

HorseReport

SUMMER 2024



Equine Colic

THANK YOU TO OUR
COLLABORATOR



Dr. Julie E. Dechant, DVM, MS, DACVS and DACVECC, is a professor in the Department of Surgical and Radiological Sciences and a clinician in the Equine Surgical Emergency and Critical Care Service. She is the assistant director of the UC Davis Large Animal Clinic. Dechant graduated from the University of Saskatchewan in 1996 and completed a Large Animal Surgery Residency at Colorado State University in 2000. She received Faculty Teaching Awards from the School of Veterinary Medicine (2015) and UC Davis (2016) and the Zoetis Distinguished Veterinary Teacher Award for UC Davis (2023). Her research interests are related to improving the diagnosis and care of large animal emergency and critical care patients.

DIRECTOR'S
LETTER



Summer is a time of transition at UC Davis. We say farewell to graduating students, and welcome many into the equine veterinary profession. We wish them well in the next stages of their careers!

For the summer Horse Report, we chose a big topic - colic. Colic is a word that gives pause to even the most seasoned equestrians. One of the most common equine health conditions, it is of significant concern for owners and veterinarians.

My own horse, Kaiden, required two colic surgeries when he was 8 years old. He had an epiploic foramen entrapment, in which the liver traps the small intestine. He recovered from surgery and had another episode less than 24 hours later. We took him BACK to surgery and he received a “bypass,” so he now has a two-lane highway between his small intestine and colon. I was a veterinary resident at UC Davis at the time and fortunately had insurance, so I was able to cover the costs. Kaiden went on to compete at the Preliminary level of 3-day eventing until he was 17 years old. He is now 25 and still competing at the lower levels. Pursuing colic surgery was among the best decisions I have ever made.

Few know more about colic than UC Davis equine surgeon Dr. Julie Dechant, our collaborator on this issue. She is an expert on colic treatment, surgery, and prevention, and is passionate about owner education on this topic. We thank her for sharing her expertise.

We hope this issue provides clarification about equine colic and enables you to work closely with your veterinarian should you encounter this issue in your horses.

Best wishes,

Carrie J. Finno, DVM, Ph.D., Diplomate ACVIM
CEH Director



COLIC SURGERY
for a Special CEH Teaching Herd Horse

Center for Equine Health Teaching Herd horse

Driftintwistin Smoke, a 14-year-old Quarter Horse gelding, was prone to colic. Initially, medical management easily resolved the episodes. However, subsequent colics were harder to treat. The suspected cause was recurrent displacement of the large colon, a serious condition that can quickly cause painful blockages that lead to colic.

Although UC Davis veterinarians were able to treat the colic episodes successfully, it was necessary to find a more permanent solution. Since his arrival in 2016, Driftin has been a vital part of the veterinary medicine teaching program, so equine surgeons at the UC Davis veterinary hospital (who all know and love him) were eager to come up with a way to improve his long-term quality of life.

Thanks to support from the Teaching Herd Support Fund, which enables care that goes beyond daily management and routine treatments, the surgery team was able to perform a procedure, called a colopexy, which attaches a portion of the intestines to the body wall to keep it in place. In addition to fixing Driftin's

condition, this surgery was an important and unique learning opportunity for veterinary students and residents.

Driftin came through the surgery with no complications and recovered well. He was restricted to stall rest for one month, with hand walks twice daily for 10 minutes. During this time, he was fed grass and hay pellets to give his gastrointestinal tract time to adjust. As his recovery progressed, he had access to a small run off his stall, and later to a larger paddock. He was able to return to his herd group three months after surgery.

Driftin's friendly, willing personality makes him a favorite choice for teaching, research, and outreach efforts at the center. We are grateful to all of the veterinarians and staff that provided outstanding care for this special horse, giving him the best chance to continue to live a happy, healthy life at CEH.

