

## **Equine Backcountry First Aid**

The care of our saddle and pack stock starts long before the backcountry trip. Stock should be properly vaccinated, on a good 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. Prior and Proper Preparation can go a long way in the prevention of a medical crisis on the trail. 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, and know exactly how to assess the situation and administer the necessary first aid. It can mean the difference of continuing your trip, or having to bring your animal out of the backcountry to obtain veterinary care.

### ➤ **First Aid Kit:**

In this handout you will find a list of items needed for your first aid kit. As you go through the topics to be covered, this list becomes self-explanatory. Develop a good working relationship with your veterinarian. He can help you work out various treatments, and administer necessary medications for a well-stocked kit

### ➤ **Backcountry Problems:**

The most common things we will have to deal with in the backcountry are wounds of various types (lacerations and puncture wounds), colic, eye injuries, tack 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 initial first aid needed for many situations.

### ➤ **Assessment:**

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

In order to accurately assess the condition of the horse, you will use a combination of his overall appearance and attitude, a hands on inspection for any bumps, bruises and swelling, the horse's vital signs (temperature, heart rate, respiratory rate, capillary refill time,) and the 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 do they occur.

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## **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 horse's 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 thermometer down below 95-98 degrees. Lubricate the tip of the thermometer with petroleum jelly. Insert into rectum while standing off to the side (so you don't get kicked, should the horse kick out).
3. Allow 2 to 3 minutes of incubation.
4. An increase in temperature itself is not a cause for alarm.
5. Often a 2-degree increase is not a problem, but 4 degrees above a horse's normal is cause for concern. Temperature might also increase when a horse is exercised, excited, in pain, diseased, or is in a hot, humid climate.

**Normal Temperature is:**

**Average Adult Horse: 99 to 101.5 degrees**

**Foals: 99.5 to 102 degrees**

### **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.
4. Just above the fetlock, use the palmer digital artery. Another pulse site is the mandibular artery on the inside of the horse's jawbone.
5. Hold your index and middle finger over the artery. (If you use your thumb, you risk getting your own reading confused with the horse's.)

**Normal is 35-40 beats per minute (average adult horse)**

### **Capillary Refill Time (CRT) and Gum Color:**

1. Noting how long it takes for blood to return to blanched tissues is the CRT, which indicates circulation problems like shock, dehydration, or toxic reactions.
2. Place the 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 color returns.
3. If the CRT is prolonged, the horse is showing circulatory impairment and may be in shock. This is often indicative of a horse that has colic.

**Normal is 1-2 seconds, and pink in color**

- 3-4 seconds or longer indicates problems. Pale membranes can mean shock or blood loss, bright red may indicate a toxic situation, blue membranes can indicate impending death.

### **Respiratory Rate:**

- Watch the rib cage. You should see a regular, rhythmic pendular motion. Count every time he breathes in and out as one breath.
- Respiration increases with hot, humid weather, exercise, fever, pain, pregnancy and age.
- The respiration rate should never exceed the pulse rate.

**Normal is 8 to 20 breaths per minute**

### **Intestinal Sounds:**

- The abdomen usually produces sounds indicating roughage and fluids are moving in the intestines.
- Excess gut sounds are generally less indicative of a problem than the absence of sounds.
- The mixing sounds are normally short in duration (2-5seconds) and rapid in rate (2-5 per minute).
- The propulsive-retropulsive sounds are 15-30 seconds long and occur every 2 to 3 minutes post feeding.
- You may not hear any sound if the gut quits moving.
- Hypermotile sounds occur with an irritated gut.
- Gas sounds like wind chimes.
- Put your ear or stethoscope to your horse's 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 a horse is dehydrated, perform the 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 of body fluid. If the standing tent is 5 to 10 seconds or longer, the horse is suffering from moderate to severe dehydration and needs immediate veterinary attention.

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## **Equine First Aid Kit**

### **1. Wound Cleaning**

- 2 oz. surgical scrub
- surgical scrub brush
- gauze sponges
- hemostat forceps
- 1 oz. Xenodine or Betadine liquid (or any 1% tamed iodine solution)
- 20-30 cc syringe (used for flushing)

### **2. Wound Treatment**

- 4 oz. PRN wound dressing, and/or any triple antibiotic ointment
- 4x4 telfa pads (6)
- Kling 6" gauze roll
- Combine roll or quilted padding
- Brown gauze 6"
- Vet-rap 4" (2)
- Elasticon tape 3" (2)
- Adhesive tape 1" (2)
- Scissors

### **3. Assessment Tools**

- 6" veterinary thermometer in a case (with string & clip)
- Stethoscope

### **4. Hoof Care**

- hoof pick
- hammer
- shoe & nails or an easy boot

### **5. Tack Sores**

- 4 oz Aloeseptic ointment, (or any soothing analgesic ointment )
- Foam padding 2" thick

