



## **UC Davis Animal Science Horse Barn Herd Health Protocols**

### **Processing Upon Arrival:**

- **Identification:** Each horse is placed into the inventory book in the right hand, bottom drawer of the main office desk. They are given a campus id number. A blue identification collar with a number printed on it is placed on the mares. This number is then recorded in the Herd Inventory (posted in the lab, office, and stocks area). The horse's general information (pedigree, markings, coat color, general disposition descriptions, and a picture) is placed in the white Herd Information binder in the student lounge.
- **Quarantine:** Each new horse is kept separate from the herd in the mare motel for a minimum of 3 weeks.
- **Deworming:** Dewormed with Ivermectin (Lextron Animal Health) according to body weight.
- **Vaccinations:** Adult horses are vaccinated with 4-way (Fort Dodge Equiloid Innovator, Eastern Encephalomyelitis, Western Encephalomyelitis, Tetanus, Flu, intramuscularly) and West Nile Vaccination (Ft. Dodge, intramuscularly). Yearlings and weanlings are placed in appropriate vaccination groups for research.
- **Health Records:** Herd health records are recorded using the computer program "Horse Biz." Any medical treatment or vaccination is recorded in the program. In addition, hard copies of treatment sheets and veterinary instructions will be kept in each individual animal's file located in the Horse Barn office.

### **When to contact the veterinarian:**

- The veterinarian shall be contacted if an animal is showing any signs of disease in conjunction with abnormal vital signs (heart rate above 50 BPM at rest, temperature above 102 ° F, respiration above 32 BPM or below 8 BPM).

### **Treatment of Injured/Sick Horses:**

*\*If an animal has not received a tetanus toxoid injection within the last 6 months they will receive a booster after injury.*

### **Leg Injuries:**

- **Abrasion** (no exposed muscle seen): Clean wound with betadine scrub and dry 4x4 gauze. Apply Nitrofurazone to wound and place a dry 4x4 over wound. Wrap with kling gauze. Wrap over kling gauze with vet wrap if wound is below the knee/hock. Wrap with elasticon if wound is above knee/hock. Note any drugs given on drug sheet outside lab. If proud flesh develops use Panalog® in lieu of Nitrofurazone.
- **Mild Laceration** (no tendons, ligaments, joint, or major blood vessels involved): Clean wound with betadine scrub and remove any adjacent hair with razor or clippers. Numb area with 2% Lidocain HCL (subcutaneously). Suture wound closed. Place triple antibiotic ointment over sutured tissue. Cover sutured tissue with 4x4 gauze. Wrap with kling gauze and vet wrap. If wound is below the knee/hock apply a form of pressure bandage.
- **Severe Laceration** (major blood vessels, tendons, ligament, or joint involved, or deeper than ½ inch): Clean wound with betadine scrub and remove any adjacent hair with a razor or clippers. Contact VMTH field service. Apply pressure if there is severe hemorrhaging.
- **Severe lameness in conjunction with positive hoof testers:** Par out sole of affected hoof until pocket of infection is reached. If infection can not be reached apply a poultice and re-examine in 24 hours. Wrap with brown gauze. Place duct tape or an easy boot around hoof. Place horse inside in a deeply bedded stall. Examine hoof (if infection is not reached) after 24 hours and attempt to par out infection again with hoof knife. If a black slim is present then apply betadine to the hoof. Administer one tab Bute orally for 3 to 5 days. Re-wrap with brown gauze and duct tape or easy boot. Remove wrap in two days and re-wrap hoof with brown gauze and duct tape until hoof grows out and lameness is absent.
- **Thrush:** Clean out hoof with hoof pick. Apply Koppertox® daily until thrush is no longer present.