Help us provide advanced care to horses like Driftin by giving to the Teaching Herd Support Fund today at give.ucdavis.edu/go/TeachingHerdFund.

COLIC: A Pain in the Gut

Colic is a top concern for owners and veterinarians. Although it is common, our understanding of colic is complicated by the fact that it is not a simple disease, but a syndrome of clinical signs that encompasses multiple risk factors.

Abdominal pain in horses ranges from mild and easy to treat (or resolves on its own) to severe and requiring surgery, generally falling into one of four categories.

General Types of Colic

Intestinal dysfunction - This type of colic usually responds to medical management and has a good prognosis. It includes:

- **Gas colic** - Buildup of gas in the intestinal tract causes abdominal pain as the gas stretches the intestines. Causes include dietary changes, lack of roughage, and intestinal parasites.
- **Spasmodic colic** - Abnormal contraction of the intestines due to buildup of gas or other causes can create painful spasms.
- **Simple impactions** - Impactions occur when feed, sand, etc. lodge in the colon, making it difficult for the horse to pass manure.

Intestinal obstruction - Blockages can cause severe pain and often require surgery. These can be physical blockages, such as with a foreign object, or functional in which the flow of food is impaired due to lack of normal movement in the intestines. These include:

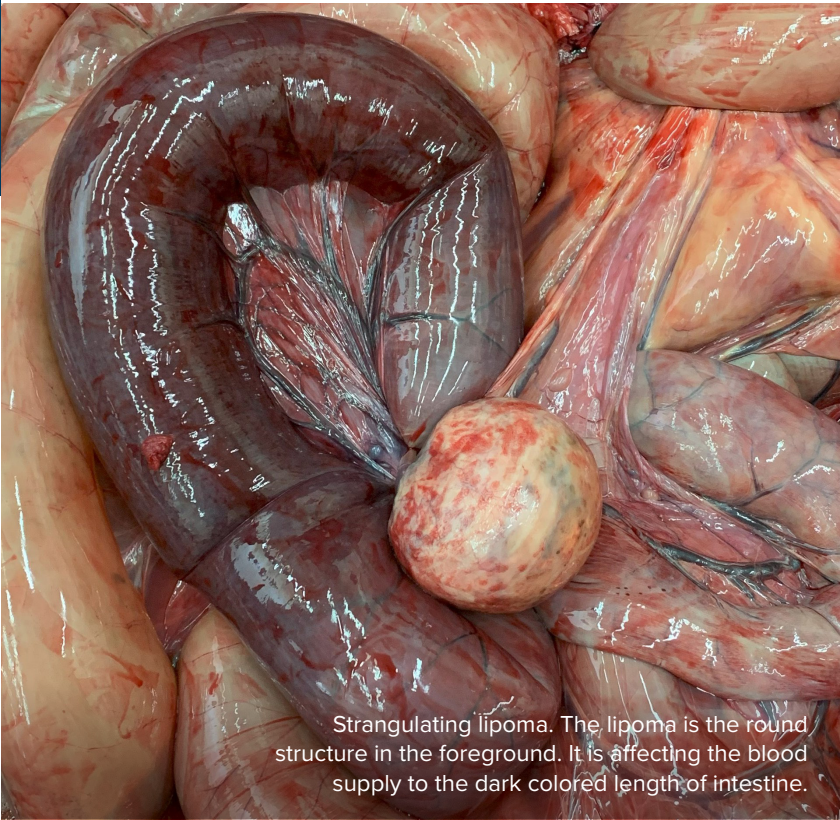
- **Enteroliths** - Enteroliths are mineral accumulations around a foreign object (pebble, bailing twine, etc.) that form stones inside the large colon where they can remain until they move and cause an obstruction. Causes include certain diets, breed predisposition, and management practices. The only treatment is surgical removal. Prognosis depends on the size of the stones, their location, and when they are detected.
- **Displacements** - The equine intestine ranges from 50 to 70 feet in length and large sections are not anchored, or are only attached by small lengths of tissue, so they can move to abnormal locations. The prognosis for horses that undergo surgery is generally good.

