the way to the hoof.

Keep pressure uniform and overlap each successive turn so that it covers half of the previous turn.

## 2. Secondary Layer

**Purpose:** To absorb drainage and to prevent excessive compression while supporting the limb.

**Parts:** Cotton padding and 6" brown gauze.

**Application:** Apply the padding in a circle around the limb. Have the bottom of the padding sit at the level of the pastern. Secure this padding with brown gauze in a similar manner as you did the cling gauze wrap.

## 3. Tertiary Layer

**Purpose:** to secure the primary and secondary layers and to prevent environmental contamination.

**Parts:** Vet-Wrap and 1" adhesive tape.

**Application:** Start about  $\frac{3}{4}$ " above the bottom of the padding, spiral the wrap up the limb firmly overlapping  $\frac{1}{2}$  the material over the previous turn. Work to the top of padding, also leaving  $\frac{3}{4}$ " uncovered. Secure the top and bottom of the bandage with tape so they do not unravel. DO NOT stretch the Vet-Wrap tight as you apply the bandage. This will be much too tight, cutting off the circulation to the leg. Pull out from the roll, then apply loosely around the padding. Always wrap all the way to the hoof no matter where on the leg the injury may be!

### Care:

Change the wrap daily for the first week, then every 2-3 days thereafter. Clean the wound thoroughly and medicate before applying a new bandage. Watch bandages very closely for and slippage. Extreme damage can be caused if bandages slip, bunch and cut off circulation. Change the wrap if it slips, gets wet, smells, is swollen above or below the wrap (this is the reason why you need to **ALWAYS** wrap all the way to the hoof!) or if the animal seems painful.

**Splints:** Wood slats or branches taped to the outside of the padded wrap will help add further stability if needed for injuries.

**Heel Blocks:** If the flexor tendon is swollen, a wedge block or round branch section taped to the heel will relieve pressure off the flexor tendon and may prevent further damage until help is available.

**Foot Bandage:** Wrap a clean diaper around the hoof and secure with duct tape or use an Easyboot.

### Types of Wounds:

**Punctures:** These wounds often have massive contamination and possible tissue damage under the skin where only a small hole exists. Puncture wounds almost always become infected and need special attention, especially if on the lower leg or close to the joints.

**Burns:** These are usually caused by ropes or from tack. The damaged tissue dies and must be removed by drainage or by surgery. The wound is then treated as an open laceration.

**Lacerations:** These come in all shapes and forms. Small cuts often heal with minimal treatment. but crushing wounds, large open wounds and those of the lower limb need help to minimize scar tissue.

**Antibiotics:** These are needed if the wound is large, contaminated, deep, already infected, or near a joint or tendon sheath. Consult with your veterinarian on type of antibiotic for a backcountry first aid kit, correct dosage, and method of administration. The most common problem is using the wrong drug or an incorrect dosage.

**Tetanus Prevention:** Should be covered in your yearly vaccination protocol but if your animal has not received a vaccination within 30 days of the injury, a booster vaccine is indicated.

**Other Medications:** Bute paste can be administered according to the label directions (or as directed by your veterinarian) to help control pain and swelling.

**RED ALERTS Consider getting your horse out of the backcountry and get help!**

\*You discover a wound but your animal is cold, has pale membranes, seems very tired, is breathing irregularly etc. The animal may be in shock. Cover the animal and keep as warm as possible while heading out.

\*There is uncontrollable bleeding from a wound even with direct pressure for over 10 min. Clamp as many bleeders as you can, pressure wrap and head out.

\*The horse is very lame or is thrashing about because of the injury. Calm the panicking animal as much as possible and head out. Go slowly with a seriously lame animal. Take as much tack off as possible to reduce weight.

\*There is a clear yellow fluid coming from the joint wound. Bandage the wound and head out.

\*The wound is on a joint or below the hock or knee. These injuries need extra attention due to the possibility of infection going into a joint, and the lack of blood supply below the knee or hock, resulting in slow healing and potential infection.

**Colic:**

**Signs: Mild Signs**

Laying down

Lethargic, Yawning

Grinding teeth, Looking at flank

Pulse elevated to 50 or 60

No G.I. motility or excessive motility

CRT 2, pink membranes

**Moderate Signs**

Pawing at the ground, Sweating

Laying down-getting up-stretching

Pulse in the 60 to 80 range

No G.I. motility

**Severe Signs**

The above signs

Wildly thrashing, Rolling

Pulse over 80

CRT 3 seconds or greater

Pale membranes

If the pulse is above 100, horse almost always will die

If the pulse is over 120 and the membranes are blue, the horse is close to death

**First Aid:**

Heart rate and gum color are the two most important factors in determining horse's condition

Blanket the horse to keep it warm

Walk the animal if it wants to go down, be careful not to have it roll on you in the process. Do not over-exercise the animal, not walking it at all is better than exhausting it. If the animal wants to lie quietly, you can leave it down as long as it's not rolling.

**Pain relief**

1. Oral Banamine paste
2. Rx your DVM has prescribed or administered
3. 60 aspirin, crushed or drenched in a soda bottle (when nothing else is available)

**Prevention**

Deworm every 60 days or use Strongid-C daily

Avoid sudden feed changes, excess grain, or working soon after feeding.

Avoid giving cold water until the animal has cooled out, then initially only small amounts at a time..

Keep all grains covered or locked in horse proof areas

Do not feed on the ground in sandy areas

Avoid poisonous plants

Have your horse properly conditioned before your trip

**Tack Sores**

Poor fitting tack and/or soft skinned animals can result in rub sores. These sores can be mere red spots or they can extend through the skin and cause pain.