### **Colic:**

*\*All suspected colic cases shall have vitals and membranes accessed. If membranes are dry and abnormal in color fluids will be administered at the rate of 20 liters per 1000lb horse.*

- **Mild:** A colic shall be considered mild if the horse presents with flank checking and a heart rate within the normal range (24-40 BPM). The horse shall be brought into a stall. The automatic waterer will be taped closed and a bucket of water will be provided to monitor water intake. Passage of feces and urination shall also be monitored. The horse will be observed for signs of increased discomfort. Should the pain worsen further steps will be taken as indicated below.
- **Moderate:** A colic shall be considered moderate if the horse presents with flank checking, kicking at the belly, pawing, quietly laying down, and a slightly

elevated heart rate (44-60 BPM). The horse will be placed inside a stall. The automatic waterer will be taped closed a bucket of water will be provided to monitor water intake. Passage of feces and urination shall also be monitored. The horse shall be provided oral fluids and laxatives as needed. The horse will be hand walked for 20 minutes every two hours. Banamine (0.5-1 mg/kg) may be administered as needed. Should the pain worsen further steps will be taken as indicated below.

- **Severe:** A colic shall be considered severe if the horse is unwilling to remain standing, lies down and rolls, is kicking at the belly, pawing, and has an extremely elevated heart rate (above 60 BPM). If it is safe to do so the horse will be moved into a stall. VMTH will be contacted and the horse will be kept quiet until Field Service arrives.

### **Head Injuries:**

- **Mild** – (scrape or laceration to facial structures, impact injury which does not affect bony structures, major blood vessels, or structures of the eye) Administer pain relief as needed.
  - Observe horse for signs of neurological disorders.
- **Severe** – (bony structures or major blood vessels involved) Place horse in stall if it is able to walk. Contact VMTH Field Service immediately.
  - If horse is harmful to people remove all other animals from area as safely as possible and try to keep animal calm. Do not enter enclosure.
  - If animal becomes neurological, is unable to stand, is paralyzed, or becomes a permanent danger to itself, other animals, or humans it will be euthanized immediately to avoid suffering.

### **Eye Injuries:**

- **Mild** – (Irritation visible, weepy, squinting, no obvious trauma present) Place horse in stall overnight to reduce dust, debris, and sunlight that may irritate eye further. If weeping and squinting persists overnight contact VMTH Field Service for examination.
- **Severe** – (major trauma to structures on or surrounding the eye, rupture of eye itself) Contact VMTH Field Service immediately.
  - Move horse into a stall and try to keep calm until ambulatory service arrives.

## Routine Health Care:

### Vaccinations:

- **Stallions and Non-gestating Mares:** Vaccinate for WNV (Ft. Dodge, intramuscularly), 4-way (Ft. Dodge Equiloid Innovator, intramuscularly) in May. Vaccinate for Rhinopneumonitis and Flu (Ft. Dodge Fluvac Innovator, intramuscularly) in March and September.
- **Gestating mares:** Vaccinate for Rhinopneumonitis (Ft. Dodge Pneumabort-K + 1b intramuscularly) in month 5, 7, and 9 of gestation. Vaccinate with 4-way (Ft. Dodge Equiloid Innovator) and WNV (Ft. Dodge) in month ten of gestation and deworm with ivermectin (Lextron Animal Health).
- **Yearlings:** Vaccinated according to ongoing research.
  - Should they not be on a research project they will be vaccinated for Rhinopneumonitis and the Flu (Ft. Dodge Fluvac Innovator, intramuscularly) in March.
- **Weanlings:** Vaccinated according to ongoing research.
  - Should the animal not be on a research project they will be vaccinated for West Nile Virus (Ft. Dodge, intramuscularly) and 4-way (Ft. Dodge Equiloid Innovator, intramuscularly), and Rabies (Ft. Dodge, intramuscularly) at 6 months of age. They will also receive vaccinations for Rhinopneumonitis and the Flu (Ft. Dodge Fluvac Innovator, intramuscularly) in September of their first year of life.
  - Weanlings will also be vaccinated for tetanus at 5 months of age (Ft. Dodge Tetanus Toxoid, intramuscularly).
- **Client Horses:** All client mares are required to have been dewormed within 6 weeks of arrival. They must also be current on their vaccinations for West Nile Virus and Encephalomyelitis.