Intestinal strangulation - Strangling colics result from interruption of the blood supply to the gastrointestinal tract. They are life threatening and always require surgery. These include:

- **Lipomas** - Lipomas are benign fatty tumors connected to the abdomen by a length of tissue. They can loop around the intestine and cut off the blood supply (“strangling lipomas”). Lipomas are prevalent in horses over 15 years of age (but can be seen in horses as young as 8), and in breeds such as Arabians, American Quarter Horses, and ponies. Once clinical signs appear, intestinal tissue has already started dying, so identifying the problem early and getting the horse to surgery quickly improves the outcome.
- **Torsion/volvulus** (“twisted gut”) - Since equine intestines are so long, sections can become twisted and cut off the blood supply. The degree of torsion significantly affects the prognosis, with horses exhibiting intestinal twisting of less than 180° having a good prognosis, horses with greater than 270° torsion having a poor prognosis, and those in between having a fair prognosis.



Enteroliths can cause obstructions.



Strangling lipoma. The lipoma is the round structure in the foreground. It is affecting the blood supply to the dark colored length of intestine.

Other Intestinal Problems

Additional causes of colic that need intensive medical treatment include:

- **Enteritis/colitis** (diarrhea) - Enteritis is inflammation of the gut caused by bacteria or viruses. Colitis results from inflammation of the inner lining of the colon and can have infectious or non-infectious causes.
- **Peritonitis** - Inflammation of the inner lining of the abdominal cavity (peritoneum) can be a primary disease, or secondary to infectious or noninfectious agents.
- **Neoplasia** (cancer) - Intestinal tumors in horses are rare. Some grow locally, whereas others can metastasize throughout the body. The prognosis is generally poor.
- **Poisonous/toxic plants** - Ingestion of plant toxins can cause colic, but horses usually need to consume high volumes of the plant to become affected.

RISK FACTORS FOR COLIC

Risk factor	Colic problem
> 15 years of age	Strangling small intestinal lesions
History of cribbing	Epiploic foramen entrapment
Pregnant mare or recent foaling	Large colon volvulus, uterine torsion/tear, internal hemorrhage
Fed >50% alfalfa or has access to sand	Enteroliths, sand colic
Recent medications (antibiotics/NSAIDs)	Colitis, Non-steroidal anti-inflammatory drug (NSAID) toxicity
Previous abdominal surgery	Adhesions
Recent stall confinement	Impaction colic

Horses are predisposed to colic due to their unique gastrointestinal anatomy, but risk factors are known. Some can be modified, but even the most well managed horses can colic.

NOT MODIFIABLE

- **Breed** - Some breeds may be at higher risk for certain types of colic.
- **Age** - Certain age groups may be more prone to particular types of colic.
- **Height** - Large horses may be at risk of dorsal displacement of the large colon; small colon impaction is often reported in ponies.
- **Weather** - Weather changes may affect movement and water consumption.

MODIFIABLE

- **Exercise and Housing** - Provide turnout, maximize water intake, and maintain a routine schedule.
- **Feeding** - Feed small amounts at frequent intervals, choose alternatives to concentrated feeds, make any feed changes slowly, and minimize feeding errors.
- **Health management** - Ensure routine veterinary care (including deworming and dental care).

OTHER RISK FACTORS

- **Cribbing/windsucking** - Stereotypies have been significantly associated with colic.
- **Travel** - Changes in management and stress due to travel can result in decreased gastrointestinal mobility, which can cause colic.

COLIC HAPPENS:

What You Can Do Before, During, and After a Colic

Most equestrians will encounter a colicking horse at some point. Whether the episode is mild or severe, being able to recognize the signs of colic and react quickly and appropriately may be vital. There are things that you can do before, during, and after a horse colics to maximize the chances for a successful outcome.

