What constitutes an emergency? It’s a natural reaction to become upset when your horse is injured. It’s O.K. to panic, but do so quickly. Then, take a deep breath, collect as much information about the problem as possible, and move forward.

**First Aid**

*First Aid is the help given until proper medical treatment is available.*

Minor problems may only need a first treatment or repetitions of it. Major or life-threatening problems will require some form of first aid followed by veterinary attention. First aid is not an alternative to contacting your veterinarian. It is what you do first when you find a wound or other problem. The type of first aid given depends on the knowledge, confidence, skill, and initiative of the owner or onlooker and the type of injury. First aid may involve confining, restraining, and comforting the animal while assessing the injury. It also may involve moving the horse to safety and administering the treatment thought necessary at the time. Remember to use common sense. An injured horse is entitled to be scared and uncooperative. In most cases, cleanliness is more important than the type of topical medication that’s applied. This condition of cleanliness applies not only to the wound itself, but everything coming in contact with the wound (hands, dressings, and bandages). Cleanliness and proper wound care will hasten the horse’s recovery. It is important to remember to avoid strong, burning, irritating medicines, and to avoid the temptation to over treat. These things will only retard healing and result in a nastier scar.
The First Aid Kit

Assemble a first aid kit and keep it well stocked for emergencies. Keep your veterinarian’s number in the kit and near all of your phones. Keep the kit in a clean, waterproof container. You won’t want to have to run around, gather things, and disinfect things before you can use them. Take the kit with you when you travel. You can use these materials for treating the horse yourself or in the event that your veterinarian prescribes their use before his / her arrival. Keep a selection of clean towels and pails with the kit, as well. The basic contents include:

**Antibiotics** (Procaine Penicillin, Bactrim, or Tucoprim)

**Antiseptics** (Iodine or Chlorhexidine based)

Antiseptic soaps such as Betadine or Nolvasan are ideal. The antiseptic soap should be added to a bucket of clean, warm water. The wound should be cleaned thoroughly, starting at the center and working outwards. Betadine solution is also good to have on hand to lavage (flush) wounds.

**Bute** (Powder, Paste, or Tablets)

**Bandages**

All bandages must be applied with care. It is very important to use plenty of padding and the padding must be applied flat (not wrinkled). In cases of severe hemorrhage, bandages may be applied tightly for short periods of time. These bandages should be replaced within 30 minutes. The next bandage should be applied with light, even pressure. Bandages that are applied too tight can cause disruption of the blood circulation to the skin. This will result in skin necrosis and sloughing. A bandage that is applied improperly can also cause a bowed tendon.

**Bandage materials include:**

- Non-adherent dressing such as Xeroform or Copa (Kendall Corp.). Place this dressing directly over the wound +/- ointment
- 4x4 gauze sponges (Versalon, Kendall Corp.)
- Conforming bandage (Sof-Form, Medline)
- Roll Cotton
  - Do not apply this directly to the wound as it will stick
- Sheet cotton / cotton leg quilt
  - This will give support and apply slight pressure to the wound
- Self-adhesive bandage (Vetrap, 3M)
  - Effective outer layer
- Elastic adhesive bandage (Elastikon, Johnson & Johnson)
  - Can be used to hold the roll cotton / combine in place
- Cloth or elasticized leg wraps
- Duct Tape

**Clippers** (to remove hair around the wound)

**Disposable syringes and needles**

**Instant cold compress**

**Flashlight** (with fresh batteries)

**Fly repellant dressing**

**Hoof pick and hoof knife**

**Lubricating Jelly**

Place this over the wound, so that hair won’t get stuck in the wound as you clip it.

**Ointments**

Ointments are useful when applied to mild skin problems and can be applied under a dry, non-adherent dressing prior to bandaging. Betadine, chlorhexidine, silver sulfadiazine, and triple antibiotic ointment are all good choices.