### Hoof Care:

- **Weanlings** – trimming begins at 5 months of age (by a private farrier) if no severe conformational abnormalities are present. Weanlings are then trimmed every 8 weeks until sold at auction as yearlings.
- **Yearlings** – trimmed every eight weeks by private farrier. No shoes are placed on yearlings.

- **Broodmares & Stallions** – Broodmares and stallions are trimmed every 8 weeks by the Pacific Coast Horse Shoeing School.
  - Any corrective shoeing or exceptions (i.e. hoof abscesses, pedal osteitis) performed by private farrier every 8 weeks or as necessary

#### **Castration:**

- Colts are castrated at approximately 9 months of age VMTH Field Service students with resident veterinarian.

#### **Dental Care:**

- All adult horses shall have their teeth floated once a year (or as needed) by VMTH.
- Tooth root abscesses shall be identified via examination by VMTH Field Service and treated accordingly.

#### **Breeding Health Care:**

##### **Pre-parturition Care of the Broodmare:**

- Mares will be vaccinated for Rhinopneumonitis in the 5<sup>th</sup>, 7<sup>th</sup>, and 9<sup>th</sup> month of gestation.
- Mares will be vaccinated for Western and Eastern Encephalomyelitis, Flu, West Nile Virus, Tetanus, and Rabies in the 10<sup>th</sup> month of gestation.
- Mare carrying mules should be tested for anti-donkey 2 weeks prior to their due date.
- If the mare is positive for anti-donkey the mule must be muzzled post foaling and given an alternative source of colostrum.
- The nutrient intake of the broodmare will be increased in the 9<sup>th</sup> month of gestation.
- Two weeks prior to the due date the mare will be moved into one of the two foaling stalls (#19 or #20).
- Stalls shall be bedded with a minimum of 1 ½ bales of straw for foaling.
- Foaling stalls shall be stripped and bleached in between each mare.
- Colostrum testing will be conducted daily using the Predict-A-Foal® kit or FoalWatch® Kit to determine probability of foaling within the next 24 hours.
- Mares will be placed under 24 hour observation when wax forms at the ends of the teats or the colostrum tests indicated that there is a 75% chance of foaling within the next 24 hours.
- Students will observe mares from the student lounge using the web camera.

- A parturition record will be kept on every mare and can be found in the black record book in the student lounge.
- If there is a major complication during foaling the VMTH Reproduction Service will be contacted immediately.
- Every attempt should be made to keep the mare and foal calm.
- No one shall enter the foaling stall unless there are complications such as a malpresentation or red bag.
- Mare should be allowed to foal undisturbed and should be allowed to bond the foal.

### **Parturition Care of the Mare and Foal:**

- **Malpresentation:** If a foal is not presenting normally the situation shall be assessed by Horse Barn personnel to determine the method of presentation.
  - If the foal is presenting in the breach or transverse position VMTH Reproduction Services shall be contacted immediately.
  - If the foal is experiencing an elbow lock or the failure of a front limb extension the Horse Barn personnel shall correct the position and assist delivery.
- **Red Bag/Pre-mature Placental Separation:** A red bag shall be evident by the appearance of a bright red sac from the vaginal during delivery.
  - Should the placenta prematurely separate the attending Horse Barn personnel shall intervene immediately and break open the chorioallantois to expose the foal.
  - The personnel shall then assist in rapid delivery of the foal and contact VMTH Field Service for immediate examination of the foal for oxygen deprivation or long term complications.

### **Post Parturition Care of the Mare:**

- The mare should be observed for passage of the placenta within 3 hours of the birth of the foal.
  - Should the placenta be retained VMTH Reproduction Services should be contacted.
- Post parturition the exposed portion of the placenta should be placed in a knot to prevent the mare from tearing it by stepping on it.
- The placenta should be observed for color and continuity.
  - Particular attention should be made to the tip of the non-pregnant horn.
  - Should a portion of the placenta be retained VMTH Reproduction Services should be contacted immediately.
- Mare and foal should be allowed and to bond and observed for signs of rejection.

