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Inside

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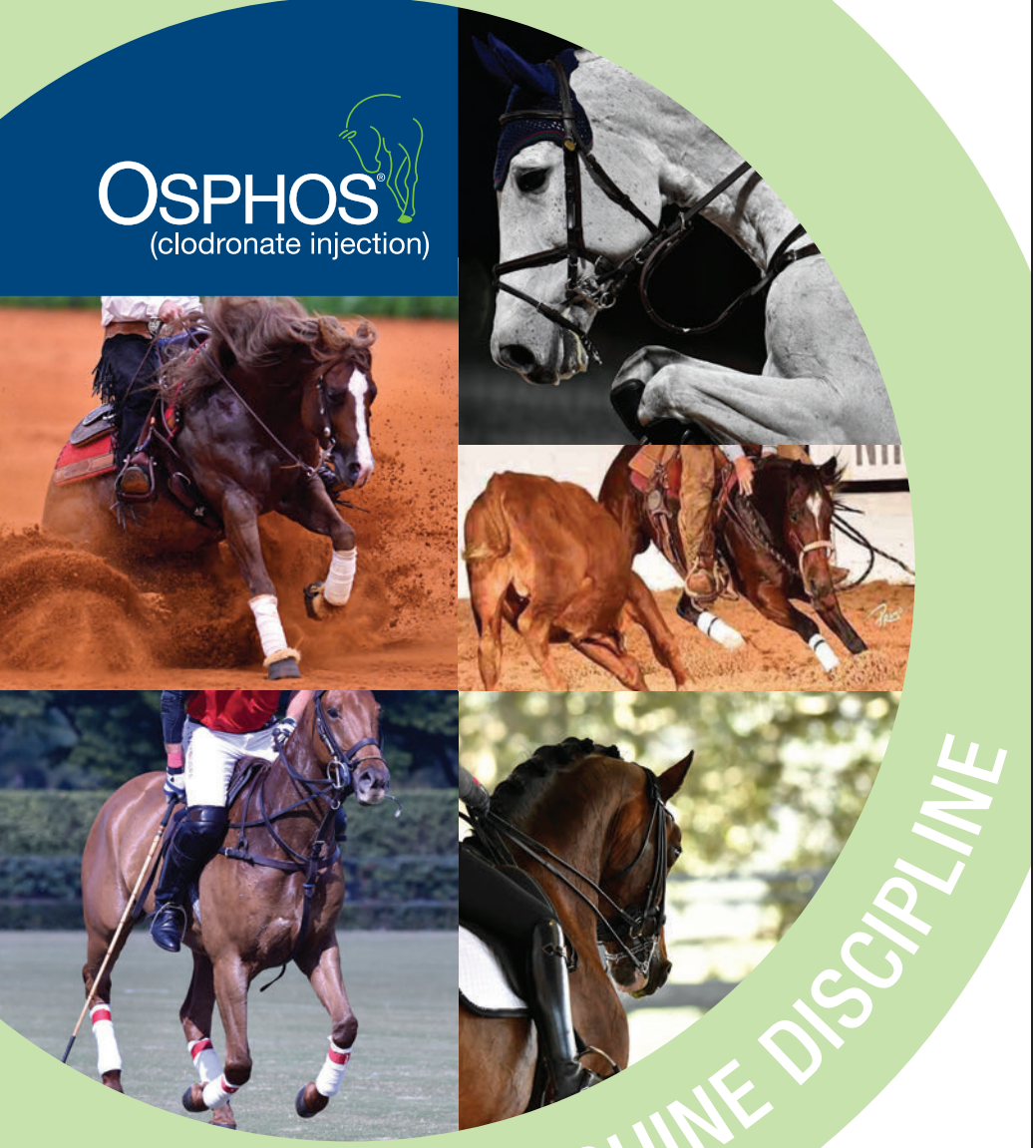
(clodronate injection)



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CAUTION: Federal law restricts this drug to use by or on the order of licensed veterinarian.

* Freedom of Information Summary, Original New Animal Drug Application, approved by FDA under NADA # 141-427, for OSPHOS. April 28, 2014.

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CONTRAINDICATIONS: Horses with hypersensitivity to clodronate disodium should not receive OSPHOS. Do not use in horses with impaired renal function or with a history of renal disease.

WARNINGS: Do not use in horses intended for human consumption.

HUMAN WARNINGS: Not for human use. Keep this and all drugs out of the reach of children. Consult a physician in case of accidental human exposure.

PRECAUTIONS: OSPHOS has been associated with renal toxicity. Concurrent administration of other potentially nephrotoxic drugs should be approached with caution and renal function should be monitored. Use of bisphosphonates in patients with conditions or diseases affecting renal function is not recommended. Horses should be well-hydrated prior to and after the administration of OSPHOS due to the potential for adverse renal events. Water intake and urine output should be monitored for 3-5 days post-treatment and any changes from baseline should elicit further evaluation. As a class, bisphosphonates may be associated with gastrointestinal and renal toxicity. Sensitivity to drug associated adverse reactions varies with the individual patient. Renal and gastrointestinal adverse reactions may be associated with plasma concentrations of the drug. Bisphosphonates are excreted by the kidney; therefore, conditions causing renal impairment may increase plasma bisphosphonate concentrations resulting in an increased risk for adverse reactions. Concurrent administration of other potentially nephrotoxic drugs should be approached with caution and renal function should be monitored. Use of bisphosphonates in patients with conditions or diseases affecting renal function is not recommended. Administration of bisphosphonates has been associated with abdominal pain (colic), discomfort, and agitation in horses. Clinical signs usually occur shortly after drug administration and may be associated with alterations in intestinal motility. In horses treated with OSPHOS these clinical signs usually began within 2 hours of treatment. Horses should be monitored for at least 2 hours following administration of OSPHOS.

Bisphosphonates affect plasma concentrations of some minerals and electrolytes such as calcium, magnesium and potassium, immediately post-treatment, with effects lasting up to several hours. Caution should be used when administering bisphosphonates to horses with conditions affecting mineral or electrolyte homeostasis (e.g. hyperkalemic periodic paralysis, hypocalcemia, etc.).
The safe use of OSPHOS has not been evaluated in horses less than 4 years of age. The effect of bisphosphonates on the skeleton of growing horses has not been studied; however, bisphosphonates inhibit osteoclast activity which impacts bone turnover and may affect bone growth.