**Pocket Knife** (to free a horse caught in a rope)

**Poultice**
Protective boot
Scissors
   Bandage scissors are ideal because they protect the horse’s leg from iatrogenic trauma
Thermometer
Tongue Depressors (for removing and spreading the ointments)
Watch
Weight and height tape
Wire cutters (to free a horse caught in a fence)
Wound powders and sprays
   Some wounds cannot be bandaged due to their location; while others are superficial enough that they do not require bandaging. After cleaning a wound that is not going to be bandaged, a dressing of either powder or spray should be applied. During the summer, a fly repellent should also be used. Try spraying the air near the horse first and assess your horse’s reaction. He will probably get used to the noise. For horses that are reluctant to being sprayed, spray the product onto gauze and then dab it onto the wound. *Never use powders or sprays around the eyes of a horse.*
Bandaging

Bandaging is usually performed when horses have limb wounds. Bandages protect the wound, keep it clean, and encourage normal healing. Anytime limb bandages are applied to wounds, a non-adherent dressing (Xeroform or Copa, Kendall Corp.) is applied to the wound first and a conforming bandage (Sof-Form, Medline) is used to hold this dressing in place (Figure 1). In addition, 4x4 gauze sponges (Versalon, Kendall Corp.) can be placed over the non-adherent dressing to add additional pressure to the site. This bandage can be covered with an adhesive bandage material (Elastikon, Johnson & Johnson) or a lower limb bandage.

**Figure 1.** Placement of a non-adhesive bandage (Xeroform) and conforming gauze bandage (Sof-Form) for direct bandaging of a wound. Apply the conforming bandage smoothly, avoiding wrinkles.
Carpal (Knee) Bandage

Figure 2. Begin this bandage as shown in Figure 1. Next, an elastic adhesive bandage (Elastikon) is applied. Wrap the Elastikon around the leg so that it sticks to the hair of the forearm, above the conforming gauze. This will anchor the bandage. Pull the Elastikon as you wrap around the front of the leg and wrap it snug and smooth, but not too tight! Angle the Elastikon downward and anchor it to the hair below the conforming gauze. Then, angle it upward and finish the bandage. Criss-cross the bandage as shown. Be sure to leave an opening for the accessory carpal bone.
Figure 3. The initial steps in applying a hock bandage. Wrap the Sof-Form above and below the point of hock as shown. Then, start the Elastikon as in the carpal bandage technique.
Figure 4. The hock bandage is applied in a similar manner as the carpal bandage. In this bandage, you simply criss-cross to leave an opening for the point of the hock. Be careful not to place the bandage too tight, as you may damage the tendons. A lot of horses resent having their hocks bandaged and may kick or hold their leg out. Be patient while the horse adjusts to it.
**Lower Limb Bandage**

The lower limb bandage is used to cover a dressing distal to (below) the carpus or tarsus. This type of bandage is used to address swelling or apply pressure. This type of bandage is shown in Figure 5. Padding is applied first. This may be sheet cotton, a combine, or a standing leg wrap. This is held in place by Vetrap (Animal Care Products, 3M), Elastikon (Johnson & Johnson), Ace (Johnson & Johnson), or a nylon wrap. Be sure to leave an inch or so of padding at the distal (bottom) and proximal (top) aspects of the bandage.
Figure 5. Application of a lower limb bandage. The cotton is placed around the leg, and then Vetrap is used to fix the cotton in place.

Full-length Bandage of the Forelimb
The full-length bandage of a forelimb is used to provide support to the carpus. It extends from the mid-forearm, distally (downward). It can be applied in two ways. A lower limb bandage can be applied first, followed by a second similar bandage over the carpus and partially covering the proximal aspect (top) of the lower limb bandage (Figure 6). Or, alternatively, a roll of sheet cotton can be used and the bandage can be applied in a single maneuver. After the bandage is placed, a hole is cut over the accessory carpal bone to help prevent pressure necrosis of the skin over this prominence.

Figure 6. The two-step technique for applying a full-length bandage to the forelimb using roll cotton and Vetrap.
Full-length Bandage of the Hindlimb
A hindlimb bandage can be applied using either of the two methods mentioned for the forelimb (Figure 6 shows one method). This bandage is generally more difficult to apply. As with the hock bandage, some horses resent full limb bandaging in the hindlimb. They may kick repeatedly in an effort to dislodge it. Take care to avoid uneven pressure to the tendons and the point of the hock.