### **6. Insect Care**

- A good fly spray
- Towel and repellent to rub in ears

### **7. Pharmacy**

- Antibiotics (250cc Pen G or oral antibiotics) Consult your veterinary as to type and dosage.
- Butazolidin Paste (2) and/or tablet form (pain & inflammation)
- Banamine Paste (2) and/or Banamine shot (pain/colic)
- Electroamino paste (2) (dehydration)
- Ophthalmic antibiotic ointment (for eyes)
- Eye Wash
- 12 cc syringes w/18 gauge needles (10-15)
- Antihistamine (optional)
- Suturing materials (optional)

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## **Emergencies**

### **Wounds**

#### **Step One - Inspection of the Patient**

- ✓ Always wait 5-10 minutes for the horse to settle down after an injury before starting major treatment.
- ✓ Check overall condition of the patient. More serious injuries require a check of the vitals.

- ✓ With blood loss or shock we see elevated heart rates (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 the bleeding. Take what steps you can and seek help

### **Step Two – Inspection of the Wound**

- ✓ Cuts not extending all the way through the skin are rarely severe. Topical antiseptic or antibiotic ointment may be all that is needed after the area is cleaned if the patient does not show any lameness.
- ✓ Wounds that go completely through the skin layer but have not damaged tissue in other layers may heal without complications if they are above the knee or hock.
- ✓ Wounds below the hock or knee, damaging tissues below the skin layer, or near a joint or tendon need professional assistance as soon as possible.

### **Step Three – Wound Cleaning**

Horses live in dirt and manure, therefore their wounds are often filled with this material. High bacterial loads cause infection, but soil also acts as an infection-potentiating factor.

#### **Wound Cleaning is the most important step**

- ✓ Using the surgical soap and small sponge, thoroughly clean the wound.
- ✓ Use clean water tinted with a 1% iodine solution (Xenodine, Betadine or etc.) mixed to a weak-tea strength, and flush the wound with pressure through a syringe (size 20-30 cc). 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 to 15 times. Often this will stop the hemorrhage. If this does not work, a pressure wrap will assist. Apply pressure to wound until bleeding stops.

### **Step Four - Medicate the Wound**

- ✓ Blot the area around the wound dry
- ✓ Apply PRN wound ointment, and/or antiseptic ointment such as Neosporine, or a similar product.

#### **✓ Do Not Use:**

Hydrogen peroxide	Strong soaps
Household detergents	Tincture of iodine
Bleach	Creolin
Grease	Talcum based powders
Wonder Dust	Scarlet Oil
Purple Wound Dressing	Petroleum Products

- ✓ If suturing is needed, do not apply wound ointment or any kind. Keep the wound fresh and moist. It is best if suturing can be done within the first 6 hours.

### **Step Five – The Bandage**

**If you are not proficient at bandaging, do not use a wrap.** No wrap is much 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 are difficult at best.

#### **Primary Layer:**

**Purpose:** To maintain a sterile wound environment.

**Parts:** Topical Rx & 6" Kling Gauze & 4X4 Telfa Pad

**Application:** Apply ointment, then the telfa pad. Secure the pad with the kling 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 again. Keep pressure uniform and overlap each successive turn so that it covers half or the previous turn.

#### **Second Layer:**

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

**Parts:** Combine roll or quilted leg wrap with 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 kling wrap. If the padding does not extend past the wound, stack a second circle of padding above.

#### **Tertiary Layer:**

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

**Parts:** Vetwrap, Medi-rip, or Polo wraps & 3" Elasticon tape & 1" adhesive tape

**Application:** Start about ¾ inch above the bottom of the padding, spiral the wrap up the limb firmly overlapping ½ the material over the previous turn. Work to top of padding, also leaving ¾ inch uncovered. Secure the top and bottom of the bandage with Elasticon tape and secure the ends of the Elasticon with White adhesive tape so they do not unravel. **DO NOT** stretch the Elasticon tape (or Vetwrap) tight as you apply to top and bottom of bandage. This will be much too tight, cutting off the circulation in the leg. Pull out from roll first, then apply loosely around top and bottom of padding.

### Care:

Change the wrap daily for the first week, (then every 2 to 3 days thereafter), cleaning the wound thoroughly and applying medication before applying a new bandage. **Watch bandages very closely for any slippage.** Extreme damage can be caused if bandages slip, bunch up, and cut off circulation. Change the wrap if it slips, gets wet, smells, is swollen above or below the wrap, or if horse 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

Use the same principles as in the primary and possibly the second steps above. Secure these layers 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 joints.

**Burns** – These are usually caused by ropes or from tack. The damaged tissue dies and must be removed via nature with 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 limbs 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 your DVM 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 a dose that is incorrect.

### Tetanus Prevention

If your horse has not received a tetanus immunization in the last 30 days a booster is indicated.