Bisphosphonates should not be used in pregnant or lactating mares, or mares intended for breeding. The safe use of OSPHOS has not been evaluated in breeding horses or pregnant or lactating mares. Bisphosphonates are incorporated into the bone matrix, from where they are gradually released over periods of months to years. The extent of bisphosphonate incorporation into adult bone, and hence, the amount available for release back into the systemic circulation, is directly related to the total dose and duration of bisphosphonate use. Bisphosphonates have been shown to cause fetal developmental abnormalities in laboratory animals. The uptake of bisphosphonates into fetal bone may be greater than into maternal bone creating a possible risk for skeletal or other abnormalities in the fetus. Many drugs, including bisphosphonates, may be excreted in milk and may be absorbed by nursing animals.

Increased bone fragility has been observed in animals treated with bisphosphonates at high doses or for long periods of time. Bisphosphonates inhibit bone resorption and decrease bone turnover which may lead to an inability to repair micro damage within the bone. In humans, atypical femur fractures have been reported in patients on long term bisphosphonate therapy; however, a causal relationship has not been established.

ADVERSE REACTIONS: The most common adverse reactions reported in the field study were clinical signs of discomfort or nervousness, colic and/or pawing. Other signs reported were lip licking, yawning, head shaking, injection site swelling, and hives/pruritus.

POST-APPROVAL EXPERIENCE (December 2018): The following adverse events are based on post-approval adverse drug experience reporting. Not all adverse events are reported to FDA/CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data.

The following adverse events are listed in decreasing order of reporting frequency: renal failure, polyuria, polydipsia, abdominal pain, anorexia, lethargy, hypercalcemia, behavioral disorder, discomfort, hyperkalemia, hyperactivity, recumbency, hyperthermia, injection site reactions, muscle tremor, urticaria, hyperglycemia, and fracture. In some cases, death has been reported as an outcome of the adverse events listed above.

INFORMATION FOR HORSE OWNERS: Owners should be advised to:

- NOT administer NSAIDs.
- Ensure horses have access to adequate water before and after administration of OSPHOS.
- Observe their horse for at least 2 hours post-treatment for signs of colic, agitation, and/or abnormal behavior.
- If a horse appears uncomfortable, nervous, or experiences cramping post-treatment, hand walk the horse for 15 minutes. If signs do not resolve contact the veterinarian.
- Monitor water intake and urine output for 3-5 days post-treatment.
- Contact their veterinarian if the horse displays abnormal clinical signs such as changes in drinking and urination, appetite, and attitude.

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Addressing COVID-19

The COVID-19 pandemic has been compared to 9/11 or "The Great Recession," but in my opinion, the world has not seen something like this in generations, if ever. We have had global pandemics, but they occurred in a world where instant information was unheard of. And today's instant information sometimes leaves us more confused than informed.

In this stressful time, EquiManagement has tried to provide quality information that veterinarians want and need.

The CARES Act

When the CARES Act was passed by Congress, there were many questions about how veterinarians fit into the recovery package assistance programs. EquiManagement teamed with the American Horse Council to create a deep-dive into the Act and how equine veterinary businesses fit into those programs.

You can find the article "The CARES Act and the Veterinary Industry" on EquiManagement.com.

Additional COVID-19-Related Articles

EquiManagement magazine has continued to focus on the science, business and veterinarian welfare issues surrounding the COVID-19 pandemic. And on p. 42 of this issue, you will find the article "Veterinarian-Client Communication During the COVID-19 Crisis." Colleen Best, PhD, DVM, BScH, helps us understand that the way we interact with our clients now will determine whether our businesses can be revitalized when this is over.

We partnered with Merck Animal Health and Amy Grice, VMD, MBA, to bring you the online article "Veterinarian Financial Planning and COVID-19." Grice noted that making financial decisions during the COVID-19 crisis based on actual numbers can help you stay in business.

EquiManagement's Facebook page also has been a repository for COVID-19-related information created by others that is pertinent to the equine veterinary industry.

Daily Vet Life Podcast

Because things are changing so quickly during the COVID-19 pandemic, EquiManagement teamed with Covetrus to launch the Daily Vet Life podcast. This short, five-day-a-week podcast was developed for equine and mixed animal veterinarians and their staffs. It is focused on personal and business topics of importance during the COVID-19 pandemic. If you have missed any episodes of Daily Vet Life, make sure to visit EquiManagement.com for a link to the podcasts, or search for "Daily Vet Life" on your favorite podcast network.

Disease Du Jour Podcast

Merck Animal Health is our 2020 sponsor for EquiManagement's Disease Du Jour podcast. The Disease Du Jour podcast series for equine veterinarians, vet students, vet techs and industry professionals was launched in 2019. It has received rave reviews for its content, which is focused on education for the equine veterinary industry.

Disease Du Jour's podcast Episode 26 with Dr. Scott Weese discusses what veterinarians need to know about COVID-19 and biosecurity.

Episode 23 in February featured information from Dr. Nicola Pusterla of UC Davis on equine coronavirus since veterinarians were receiving questions from horse owners about the difference in the human and animal forms.

Episode 25 covered the Merck/AVMA Veterinarian Wellness Survey results. EM

EquiManagement

Equine Health Network
Group Publisher
Kimberly S. Brown
kbrown@aimmedia.com

EquiManagement Associate
Publisher/Advertising Sales
Michelle Adaway
madaway@aimmedia.com
859-619-8263

Advertising Sales
Tom Brazil
tbrazil@aimmedia.com
805-538-9986

Shelley Partridge
spartridge@aimmedia.com
859-327-7057

EQUINE NETWORK

Senior Editor
Laurel Scott

Creative Director
Philip Cooper

Production Manager
Diane Paolini

Prepress Specialist
Brad Burleson

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AVAILABLE IN PASTE, PELLET AND LIQUID SOLUTION.