Figure 7. Technique for placing a full-length bandage to the hind limb
Foot Bandage
A dressing is applied to the foot. Cotton is placed over the dressing and Elastikon is used to hold it in place using a figure-eight pattern (Figure 8). A useful addition is to place a protective boot (Barrier, Johnson & Johnson) or duct tape over this bandage (Figure 9).

Figure 8. Cotton padding is applied followed by Elastikon to hold it in place. Cover the hoof, but do not extend the bandage above the coronary band.
Figure 9. Tear several pieces of duct tape and stick them to a clean surface to create a two-layer square as shown. Cut each corner of the square to conform the bandage to the foot.
Figure 9. As a final touch, duct tape can be placed over the top of the hoof to anchor the tags from the bottom. This will secure the bandage further. Be sure not to cover the coronary band.
First Things First

Bleeding
If your horse is bleeding, this is the primary thing to focus on. Worry about wound clean up at a later time. Cleaning the wound now will only promote more bleeding.
Take a deep breath and remain calm. This will help calm the horse. Restrain the horse with a halter and lead rope. If possible, have someone hold the horse for you.
If the wound is only oozing blood, apply gauze and direct pressure for 30 seconds. If bleeding recommences, repeat the procedure. It may require a few minutes to stop. Once the bleeding does stop, clean the wound with an antiseptic soap and water. Then, apply an ointment such as silver sulfadiazine, betadine, chlorhexidine, triple antibiotic ointment, etc.
If blood is flowing freely from the wound, apply gauze and firm pressure for 30 seconds and then cover the gauze with a conforming bandage (Conform) and cover this with an adhesive bandage (Elastikon). Contact your veterinarian. If the wound bleeds through the bandage, place a sheet cotton and Vetrap over the first bandage. It is not necessary to remove the first bandage.
Contact your veterinarian.
If blood is bright red and pulsating, this is a sign of arterial bleeding. Apply gauze and cover it with a conforming bandage. Follow this with an adhesive bandage. Then, place a sheet cotton and Vetrap over this bandage. Call your veterinarian.

Types of Wounds

Closed Wounds
Abrasions
Abrasions are wounds that only remove the superficial layers of skin and result from a graze against a rough or hard surface. These wounds have minimal bleeding, but clear yellow fluid (serum) may ooze from the site. These wounds can be painful to the touch. Infection is uncommon and most heal completely. Possible complications include pythiosis and habronemiasis. Treatment involves gentle cleaning of the wound with an antiseptic soap and water. Moist wound management can hasten recovery and decrease pain. Application of a soothing ointment such as silver sulfadiazine or triple antibiotic ointment encourages rapid healing and prevents infection. A direct bandage (Figure 1) or lower limb bandage (Figure 5) can be applied over the wound. Injuries on areas that cannot be bandaged can be dressed with an ointment as mentioned or a wound spray. The area should be checked daily for any accumulations of dirt, straw, etc. and re-cleaned and dressed as necessary.

Contusions
Contusions are severe bruises of the deep tissues or bone with some skin injury. They are usually painful and swollen. Minor contusions heal with minimal care. More severe contusions may benefit from 15-20 minutes of cold-water hydrotherapy three times a day for 3-4 days followed by warm water hydrotherapy. Topical DMSO / a sweat wrap may be used, ask your veterinarian. In addition, a pressure bandage may be used. The skin over the injury may slough in 5-14 days, but in most instances the area heals without complications. Some scarring can occur. Severe contusions over ribs or the lower legs may have fractures associated with them. Injury to the abdomen may have caused a hernia (defect in the muscles). Monitor horses with abdominal trauma for signs of colic, shock (sweating, depression, trembling), or internal bleeding (white gums). Immediate veterinary attention is needed for such cases. Monitor contusions for any increase in size. This is an indication to call your veterinarian as well.
**Hematomas / seromas**

A hematoma is the accumulation of a large amount of free blood under the skin, whereas a bruise is simply the result of a small amount of bleeding and varying amounts of tissue destruction within and under the skin. A seroma is similar to a hematoma, but it consists of serum instead of blood. Hematomas / seromas can become infected and form abscesses, because blood and serum are conducive to bacterial growth. Treatment depends on preference of your veterinarian and the nature of the injury. Small hematomas are resorbed by the body and are normally left to organize. Topical DMSO may be used. A scar may always be visible once the hematoma has healed. Larger hematomas are treated with cold-water hydrotherapy, antibiotics, and tetanus prophylaxis. In addition, your veterinarian may drain these 7-10 days after the injury.