- Should the mare become combative toward the foal it should be removed immediately and every attempt should be made to find the foal a nurse maid.
- Mare should be monitored for signs of colic post foaling.
  - Should the mare experience intestinal discomfort steps for treating colic will be followed.
- A portion of the mare's colostrum will be stripped and frozen in the bank to provide a colostrum source for mules and orphaned/abandoned foals.
- If the mare receives trauma to the cervix or vaginal canal which causes severe bleeding, scarring, or mutilation to the rectum or vaginal VMTH Reproduction Services shall be called to repair trauma.
  - If the trauma is mild than it shall be treated by Horse Barn personnel using antibiotics and pain relievers as appropriate.
- The mare shall be ultrasounded by Horse Barn personnel 7 days post foaling to ensure removal of all lochia from uterus.

### **Post Parturition Care of the Foal:**

- Student should observe and record time of birth, time of first attempt to stand, and time of first nursing.
- The nostrils should be wiped clean and the mucus should be removed so that the foal can breathe easily.
  - Care should be taken as the mare may be combative to protect her foal.
- The student should then exit the stall until the foal has successfully stood for the first time.
- The foal's umbilical stump should be dipped in a dilute solution of chlorhexadine (.5%).
  - The umbilical stump should then be dipped 2-3 times a day for the first 2-3 days of life. A record of umbilical care shall remain on the stall door.
- The foal's vital signs should be monitored and recorded in the black record book daily for the first 5 days of life.
- Three days after birth the mare and foal may be turned out into the breeding shed for controlled exercise.
- Five days after birth the mare and foal will be placed in the arena with their future pen mates to observe interactions.
  - If mares are extremely hostile to one another or to the foals these horse should not be housed together.
  - After the initial meeting mares and foals may be placed in a pen together.
- If there are any health concerns post foaling the barn manager should be notified immediately.
  - Should the problem be severe of life threatening VMTH should be contacted.
- Diarrhea
  - Foal heat diarrhea can be expected 7-10 days of life.
  - Apply diaper cream and clean area once a day to decrease irritation.

- If diarrhea is yellow or orange in color and has a strong odor it is milk scours and foal should be placed on IV fluids to prevent dehydration. VMTH Field Service should be contacted for further treatment.

*\*VMTH Field Service shall be contacted should a foal show abnormal health signs such as frequent rolling in discomfort, yellow tint to the mucus membranes, lack of appetite, urine or puss leaking from the umbilicus, elevated temperature (above 102 °F), persistent diarrhea, diarrhea that is abnormal in color, or extreme limb deformities.*

### **Neonatal Isoerythrolysis:**

- **Mules** – Shall be administered colostrum from the Horse Barn’s colostrum bank that has tested negative for anti-donkey factor.
  - The mule will be muzzled and feed colostrum via a bottle every hour for the first 18 hours of life.
  - The mare will be milked out onto the ground every hour.
  - After 18 hours the milk will be tested to ensure that all colostrum is removed and the foal will be allowed to nurse normally.
- **Horses** – If condition is noticed after birth and foal has nursed VMTH Field Service will be contacted immediately for treatment.
  - If condition is found via blood testing prior to birth the foal will be muzzled and shall be feed an alternative source of colostrum from a mare with the appropriate blood type for the first 18 hours of life.
  - The mare shall be milked out onto the ground for the first 18 hours.
  - After 18 hours the mile will be tested to ensure all colostrum has been removed and the foal will be allowed to nurse normally.

## **Euthanasia**

### **Barbituate Overdose:**

- Horses euthanized using a barbiturate overdose will be given 10 ml/100 lbs BW (39 gm of pentobarbital plus 5 gm phenyton/ 100 ml/horse) of Buthanasia D by a VMTH veterinarian.

### **Captive Bolt & Exsanguination:**

- Horses shall be euthanized via captive bolt and exsanguination by a qualified, trained individual in a safe environment.