By Nancy S. Loving, DVM

Research Links Equine Asthma and Latex

Horses working on artificial surfaces in arenas or on racetracks might be exposed to pollutants that can impact respiratory health. Early research suggested that latex could be one of many allergens that causes severe equine asthma [White, S.J.; Colyer-Moore, M.; Marti, E.; et al. Antigen array for serological diagnosis and novel allergen identification in severe equine asthma. *Scientific Reports* 2019, 9 (1):15170; doi.org/10.1038/s41598-019-51820-7].

The Morris Animal foundation is funding research into this topic.

Equine asthma is a real concern in the horse world, with as many as 14% of horses—no matter the breed—affected in the Northern Hemisphere.

The researchers used a comprehensive IgE microarray to examine which environmental allergens might be present to create an inflammatory response in horses. On blood tests from 138 sporthorses, they tested 384 extracts and proteins of the equine environment. The horses in the study were from the United States, Canada, Switzerland and France, across a wide range of environmental conditions.

A normal array of expected causal allergens were identified: pollen, mold and insect proteins. But what was not expected was to find natural rubber latex as a possible allergen—four of the five significant allergens were, in fact, latex proteins.

The other significant protein identified is derived from *Aspergillus fumigatus*, which is a fungus associated with severe equine asthma.

The study further reported that latex is not just present on artificial training surfaces but also circulates in the air of urban environments, in part as a result of wear on car tires. Natural rubber is a material that is commonly incorporated into arena surfaces to improve locomotion and limit musculoskeletal injury.

Latex has been associated with human respiratory disease. In fact, it is not uncommon for riding instructors to experience lung inflammation and chronic bronchitis, possibly from latex-containing respirable dust in the arena.

Further research is ongoing to identify exposure levels of latex to the horses and the specifics about how latex impacts lung function in latex-sensitive horses. Defining the risk also enables efforts to be taken to limit latex exposure in equine environments.

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A research study found natural rubber latex as a possible allergen to horses. Latex is found in some artificial training surfaces and circulates in urban environments in part as a result of wear of car tires.

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Detomidine as an Intravaginal Sedative

A randomized, crossover, masked experimental design was used to evaluate intravaginal sedation in six adult mares [Seddighi, R.; Knych, K.K.; Cox, K.; et al. Evaluation of sedative effects and pharmacokinetics of detomidine gel administered intravaginally to horses. *Veterinary Anesthesia and Analgesia* Nov 2019, vol. 46, issue 6; pp. 772-779; https://doi.org/10.1016/j.vaa.2019.06.002].

The mares in the study received detomidine either intravenously (10 µg kg-1) or intravaginally (40 µg kg-1). Each mare received both treatments separated by a week washout period. With each treatment, every 15 minutes for four hours the mares were evaluated for level of sedation, ataxia, heart rate and distance of the muzzle from the floor. Multiple blood samples were taken over the course of the initial three hours.

The study revealed that intravaginal administration (188 ± 22 minutes) lasted for a longer duration than intravenous sedation (119 ± 16 minutes). Also, intravaginal treatment induced ataxia for longer than when given intravenously.

Heart rate did not differ significantly between the two treatment routes.

The higher the plasma level of detomidine, the greater the mare's sedation. Maximum concentration and bioavailabilty for intravaginal treatment took 0.37 hours or approximately 22 minutes after administration.

As further reported in a presentation at the 2019 AAEP Convention, sedation with intravaginal detomidine gel achieves similar effects as those achieved when the gel is given sublingually.

For mares that are aversive to oral deposition of the gel under the tongue, intravaginal administration of detomidine gel proves to be an efficacious alternative.

Impact with Different Horseshoe Materials on Asphalt

The impact of ground forces on the distal limb has effects on musculoskeletal and foot soundness. Synthetic horseshoes have been one means of

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Research showed that polyurethane composite shoes enabled a more even distribution of accelerations between front limbs and hindlimbs compared to steel shoes.

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ameliorating vibration and concussion forces in the limbs. A study at the University of Veterinary Medicine in Vienna, Austria, compared trot accelerations in horses shod with traditional steel compared to a steel shoe with its ground surface covered in soft polyurethane (PU) [Moore, L.V.; Zsoldos, R.R.; Franziska Licka, T. Trot Accelerations of Equine Front and Hind Hooves Shod with Polyurethane Composite Shoes and Steel Shoes on Asphalt. Animals Dec 2019, vol. 9, 1119; doi:10.3390/ani9121119].

Both front and hind hooves were evaluated while comparing the two shoe types with similar mass. Four adult carriage horses were trotted in hand on asphalt. The results are as follows:

- Horses shod with PU shoes trotted faster and with longer strides than those in steel shoes. More research needs to be done to determine whether or not this is because of a greater level of comfort felt by the horses.
- Horses shod with PU shoes took fewer strides over the specified distance than the horses shod in steel.
- Horses shod with PU had less abrupt decelerations during landing and more marked accelerations after push-off from the ground compared to those shod in steel.
- Accelerations were similar between front and hind hooves in PU-shod feet.
- In the hind limbs, results from the different shoe types did not differ significantly.

In summary, the PU shoes enabled a more even distribution of accelerations between front limbs and hindlimbs compared to steel shoes. The authors noted that the PU shoes "may aid in reducing the overload present in the front limbs of horses."

Colic Table Topic at AAEP

A variety of topics were discussed at a colic table topic at the 2019 AAEP Convention in Denver, Colorado.

Lactate and Intestinal Injury: Experience has shown that looking at just peritoneal lactate or blood lactate does not correlate that the horse is suffering from intestinal ischemia. However, the *ratio* between peritoneal and blood lactate does correlate for intestinal ischemia. A ratio of 1.6 has 72% sensitivity and 76% specificity, with false positives pointing to intestinal ischemia about 30% of the time.

Dehydration does not impact lactate levels unless hypovolemia is due to decrease in blood volume and perfusion.

A lactate measurement of 4-6 in peritoneal fluid tends to be a cutoff for surgery. Peritoneal lactate greater than 7 indicates a poor prognosis. A red color in the peritoneal fluid is also indicative of ischemic lesions. It was noted that as cell count in peritoneal fluid rises, lactate levels are less reliable.