What to Do Before a Horse Colics

Since colic is not a matter of if, but when, it is best to be prepared. Here are some important things you can do before a horse colics:

- **Know how to assess vital signs.** Monitor your horse's temperature, heart and respiratory rates, gut sounds, capillary refill times, and mucous membranes on a regular basis so you know what is normal and can recognize when values change, which can indicate a problem. (See Horse Vital Signs figure.)
- **Keep emergency numbers handy.** Post your veterinarian's contact information in the barn and other common areas for easy reference and have a backup plan if they are unavailable. If your horse is insured, have the contact information for the insurance company and policy number readily available.
- **Plan for emergency transportation.** Make sure that you have access to a truck and trailer, that your horse can be loaded easily and that you have accurate directions to a referral hospital.
- **Know your limits.** Understand your insurance policy and consider financial limitations or practical concerns so you can make informed decisions about treatment and subsequent care.

What to Do When a Horse Colics

Once you recognize that a horse is colicking, you should:

1. **Call a veterinarian.** Do not give any medications unless directed by the veterinarian.
2. **Take care of the horse while you wait for the vet to arrive.**
 - a. Remove any feed.
 - b. Provide access to small amounts of water.
 - c. Move the horse to a safe place, if necessary.
 - d. Walk the horse for brief intervals (if safe for you and the horse).
3. **Observe and record details.**
 - a. Monitor the horse's vital signs if it is safe to do so.
 - b. Monitor manure production.
 - c. Take note of changes in colic signs.
 - d. Follow any specific instructions from the veterinarian.
4. **Gather the horse's health records, including:**
 - a. Deworming history
 - b. Current medications
 - c. Notes on any recent health changes
 - d. Dietary history
 - e. Information on prior medical problems or surgeries
 - f. Insurance information



Your veterinarian may take a blood sample to perform diagnostic tests.

What to Expect During a Colic Exam

Your veterinarian will perform an initial examination to evaluate your horse. This may be followed by advanced diagnostics, which may require a trip to the veterinary clinic or referral hospital. During the examination, the veterinarian may:

- Review what you have observed.
- Perform a physical examination on the horse.
- Pass a hollow plastic tube up the horse's nose and into the stomach (nasogastric intubation) to identify abnormal contents and administer treatment and fluids.
- Perform a rectal examination.
- Take blood samples and run diagnostic tests.
- Perform an abdominal ultrasound.
- Perform an abdominocentesis to collect abdominal fluid for evaluation.*
- Take abdominal radiographs to identify foreign objects such as sand or enteroliths.*
- Determine a treatment plan.

*Usually performed at a referral hospital.

What to Do After a Horse Colics

The recovery process varies for individual horses. Fortunately, more than 75% of horses discharged from the hospital following colic surgery are able to return to similar or higher levels of performance as before surgery, including racing and other high-level athletic activities.

Here are some steps you can take to facilitate post-colic recovery and maximize the chances of a horse successfully returning to pre-colic performance levels:

- Follow the discharge instructions from your veterinarian. This may include directions for stall rest and hand walking, as well as refeeding instructions.
- Monitor the horse's vital signs, water intake, and manure, and take note of any signs of discomfort. Horses that have colicked once are at greater risk for future colic episodes.
- If the horse had surgery, monitor the surgery site for any signs of infection.