**Signs:** Check the animal over at the end of the day for red areas or sores. During the ride in horses that are sore may exhibit discomfort, an altered gait, "crow-hopping", or may just lay down.

**First Aid:** Trim the hair around the area and apply ointment if the wound is superficial. Take a sanitary panty liner and place under the offending tack. Cut to fit if necessary.

**Prevention:** Be sure tack fits properly before the trip and check the fit at rest stops on the trail.

## Eye Injuries

Eye injuries are of special concern in the backcountry, as they can deteriorate very quickly, so these injuries need some special attention.

**Foreign Bodies:** Foxtails, dirt, sawdust, hay, pine needles, or etc. can lodge in the tissues around the eye or hide under the eyelids.

- **Signs-**The animal may squint. The eyelids may swell. Severe tearing or pus discharge. You may see the foreign body extend into the cornea. Flush the eye with the flush solution. Use the eye antibiotic ointment every 6-8 hours, and protect with a fly mask. Seek DVM attention as soon as possible. **If a foreign body extends into the eye itself, do not remove it; seek veterinary attention as soon as possible!**

**Eyelid Lacerations:** The eyelids can easily be torn or cut by brush and obstacles.

- \* **Signs-**The signs are usually obvious, a torn, bleeding eyelid.
- \* **First Aid-**These wounds heal well when sutured. They do not always need DVM attention immediately and often you can continue on your trip. Wash the eye out often with the sterile saline solution. Use the triple antibiotic eye ointment every 6-8 hours. Start oral antibiotics. Have your DVM debride and suture the wound when you get back home.

**Corneal Injuries:** The corneas can be scratched or punctured by foreign bodies.

- \* **Signs**The animal will squint its eyelid. You may be able to see a cloudy spot on the cornea or the eye may discharge.
- \* **First Aid-**Examine the eye for foreign bodies. Flush the eye with sterile saline. Use the triple antibiotic eye ointment every 6-8 hours. Do Not use a steroid based ointment unless vet. Use a fly mask for protection. Seek veterinary attention as soon as possible.

## Hoof Injuries

**Bruises:** stones or hard ground can cause the tissues of the foot to bruise.

- \* **Signs-**Reluctance to bear weight or lameness on the limb. Jerk response when the foot is tapped with a hammer.
- \* **First Aid-**Rest. Bute paste, 2 grams twice daily for 1,000 lb. horse or as directed by your vet. DVM exam if no response to treatment, these can abscess or involve more severe problems with the coffin bone.

**Lost Shoe:** If you take it easy on the trail and if your horse does not have sensitive and soft soles, you may be able to bring the animal out without another shoe being applied. You could sit down beforehand with your farrier and have them instruct you in replacing the shoe until you get home. A second option would be to use an Easy Boot. Diapers and Duct Tape can also help protect the sole for short distances.

**Punctures:** Punctures are very dangerous because they are often made by a small object like a nail. The object carries manure and soil into the sole where severe infections can incubate. Deep penetrating objects can also damage or infect tissues below the sole such as the flexor tendons or coffin bone. If these structures are involved, extensive measures are needed if the horse is to be salvaged.

\* **First Aid-**Remove the nail or wood stab and save it. Soak the foot in Epsoms Salt (1# per Gal. Water) twice daily for 20 min. Apply Betadine to the wound. Antibiotics should

be started twice daily. Proper excavation of the wound is paramount for success. Consult your veterinarian as soon as possible for this type of injury.

**Exercise Intolerance:** This problem is evidenced by the horse's inability or refusal to go any further on the trail. Pushing the animal at this point can cause severe and perhaps life threatening problems. There are several forms of exercise intolerance.

\***Exhaustion:** This can occur after severe exercise or moderate activity with a poorly conditioned animal. Often there are electrolyte imbalances that contribute to the signs.

\***Signs-**Refusal to go any further on the trail. Trembling, weakness, some will go down. Often profuse sweating. Temperature is only moderately elevated from the exercise. Gut motility may be decreased.

\***First Aid-**Long rest. If the temperature is above 104 degrees, put cold water on the limbs, NOT on the upper muscles. Electrolyte paste will help replace needed electrolytes. Do not feed or water until the animal has cooled out and recovered to avoid colic. Bute paste will help prevent muscles from cramping and soreness.

\***Prevention-**Special supplements that provide extra electrolytes and selenium are very important. Adequate rest stops along the trail. Small drinks of water along the trail. Use electrolyte paste to supplement on hard rides.

**Euthanasia:** Although this subject is very uncomfortable to talk about, everyone who goes into the backcountry with equines needs to know how to perform humane euthanasia should an unfortunate event occur and it becomes necessary.

- **Firearm:** If you do not wish to carry a firearm yourself, you should always ride with someone who will for many reasons. Should you need to euthanize an animal with a firearm, pistols work best. The anatomy of a horse does not place the brain "between the eyes" as in the western movies. For a frontal shot, draw an "X" across the forehead crossing the left ear to the right eye and the right ear to the left eye. The shot should be placed just slightly above the "X" aiming towards the neck. The second placement of a shot could be from the side, just below the ear hole aiming towards the opposite ear. The last shot placement is behind the head just below the poll aiming towards the muzzle. Never attempt to shoot an animal in the heart as you would if you were hunting. Many euthanasia's go very badly this way and it is very distressing for all involved.
- **Rectally:** If an animal is lying down and not thrashing about, you can humanely euthanize it without a firearm. Insert your arm into the rectum with a sharp blade in your palm. Feel for the caudal rectal artery. It is located on the dorsal side of the rectal wall and should have a strong

pulse. Cut the artery from side to side. This area doesn't have a lot of nerves and shouldn't be very painful. The animal will bleed out internally very quickly and without much stress.