The take-home message was that it is important to rely on more than one parameter and to evaluate serial samples of peritoneal and blood lactate ratios.

Stubborn Impactions: Not all horse owners can afford intravenous fluids to help resolve an impaction. Oral electrolytes in 5 liters of water can be given by nasogastric tube at a rate every one to two hours for five treatments while leaving the nasogastric tube in place for ease of administration.

Another option discussed in the colic table topic is for rectal administration of fluids. This is done using tap water through a 24-French enema or a stallion catheter inserted arm's length into the rectum. The catheter can be taped to the tail for continuous infusion of 5 ml/kg/hour for three hours. A 5-liter fluid bag can be hung above the horse, and the rate controlled with an IV set. It was noted that tap water is better absorbed than balanced electrolytes.

Studies indicated that a bolus treat-

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ment of rectal fluids does not work as well as a continuous, slow infusion. Buscopan might help the horse retain the rectal fluids so the horse doesn't forcibly expel them.

The thought is that slight distention of bowel loops stimulates some colonic emptying and motility from more proximal bowel segments. In a UK study, borborygmi and fecal passage increased with this method of hydration.

Large Colon Impaction: When a horse has a large colon impaction that becomes painful, the impaction might be starting to break up. Serial peritoneal fluid samples are helpful for assessment.

Ileal impactions (such as occur with coastal hay) need a lot of detomidine for pain control, including giving it intramuscularly. Discolored or murky-looking peritoneal fluid likely indicates a need for more than medical treatment.

Another recommendation for managing impactions is to stop the IV fluids briefly and hand walk a horse for five to 10 minutes every couple of hours to help stimulate gut motility. This suggestion does not apply to a horse showing colic signs due to botulism or exertional rhabdomyolysis.

Butorphanol given subcutaneously or sublingually can buy several hours of pain relief. This method requires one to two times the dose usually given IV. Blocking pain might help decrease gastrointestinal spasm. If pain recurs frequently between doses, then it is likely the horse's status is not going in a good direction.

Fecal Transfaunation for Colitis: A study at the University of Guelph demonstrated that transfaunation in the horse did not change the microbiome, possibly because stomach acid breaks it down. However, if put directly into the pelvic flexure, the microbiome is changed.

While transfaunation through an enema suppository route seems to help people, it was noted that this method of administration is not likely to help a horse.

NSAID Comparison: Flunixin meglumine is typically used in the initial 24 hours of a colic condition for pain relief and to counteract endotoxin. Firocoxib is better for small intestinal healing than flunixin meglumine, but that statement does not apply to colonic lesions. Flunixin is also reported to increase levels of the endotoxin receptor CB 14.

With this in mind, firocoxib might be a better choice following an initial flunixin treatment over the first 24 hours. A loading dose of firocoxib should be given at three times the once-daily maintenance dose. EM

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In colic cases, firocoxib might be a better NSAID choice following an initial flunixin treatment over the first 24 hours. A loading dose of firocoxib should be given at three times the once-daily maintenance dose.

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By Amy L. Grice, VMD, MBA

5 Business Tips for Solo Practitioners

Solo practitioners historically make up 35-40% of the AAEP membership, and 16% of them, according to the 2016 AVMA AAEP Economic Impact Survey, have no employees. Some practice in rural areas, but many are working in regions of the U.S. that are major equine centers. They want to be in charge of their practices and their lives.

ARND BRONKHORST PHOTOGRAPHY

However, without other veterinarians in their practices, these individuals often experience isolation, professional loneliness and overwhelming administrative tasks. They are solely responsible for taking care of the emergency needs of their clients, and they often feel unable to take time away from their practices. These five strategies for solo equine practitioners can ease their burden.

Tip #1: Hire part-time or full-time help as soon as you can afford it. Having an assistant with you in your truck can double your efficiency. That second set of eyes can also ensure that your invoices do not have missing service or pharmaceutical items, a significant source of lost revenue. An experienced veterinary assistant can restrain horses, increasing your safety and reducing your injuries. In addition, he or she can unload and set up equipment and assist with acquiring diagnostic imaging, allowing you to spend time educating and communicating with your clients. Best of all, an assistant can help with some of the most onerous tasks of your day—driving, cleaning up, restocking and preparing laboratory submissions.

#2: Discipline yourself to invoice and collect payment at the time of service. Your cash flow will improve and your capture of all the revenue for the work you do will improve remarkably. The longer a period of time that elapses between providing services and billing for them, the more inaccurate your invoice becomes.

Check your invoices at least twice yourself, and have your assistant check them. The most common missed charges are second doses ("top-off" doses) of sedation, bandages and dispensed items such as bandages or bute.

#3: Schedule your calls so that they are geographically efficient. Consider having regular "Area Days" so that you train specific clients to expect you to come on Tuesdays, for instance. Then schedule accordingly. Your territory might be large, so scheduling efficiency will save on gas expenses and allow you to do more billable work in a shorter timeframe.

#4: Utilize electronic medical records/practice management software. Many reasonably priced cloud-based systems now exist that can make this part of your day much more streamlined. Utilize templates for examinations and set up your codes with drop-down menus of other related services and pharmaceutical items as much as possible for easy of entry.

#5: Join or organize an emergency service cooperative. Many like-minded practitioners have found this to be a valuable solution to being on call 24/7/365. The best groups meet regularly for coffee or a meal to increase collaboration and collegiality. This social contact greatly minimizes the isolation of solo practice and can improve mental health outcomes.

While solo practice can be stressful and tiring, it is also an excellent way to practice where you want, when you want and how you want. By practicing with these strategies in mind, you can improve your life as a "road warrior." EM

DEALING WITH THE ITCHY HORSE

By Nancy S. Loving, DVM

Brought to you by covetrus

Owners are often exasperated when they see their incessantly itching horses tearing out their manes or tails, or inflicting damage to their skin. They call you to "fix" the problem immediately, not realizing that skin problems can be challenging to diagnose and address.