How to Recognize Colic and When to C-A-L-L V-E-T

Clinical Signs - pawing, flank watching, kicking at belly, rolling

Agitated - sweating, restless, up and down

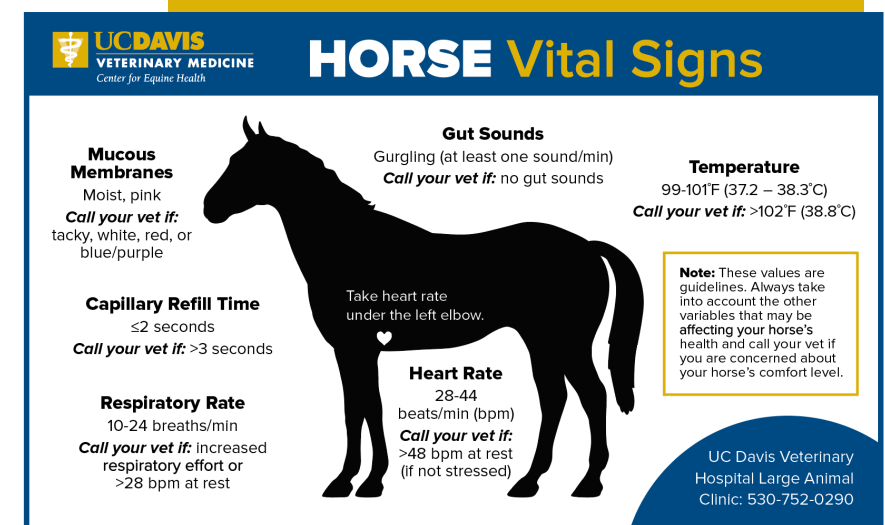
Lack of manure

Loose or dry manure

Vital signs - increased heart rate, reduced/absent gut sounds, changes in gum color, breathing fast, abrasions over the eyes

Eating less or not eating

Tired - dull, depressed, lethargic



Normal equine vital signs

Here We Go Again: CASES OF RECURRENT COLIC

Perhaps one of the only things worse than having a horse colic is having a horse colic again. Recurrent colic refers to repeated episodes of abdominal discomfort that occur over weeks to years, with at least 48 hours between episodes. Although common, recurrent colic can be frustrating as it is often challenging to diagnose the underlying cause since clinical signs are usually mild.

Research has shown that horses with a history of colic are at greater risk for further episodes than horses that have never colicked. Approximately one third of horses will colic again within one year of a colic episode. Some will colic multiple times.

Causes of Recurrent Colic

Unfortunately, there is a seemingly limitless list of causes for recurrent colic. It often occurs due to the continued

presence of risk factors and individual predispositions. Some horses have sensitive intestinal tracts, are prone to “indigestion” or gas accumulation, or are predisposed to mild displacements. It is also important to consider underlying causes such as intestinal parasites, gastric ulcers, and intestinal abnormalities such as abdominal hernias.

We know that horses who have previously undergone colic surgery are at a greater risk for recurrent colic. This can be due to intestinal scarring and fibrous adhesions that can block feed material in the digestive tract, decreased blood flow (ischemia), intestinal trauma, or infection.

Aside from previous colic surgery and metabolic abnormalities, the most common reasons for repetitive colic are related to management. Risk factors for recurrent colic include stereotypies such as cribbing, wind sucking, or

weaving, known dental problems, decreased time at pasture, previous abdominal surgery, and recent changes in diet. Other considerations include stress, sand accumulation, consumption of foreign objects, tumors, and enteroliths.

Management of Recurrent Colic

For cases with a clear, diagnosed cause, treatment is often straightforward. However, many cases are challenging to treat.

Management changes may be needed for horses that exhibit recurrent colic. Depending on underlying causes and known

risk factors, these may include increased time in pasture, administering deworming treatments, and feeding complete feed/hay pellets.

Although nutrition may contribute to a predisposition to recurrent colic in some horses, evidence for nutritional strategies to prevent colic is limited. Supplements such as prebiotics, probiotics, mashes, and special diets have not been scientifically shown to prevent colic or reduce recurrence of colic episodes.

Covering the Cost of Colic

Treatment for colic can be expensive, and costs can accumulate quickly. Insurance policies and colic coverage programs provided by dietary supplement companies are designed to ease the financial burden and provide owners with peace of mind. However, they are all slightly different, so it is important to know what is covered before you find yourself at the veterinary hospital.