**Open Wounds**

*All horses with traumatic open wounds should receive tetanus prophylaxis.* With wounds of this type, the primary goal is to stop the bleeding. Wounds involving muscle tend to bleed more. Bandage the wound and have your veterinarian examine it. If the wound is no longer bleeding when it is discovered, you can clean the wound and apply a bandage to the area. Many of these horses will require antibiotic therapy. The sooner your veterinarian examines the wound and begins treating the horse with antibiotics, the less likely the wound will become infected. Your veterinarian may also prescribe an NSAID, such as Bute. Ideally, the wound should be sutured *within* the first six hours after it occurs.

**Incisions (Cuts)**

A sharp object such as metal or glass causes an incised wound. The skin edges are cleanly cut and there is little bruising or tearing of the soft tissue. Some bleeding is common. Pressure bandaging can control bleeding. These wounds are typically candidates for suturing, but it depends on the amount of contamination and duration of the injury. Scarring is usually evident. A concern with these wounds is involvement of other structures such as tendons, tendon sheaths, and joints.

**Lacerations (Tears)**

A laceration involves traumatic tearing of the skin. These are the most common type of wound sustained by horses and are accompanied by bruising and contamination. Healing is more difficult than incised wounds because of this. Tissue necrosis and sloughing are frequent complications. Involvement of other structures is a concern with these wounds as well.

**Avulsions**

These are simply lacerations in which the skin has been torn away. These wounds have extensive soft tissue damage and cause secondary damage to tendons and bone on the distal limb. These wounds must be managed by your veterinarian and may even require skin grafting.
**Punctures (Holes)**
Puncture wounds are some of the most serious wounds because they are often overlooked due to their small size. Nails, glass, bullets, and other small sharp objects that penetrate to variable depths cause these wounds. Healing of the skin wound is usually uncomplicated. The danger of these wounds is in the secondary damage that is difficult to assess. These wounds are frequently contaminated. Puncture wounds in the foot result severe infections that may result in permanent lameness. If your horse sustains a puncture wound, **leave the foreign body in place and contact your veterinarian immediately**. Removing the foreign body could cause more bleeding. By leaving the foreign body in place, your veterinarian can determine which structures are likely to be involved. Do not flush these wounds. You will drive debris further into the wound. If it is a foot wound, place a bandage over the foot and call your veterinarian.

**Complicated wound**
Complicated wounds involve a combination of the types of wounds described above. They also can involve synovial structures such as tendon sheaths and joints. Involvement of the other organs or structures is usually more significant than the skin injury itself. Some of these injuries are life threatening. Healing will depend on the extent of the injury, but will inevitably be problematic.

**Trailer accident**
If your horse is involved in a trailer accident, quietly free the horse. Attempt to calm the horse and apply pressure to severely bleeding wounds. If possible, apply a full limb bandage and a splint to a potentially broken limb. Do not excite the horse. Call your veterinarian immediately.

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**The Bottom Line: When to Call Your Vet**

Wounds should be considered emergencies requiring immediate attention. The best plan is to call your veterinarian immediately and send them a photo of the wound. They can determine if the wound requires closure or instruct you on the best way to manage the wound. Prompt treatment is essential when your horse: is suffering from severe bleeding, has an associated lameness with the wound, has a deep wound to the chest or abdomen, or has a leg injury. Tendon sheath and joint infections are best treated early on. These cases are not typically lame, initially. If you wait until these horses are lame to treat them, they may never completely recover.

Make an effort to carefully look over your horse every day. Use good judgment and get your veterinarian involved at the onset. Always call your veterinarian if any of the following signs of infection develop: increased swelling, heat, pain, development of a purulent discharge, if the edges of the wound pull apart (dehisce), if the wound fails to heal, or if the horse’s overall condition worsens over 24 hours.

If you’re ever unsure whether or not your horse has a serious problem, call your vet to discuss it.