Where do you start to figure out what might be causing pruritus? The first steps rely on a thorough history acquisition as well as noting the age, breed and gender of the horse. In gathering information, six pertinent questions suggested by Susan White, DVM, MS, DACVIM, of the University of California (EVE Jan 2015), can help narrow down the issue:

1. Does the horse scratch, itch, bite, rub or lick excessively?

In other words, is the horse truly pruritic, or is this itching secondary to other non-pruritic skin lesions?

2. How did the problem first present, and for how long has the problem been going on? Does it occur seasonally?

Insects, pollen allergies and photoaggravated vasculitis tend to amplify in warm weather in contrast to wintertime allergies from barn dust or a lice infestation.

3. Has there been a progression of changes in the lesions?

Differentiating between a rash or alopecia before or after the itching started helps to focus on whether the problem is related to ectoparasites, bacteria or fungi versus the likelihood of allergies.

4. Have topical or systemic medications been used, and if so, what and with what results?

It's important to find out the exact name of the medication, not just a general name like corticosteroids or antibiotics. Find out the dose given, the frequency and for how long administered. Has the horse been bathed with medicated shampoo? Did the horse improve with topical or systemic treatment? What is the recent deworming history?

5. What is the horse's environment?

The environment where the horse lives is important, as is information about travel history. Ask if other horses have been affected. Check for tick or mosquito breeding grounds or poor stable hygiene that could cause issues.

6. What is the horse's diet?

White noted that food allergies are quite uncommon, whereas poor nutrition increases a horse's susceptibility to infectious agents such as lice or dermatophytes. Photodynamic or toxic plants have effects on the skin through liver toxicity. Some horses have adverse reactions to certain supplements.

Information gained from these relevant questions helps to guide your next steps in identifying what might be causing a horse's skin problem. EM

ISTOCK/NATALL

Corporate Ownership of Equine Practices

The reality of corporate ownership of equine practices is here, and it can affect all stages of a veterinarian's career.

By Amy L. Grice, VMD, MBA

For the last 10 years, equine practitioners have watched as the companion animal sector of veterinary medicine has been increasingly occupied by corporate aggregators. These groups typically purchased successful practices with multiple doctors and high profitability for robust price points, rolled up 25-50 of them, then sold the group to another corporation for a higher price within a few years.

Corporate-owned veterinary practices have been around for more than three decades, and now corporate veterinary practice groups number more than 40.

The number of veterinary practices in the U.S. ranges from 28,000 to 32,000, according to the 2017 AVMA Report on the Market for Veterinary Services. Brakke Consulting tracks corporate purchases of veterinary clinics and estimates that about 3,500 are corporately owned. John Volk, an analyst with Brakke, said corporations own about 10 percent of general companion animal practices and 40-50 percent of referral companion animal practices.[1]

VCA Animal Hospitals acquired its first independently owned companion animal clinic in 1987, and over time purchased more than 800 practices in North America.

After the successful model initiated by VCA, Banfield Pet Hospital, Blue Pearl and Heartland Veterinary Partners were formed.

Just over a decade ago, Mars Petcare, a family-owned corporation better known for its candy business, bought Banfield Pet Hospital, with more than 900 offices in the United States. In 2015 it acquired Blue Pearl, a 53-hospital companion animal specialty and emergency care group. In 2016, Mars Petcare purchased

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Because corporate entities buy a controlling percentage (at least 51%, but in many cases 100%), associates will never have decision-making capabilities even if they have the opportunity to purchase shares in the venture.

Pet Partners, which added 60 general practices. In 2017, Mars announced its purchase of VCA Animal Hospitals' 780 veterinary locations, along with 50 diagnostic laboratories.

Mars is now the owner of nearly 2,000 veterinary practices in North America, about two-thirds of all corporate-owned hospitals in the country. National Veterinary Associates (NVA) is second, with about 425 veterinary branches.

In the equine sector, corporate roll-ups began in 2016 with the formation of MAVANA (Mixed Animal Veterinary Associates North America), when 21 mixed, companion and equine practices merged into one entity. At MAVANA, 95% of the shareholders are still practicing veterinarians, and most have sold their practices for a portion of cash and a portion of equity in the new corporation. In January 2018, Hagyard Medical Institute, the oldest equine practice in the country, joined MAVANA.

NVA entered the equine market shortly afterward by purchasing its first equine practice, Fairfield Equine in Newtown, Connecticut, in late 2018. That was followed by the acquisition of Miller & Associates in May 2019.

Another new entry to the equine field is the Avanti group, which has amassed four equine practices thus far. According to Avanti's CEO, Andrew Clark DVM, MBA, the corporate option "makes sense for baby boomers that are ready to retire." This company envisions a model of hubs with spokes—in other words, referral practices surrounded by feeder practices.

Other corporate players are also looking carefully at the larger equine practices, seeing the potential for profitable acquisitions.

The traditional model for equine veterinary practice acquisition is for practice owners to sell some or all of the shares to one or more of their associate veterinarians. Occasionally, a veterinarian not employed by the clinic might buy an existing practice without first working as an associate, but that is fairly uncommon. This traditional model of practice sales is still much more common than a corporate buyout, because most equine practices are below the threshold that attracts the aggregators. However, for a certain-size practice that earns $1.5-$2.5 million, has a facility of some kind and employs at least three veterinarians, corporate consolidators will pay considerably more than the practice is worth when valued by traditional methods.

According to Dr. Mike Pownall in his December 2019 blog post,[2] "purchase amounts seem to be exceptionally high and many veterinary practice owners wonder if they should jump in and be part of the free-for-all of the seemingly high valuations placed on practices. The reality is that the high numbers they throw around seem lucrative, but don't necessarily lead to a pot of gold. In fact, we argue that unless you are needing to sell in the very near future because you are ready to retire, or just want out and don't have anyone to buy your practice, selling now to private equity amounts to selling your practice at a discount." Pownall went on to illustrate the folly of selling a practice early in one's career.

Practice ownership is one of the best ways for a veterinarian to increase financial security and wealth. However, when associates do not have an ownership path, the practice owner's outcome might be less positive.