### Other Medications

Butazoladin Paste can be administered twice daily for the first 4 to 5 days if needed, then once a day thereafter to help control pain and swelling.

### \*\*\* Red Alerts – Consider getting horse out of backcountry and get help! \*\*\*

- ✓ You discover a wound but your horse is cold, has pale membranes, seems very tired, is breathing irregular, etc. The horse may be in shock. Cover the horse and keep as warm as possible.
- ✓ There is uncontrollable bleeding from a wound even with direct pressure for over 10 minutes.
- ✓ The horse is very lame or is thrashing about because of the injury.
- ✓ There is a clear yellow fluid coming from the joint wound.
- ✓ 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.

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## Colic

### Signs:

#### **Mild Signs**

- Laying down, no appetite
- Lethargic, yawning
- Grinding teeth, looking at flank
- Pulse elevated to 50 or 60
- No GI 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 GI motility

#### **Severe Signs**

- The above signs
- Wildly thrashing, rolling
- Pulse over 80
- CRT 3 seconds or greater
- Membranes pale
- 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 2 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.
- ✓ Pain relief
  1. Oral Banamine paste or Banamine injection
  2. Rx your DVM has administered for pain relief.
  3. 60 aspirin, crushed or drenched in pop bottle (when nothing else is available)
- ✓ Withdraw all feed.

### **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 horse 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 or in sandy areas.
- Avoid poisonous plants.
- Have your horse properly conditioned for you backcountry trips.

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### **Tack Sores**

Poor fitting tack and/or soft skinned horses 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 horse 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, or even lay down.

### **First Aid**

Trim the hair around the area. Apply analgesic ointment or cream if wound is superficial, and PRN or Betadine ointment if the wound extends through the skin.

Take the 2" foam and cut a hole slightly larger than the wound. Place the foam pad under the offending tack to protect the wound.

### **Prevention**

Be sure tack and saddles fit properly. Check your tack at rest stops on the trail.

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### **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 horse may squint
- The eyelids may swell
- Severe tearing or pus discharge is common
- You may see the foreign body

### **First Aid**

- ✓ Examine the eye and remove any foreign bodies unless they extend into the cornea.
- ✓ Flush the eye with the flush solution.
- ✓ Use the eye antibiotic ointment every 6 to 8 hours, and protect with fly mask.
- ✓ Seek DVM assistance as soon as possible
- ✓ **If a foreign body extends into the eye bulb, do not remove it, seek DVM assistance as soon as possible.**

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

### **Signs**

The signs are obvious, a torn lid and often bleeding

### **First Aid**

- ✓ These wounds heal well when sutured. They do not always need DVM attention immediately, and often your trip can be finished.
- ✓ Wash the eye out often with the flush solution.
- ✓ Use the antibiotic ointment every 6 to 8 hours.
- ✓ Start Pen G or another antibiotic.

- ✓ Have your DVM debride and suture the eyelid when you arrive home.

**Corneal Injury:** The cornea can be scratched or punctured by foreign bodies

**Signs**

- The horse will squint its eyelids
- You may see a cloudy spot on the cornea or the eye may discharge.

**First Aid**

- ✓ Examine the eye for foreign bodies.
- ✓ Flush the eye with the flush solution.
- ✓ Use the antibiotic eye ointment every 6 to 8 hours. **DO NOT** use steroidal based medications unless specifically prescribed by your DVM.
- ✓ Use Fly mask for protection from sun and dirt when not on the trail.
- ✓ Seek Veterinary help as soon as possible.

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**Hoof Injuries**

**Bruises** – stones or hard ground can cause the tissues in 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
- ✓ Butazoladin—2 grams twice daily for 1000# horse
- ✓ DVM exam if no response, 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 also sit down with your farrier and have him instruct you in replacing the shoe until you get home. A second option would be to use an Easy Boot to protect the sole from rocks & etc. if the horse became sore without the shoe. Foam padding 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 the coffin bone. If these structures are involved, extensive measures are needed if the horse is to be salvaged.

**First Aid** – Remove nail or wood stab and save. Soak the foot in Epsom Salts (1# per gallon of water) twice daily for 20 minutes. Apply Xenodine or Betadine to the wound. Antibiotics should be given daily. Proper excavation of the wound is paramount for success. Consult your veterinary as soon as possible for this type of injury.

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**Exercise Intolerance**

This problem is evidenced by the horse's inability or refusal to go any further on the trail or in the arena. Pushing the horse 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 horse. Often there are electrolyte imbalances that contribute to the signs.

**Signs**

- Refusal to go 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 upper muscles
- ✓ Electroamino paste will help replace needed electrolytes
- ✓ Do not feed or water the horse until it is cooled out and recovered to avoid colic
- ✓ Butazoladin will help prevent muscles cramping and soreness

**Prevention**

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