The main distinction to keep in mind is medical versus surgical treatment for colic. It is important to note that most horses treated for colic do not go to surgery. Those that do, however, incur the highest costs.

The primary colic coverage offered by equine supplement companies only reimburses costs associated with surgery (up to \$10,000 for one and \$15,000 for another), not medical treatment. One company offers reimbursement for surgical or medical colic up to \$10,000. These programs require regular qualifying orders of specific supplement products, which may be expensive, and have annual veterinary wellness requirements. They are easy to apply to and coverage is generally hard to lose once enrolled. However, it is important to be aware of limitations on coverage, lifetime benefits, and restrictions, especially for horses that have colicked previously. Benefits may be used on their own, or to augment existing insurance. Note that since these are reimbursement programs and paperwork is reviewed after treatment, it is not possible to know ahead of time if your claim will be approved.

Major medical and colic insurance policies may cover both surgical and medical colic. These policies can have deductibles, co-pays, annual premiums, and coverage limits. Age restrictions and other exclusions may apply. Insurance companies may deduct supplement program payments from their claim responsibility.

Whichever coverage you choose, have copies of your policies with you if you bring your horse in to the hospital to ensure the most accurate information so you can work with the clinicians to determine the best approach for your situation.



Some programs offer coverage for colic surgery, but exclude medical treatment for colic.



A horse cribbing on a fence. Stereotypies such as cribbing are known risk factors for colic.

10 THINGS

You Might Not Know About Equine Colic

“Colic” is an unwelcome word in the equine world. The majority of equestrians have at least one colic story, with outcomes ranging from good to gut wrenching. Since colic is common and can have serious implications, it is an often-discussed topic, complete with plenty of anecdotal evidence, myths, and unscientific advice. We teamed up with Julie Dechant, DVM, MS, DACVS, DACVECC, professor of equine surgery and assistant director of the UC Davis veterinary hospital’s Large Animal Clinic to provide some clarity on equine colic.

1 Colic is a common cause of equine mortality. It is the most common cause of death in horses that are 1 to 20 years of age and the second most common cause for horses older than 20 years of age (USDA APHIS NAHMS 2015). Colic is also one of the most common emergency veterinary calls for both ambulatory practices and referral hospitals (Gillen and Archer 2023).

2 The severity of clinical signs does not necessarily correlate to the severity of the colic. Older horses, in particular, may be stoic, making it difficult to evaluate pain levels. Medications, whether routine or administered to treat the clinical signs, can also mask pain responses.



It is okay to walk a horse that is colicking if it is safe for you and the horse.

3 It is okay to walk a horse when it is colicking. Walking does promote intestinal motility, so it can be helpful. However, do not walk a horse to exhaustion. If the horse is not walking comfortably, do not continue. Also, note that a horse that is already uncomfortable due to lay up or rehabilitation (and hence is at a higher risk for colic) might not be able to walk due to the injury or condition. Be sure to consider your safety, as well as the safety of the horse, when deciding whether to walk a horse or not.

4 It is okay to let a colicking horse lay down, if they are quiet. This will vary by situation, as it is important that the horse does not thrash around and potentially injure itself. Rolling will not cause twisting of the horse’s intestines, as is commonly believed. As with walking, do your best to ensure that the situation is safe for you and the horse.

5 It may not be possible to determine the cause of a colic and not all causes are preventable. This is especially true for recurrent colics. Despite exhaustive diagnostics, answers may remain elusive. Employing appropriate management practices is encouraged to reduce the risk of colic, but even known causes of colic are not always preventable.

6 Transport to a referral hospital does not always mean that your horse must have colic surgery. At the UC Davis veterinary hospital, approximately 25% of cases brought in for colic end up having surgery. It is important to note that this is likely a high number relative to other clinics since the Large Animal Clinic often receives the more complicated colic cases. Globally, the average is less than 10% (Proudman 1992).