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References: 1. Zimeta™ (dipyrone injection). [Full Prescribing Information], Kindred Biosciences, Inc. (Burlingame, CA). Revised: 03/2019. **2.** Morresey PR, et al. Randomized blinded controlled trial of dipyrone as a treatment for pyrexia in horses. *Am J Vet Res*. 2019;80(3):294-299.

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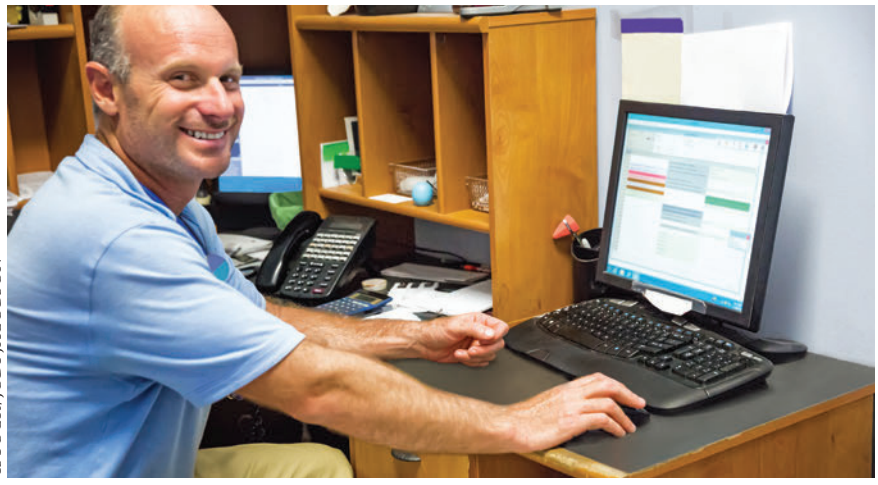

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Corporate consolidators will pay considerably more than the practice is worth when valued by traditional methods.

shares in the venture. When associates have been promised future partnership for years by a practice owner, then are surprised by an acquisition, they are often angry. Many equine associates, if they are able to relocate outside of the boundaries of their contractual non-competes, simply open their own practices. The majority of equine practices (about 53%) have two or less full-time equivalent doctors, according to the 2016 AVMA AAEP Economic Survey.[3]

Two associates who worked in the equine division of a mixed practice and had no non-compete agreements described how they declined to sign contracts with a potential corporate buyer. Instead, they offered to purchase the equine portion of the practice for a fair value from the owner, but were turned down. Consequently, the corporate deal fell through for the practice owner. The associates resigned and opened their own practice in the area.

Sometimes acquisition by a corporate entity brings long-awaited ownership to associates waiting for an opportunity. Ryland Edwards, DVM, DACVS, described NVA's purchase of a majority of Fairfield Equine in late 2018 as a positive development, because a long-anticipated shares purchase was fast-tracked by the corporation at the time of the transaction. He and another associate at the practice were pleased to each acquire 10% of the company, and they received skilled assistance in navigating paperwork, finding a lender and completing the deal quickly. "It's eally been a positive experience for us," Edwards concluded.

The experience of being surprised by a corporate acquisition can be met with dismay, as communication of the changes can be poorly rolled out.

One associate in that type of situation described "a cavalier attitude that showed no respect for the change to the associates' futures."

Several associate veterinarians described being given a new contract after a purchase by the new corporate owner and told it must be signed within five days. They described feeling that they "had no choice but to sign or be left with no paycheck and no time to put together a viable plan."

Many associates are bound by a contractual non-compete, have purchased houses, have spouses employed in the region, and/or have children enrolled in local schools. Picking up and starting again in a new location is not an easy task.

Darla Moser, DVM, DACVS, is an associate at a referral hospital outside of Las Vegas that was recently acquired by Avanti. She described a long "courtship" where both sides took

the time to get to know each other so there were no surprises and no confusion. Although the introduction of new practice management software was challenging, the Avanti team made the process as painless as possible, she said. Moser concluded, "It was a very smooth transition, and I have seen nothing but positive changes—possibly because of experienced equine practice managers looking at the practice from an outside perspective."

Funding for Acquisitions

Most corporate veterinary practice aggregators obtain capital from private equity firms. These enterprises manage assets for a variety of investors, including wealthy individuals. Private equity firms generally buy businesses in all types of industries, encourage growth in profit, then sell them in three to seven years. Some equity ventures simply aggregate practices, then promptly sell the group for a profit. Because a private equity firm's objective is to exceed the average return of the stock market, which is historically about 8% annually, profits from veterinary hospitals can readily provide a much higher margin.

In the veterinary sector, equity firms expect to make a return on their investment that enables them to buy additional practices. Ultimately, after amassing a group of practices, the private equity owner sells the bundle for a substantially higher price than it paid to acquire them. Some consolidators get funds for investment by using specialty, non-bank lenders that offer loans with interest-only payments for a period of time. The aggregator then buys more practices with the principal, seeking to collect a sufficient number to up-sell them to another buyer, pay off the loan and have profit remaining.

Advantages to Corporate Ownership

There are advantages to corporate veterinary ownership compared to the traditional private practice model. Many veterinarian owners dislike the business management part of running a practice or simply lack the skills to effectively deal with staffing issues, hiring new employees, ensuring compliance with the myriad of regulatory issues, and other time-consuming business details.

With a corporate group in control, management is handled by the corporate office. That means veterinarians can focus their time exclusively on providing patient care, eliminating a source of stress.

In addition, if a veterinarian needs to move to a new part of the country because of a spouse's job or a family issue, the veterinarian might be able to transfer to another of the corporate entity's clinics across a wide geographic area. Sometimes associates in corporate practice work more standardized schedules, with fewer hours than what is typical for a doctor in other equine

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As an exit strategy for practice owners, selling to a corporate aggregator can allow an older veterinarian near retirement to gain a higher price than he or she could from an inside sale to an associate.

practices. Because they have many employee veterinarians, corporately owned practices can sometimes send a relief veterinarian to a practice in the case of an injury or due to maternity leave.

Retirement Strategy?

As an exit strategy for practice owners, selling to a corporate aggregator can allow an older veterinarian near retirement to gain a higher price than he or she could from an inside sale to an associate. The corporate practice might also keep existing staff members and have the practice owner continue working for several years as an employee as a condition of sale.

Because equity venture groups do not typically buy practice-associated real estate, the former practice owner might benefit in the long term by leasing the practice facility to the corporation.

Although members of the younger generation of equine practitioners understand the lure of a big payout, they lament the change in the industry. As one said, "I understand the concept of an owner who wants an exit plan that pays off in a big way, but it sacrifices the futures of the younger veterinarians coming behind."

This long-term associate now thinks of his or her position as "just a job" and is investigating other options that could offer self-determination and the financial benefits of practice ownership.

Benefits for Younger Veterinarians

Both a positive as well as a negative aspect of corporate practices is their ability to offer higher salaries to new graduates. Having a higher salary helps with paying educational debt, but might cause these doctors to bypass privately-owned equine practices that rarely can compete aggressively with corporate clinic salaries. That could limit those veterinarians' future ownership opportunities.

This strategic move by corporately owned practices to corner the market on the small numbers of new veterinarians entering the equine field, and making the positions attractive enough to retain them by utilizing equity funds, could drive some smaller practices out of the market if they cannot attract associates.

One of the disadvantages of corporate practices is the lack of an option for associates to have majority ownership, if they can purchase shares at all. In the equine market, giving associates a chance to purchase a small number of shares is fairly common, as this helps to "lock in" valuable producers for the practice. Although some buyouts include the opportunity for associates to own shares, they will never be in charge of their own destinies as minority shareholders.

Sometimes this limited decision-making ability extends to the medical realm, with pressure to follow "best practices" relating to pricing and treatment options. This lack of flexibility can be demoralizing. If equipment is needed or changes in policies are sought, there can be a lengthy approval process rather than a quick owner decision.

A significant drawback is the need for corporate practices to answer to their stockholders and maximize the bottom line short-term, while most veterinarians focus on long-term relationships with clients. Although every practice has to make a profit to be sustainable, some corporations have created pressure to up-sell clients to increase profit margins. The potential overemphasis on financial results is a common criticism of corporate medicine.

Economies of Scale

In most industries, gaining economies of scale is a cost-saving strategy achieved through having more business locations with a larger market share.

Shareholders then gain higher returns through lower costs, improved efficiency and introduction of technology. By using this approach, corporate consolidators have improved labor efficiency by eliminating duplicate services in marketing, accounting, inventory management and human resource management. When these services are performed at a centralized office, operating costs are lowered, increasing the profit margin.

These lowered costs could also be used to lower client prices to potentially gain a larger share of the available market for equine veterinary services, but this is rarely seen. In addition, corpo-

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rate veterinary aggregators negotiate to purchase products and services at discounted prices.

Valuation of Practices

The valuation method that private equity investors use to determine the value of a veterinary practice is different from how the veterinary community, including banks that lend for associate acquisitions, figures the value of practices.

Independent veterinary practice owners generally utilize an income approach, including the Capitalization of Earnings/Cash Flow Method, the Discounted Earnings/Cash Flow Method or the Excess Earnings Method.

Banks generally will lend at five to 6½ times the annual EBITDA (earnings before interest, taxes, depreciation and amortization) of the practice being purchased, provided that it is well-managed. In contrast, aggregating investors focus on returns on investment (ROI) in an effort to exceed the stock market average return of 8% per year.

Currently, private equity firms are often willing to pay eight to 10 times an equine hospital's EBITDA because even at that price, they can exceed their desired ROI of greater than 8%.

As an example, consider a practice bringing in $2 million in gross revenue that is generating 12% profit, or $240,000. Using the bank's common multiple of five for a well-managed practice, this practice would be worth $1.2 million. Buying this practice at $1.2 million would yield to the purchaser an ROI of 12% ($240,000 earnings on a $1.2 million investment).

A corporate investor seeking to beat an 8% stock market return could increase the offered price to nearly $3 million. That's because the practice's annual profit of $240,000 is 8% of $3 million.

A purchase price of $3 million would be 12.5 times the practice's annual earnings!

It is no wonder that owners of practices matching the target of consolidators are increasingly attracted to selling at these high prices.

It is important for younger owners to consider the financial aspects of these transactions very carefully before selling to an aggregator. Consider a 50-year-old practice owner planning to retire at 65 years of age, leaving 15 years of practice ownership yet to go. Even if the $2 million practice we considered previously did not grow in revenue, which is unlikely, that $240,000 in EBITDA x 15 years is $3.6 million. By selling at age 50, this doctor leaves $600,000 on the table and still has the opportunity to sell his or her practice at retirement, perhaps to an associate or perhaps to a corporate entity.

Even at a multiple of five, this is an additional $1.2 million.

While this doctor could theoretically invest his proceeds from an early sale, $3 million might not support a comfortable retirement of an extra 15 years in length, especially if there are economic shocks.

Private equity companies often buy individual practices at a multiple of EBITDA that is in the mid- to high-single digits. Then, when they have acquired enough practices, they can often sell the bundle for double the initial multiple. Because risk is diminished across a larger group of practices, the valuation and price paid is higher.

For practice owners ready to retire, sale to a corporate consolidator can mean more money for their final years and alleviate concerns about a sale to associates whose concern about high educational debt can minimize their enthusiasm for purchasing a practice.

For those owners who don't want to sell to an aggregator, managing the practice for high performance and serving current clients exceptionally well can attract high-quality associates who might ultimately want to purchase shares. An "inside" sale to an associate can be structured a number

of different ways to make it affordable while gaining the owner a fair return on his or her life's work. While sums will not equal those available from an aggregator, a practice seller might have more confidence that the practice will remain a valued legacy in the equine community.

Take-Home Message

In summary, corporate consolidation of equine practices has begun, and it is likely to continue to change the market.

The target of most of these groups is the well-managed, profitable practice that has at least $2 million in revenue, three veterinarians and a facility of some type. The high prices that the aggregators can offer is a function of their primary goal of earning more than the average rate of return of the stock market and their abundant cash from investors that make the purchases possible.

While the sale of a practice to a consolidator might maximize the "take" for an owner at retirement age, younger owners will lose substantial value by transacting while there are still more than five to seven years left of their career trajectories.