7 Geriatric horses are able to recover from colic surgery as well as non-geriatric horses. Although horses that are 20 years of age and older have a higher incidence of strangulating lesions and are often euthanized without a surgical option, those that do go to surgery survive and recover as well as younger horses with similar lesions. Age should not be the sole determinant in declining surgical intervention.

8 Advances in surgery and anesthesia have contributed to successful colic surgery outcomes. Facilities such as the UC Davis veterinary hospital have board-certified anesthesiologists that are available to provide dedicated expertise during colic surgeries. Advances in methods of assisted recovery and anesthetic techniques are also available to help horses recover safely from surgery.

9 Turnout is known to reduce the risk of colic. Horses confined to stalls are at a higher risk for colic. Even if your horses get turnout at home, this is important to remember when you are traveling and competing. Take your horse(s) for walks during horse shows, especially if you only have a few classes, so they do not spend too much time standing in the stall. If your horse is on stall rest for an injury or illness, talk with your veterinarian about the possibility of hand walking (with sedation if needed) to reduce the risk of colic.

10 Although cases of colic appear to increase when the weather changes, research studies to date have not identified an association. Anecdotally, horses appear to be at an increased risk for colic when the temperature changes from hot to cold. This may be because horses do not drink as much water when it is cold, which can affect gut motility. In these situations, avoid unnecessary stress on your horse such as trailering. Bran mashes may be offered in moderation. Increase your horse’s time in turnout, if possible, and consider adding some salt to their grain to encourage them to drink more.



Ensuring adequate turnout reduces the risk of colic.

<https://ceh.vetmed.ucdavis.edu>

Mail ID 1415
Center for Equine Health
School of Veterinary Medicine
University of California
One Shields Avenue
Davis, CA 95616-8589

The *Horse Report* is published by the University of California, Davis, School of Veterinary Medicine: Mark Stetter, dean; Carrie Finno, CEH director; Tom Hinds, director strategic planning and communications; Amy Young, editor; Rob Riedel, designer. The Center for Equine Health is supported with funds provided by the State of California Pari-Mutuel Fund and contributions from private donors.

The University of California does not discriminate in any of its policies, procedures or practices. The university is an affirmative action/equal opportunity employer.



Help us go green! E-versions of the CEH *Horse Report* are now available – to start receiving your copies via e-mail (and other SVM electronic publications), visit www.vetmed.ucdavis.edu/go/subscribe

UC DAVIS EQUINE SURGICAL EMERGENCY AND CRITICAL CARE SERVICE

The Equine Surgical Emergency and Critical Care Service at the UC Davis veterinary hospital provides 24-hour access to specialized emergency surgery and intensive care management of colic, trauma, and orthopedic emergencies. The integration of experienced and knowledgeable clinicians, veterinary technicians and students in a fully equipped and technologically advanced facility enables a high standard of care for critically ill horses.

Board-certified surgeons direct and supervise the care of emergency and critical care patients. Resident veterinarians and veterinary students are part of the cooperative effort involved in management of these patients. A team of certified veterinary technicians dedicated to the Large Animal Intensive Care Unit provides constant supervision and critical care monitoring for hospitalized horses 24 hours a day.

A fully staffed surgical team, including board-certified surgeons and resident veterinarians, is on stand-by 24/7/365 for surgical emergencies. Board-certified anesthesiologists provide optimal anesthetic management of these critical surgical patients. Specialists in allied disciplines, such as internal medicine and radiology, are always available to assist in the diagnosis and management of multi-system disease or complicated conditions. Diagnostic imaging is available through the Diagnostic Imaging Service and the Large Animal Ultrasound Unit; blood typing and cross matching is performed in the hematology laboratory; and a full-service diagnostic laboratory provides in-depth clinicopathological assessments.

Decisions regarding the surgical approaches and techniques to be used, either traditional or minimally invasive, are always made with the goal of optimizing patient outcome.