For associates, corporate purchase of their place of employment can be a positive experience or a rude disruption of their career aspirations. There is no certainty of the future effects of consolidation on the equine veterinary industry, but it is a development that is our new reality. EM

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AMY DRAGOO

Pre-Purchase Exams

Veterinarians offer their opinions and processes for pre-purchase exams.

By Katie Navarra

Horse owners—from professionals to non-pros and amateurs to recreational trail riders—are more educated about horse health than ever before. This increased knowledge has elevated the importance of a pre-purchase exam during the horse-buying process.

For equine practices that offer the service, it can be a significant revenue generator. While pre-purchase exams can be lucrative, some practices shy away from offering them because of liability concerns. D. Reese Hand, DVM, DACVS, who practices in Weatherford, Texas, said pre-purchase exams are a slippery slope, with some veterinarians accepting the challenge and others passing it by due to liability concerns.

"I take on the challenge," he said. "To me, it's one of the more interesting things I get to do."

Joe Carter, DVM, who practices in Washington, Oklahoma, also embraces the service, performing hundreds of pre-purchase exams a year on behalf of reining, cutting and cow horse buyers. He has established a strict process he follows for every exam. He isn't swayed by a person's concern about cost.

"Once you establish a process that you feel is best, the shackles are lifted off," he said. "It gives you the confidence to know you're getting the most accurate predictor of prognosis, and you don't have to worry that you missed something. It leads to less stress. There's a lot of stress in a vet's life, so any time we can eliminate it, that's good."

"Consistency is the key," said attorney Ky Mortensen, MBA, the chief oper-

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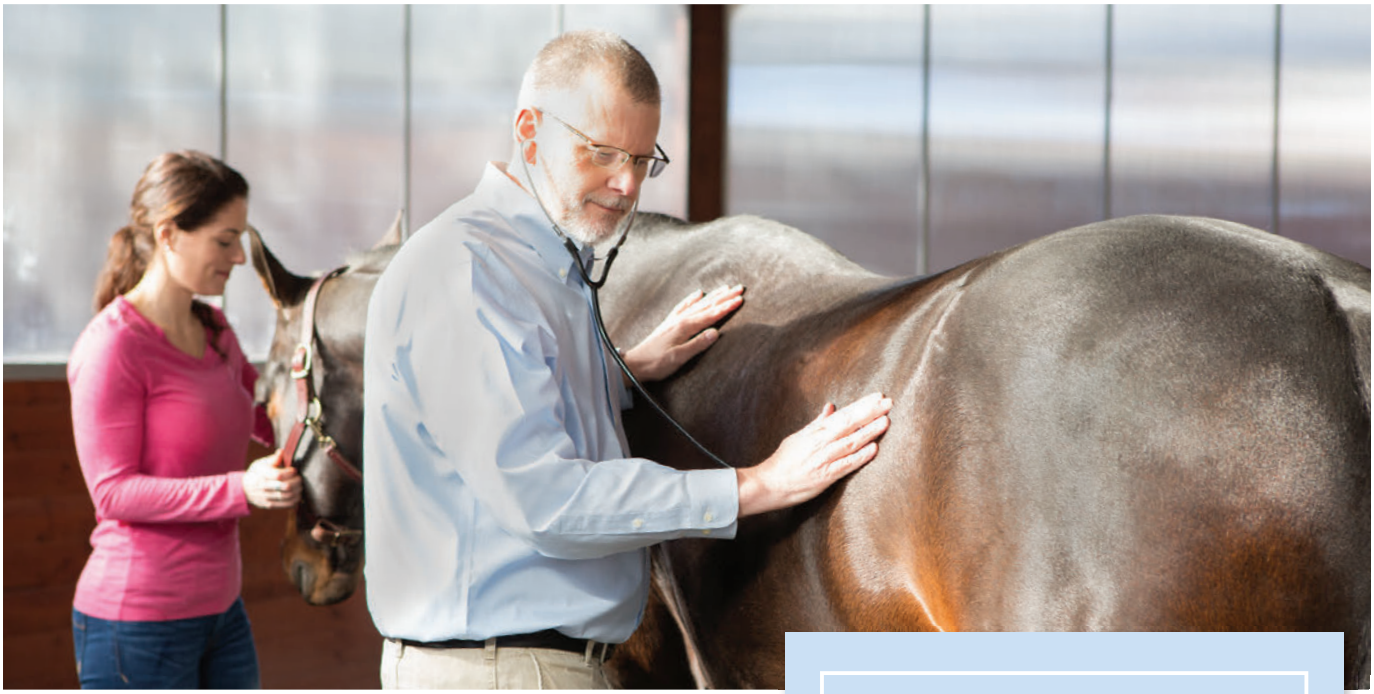

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While some veterinarians don't handle pre-purchase exams because of liability issues, others have created a process that works well for them and their clients. Veterinarians must make sure if they have a relationship with both buyer and seller to be as transparent as possible.

ating officer at Alamo Pintado Equine Medical Center in Los Olivos, California. "How you choose to perform a pre-purchase exam, and the services you provide as part of your process, is totally up to you. The key is that you have a process that is consistent and that you don't deviate from it. The minute you start making exceptions and doing things outside the scope of your usual process, you open yourself up to potential liability."

Think adding or expanding pre-purchase exam services is right for your business? Read on.

Getting to Know You

Before jumping in to offer pre-purchase exams or pushing an expansion of the service, take time to create a strategy for working with clients. Documentation should be an integral part of the process—one that begins before you ever see the horse.

Mortensen recommended developing an information request form to help you understand who the buyer is. Ask the client what is known about the horse; his or her goals for the horse (including level of competition); and expectations for ongoing maintenance.

"You'll also want to know who the seller is," Mortensen said. "Hopefully, they'll give you prior medical history and information as to whether horse has had any prior injuries and what level of competition the horse has been in."

It is important to obtain as much information as you can before the exam begins so that you understand as much as you can about the horse, the client (the buyer) and the horse's history. If you discover that you have a working relationship with both buyer and seller, it is crucial to be completely transparent.

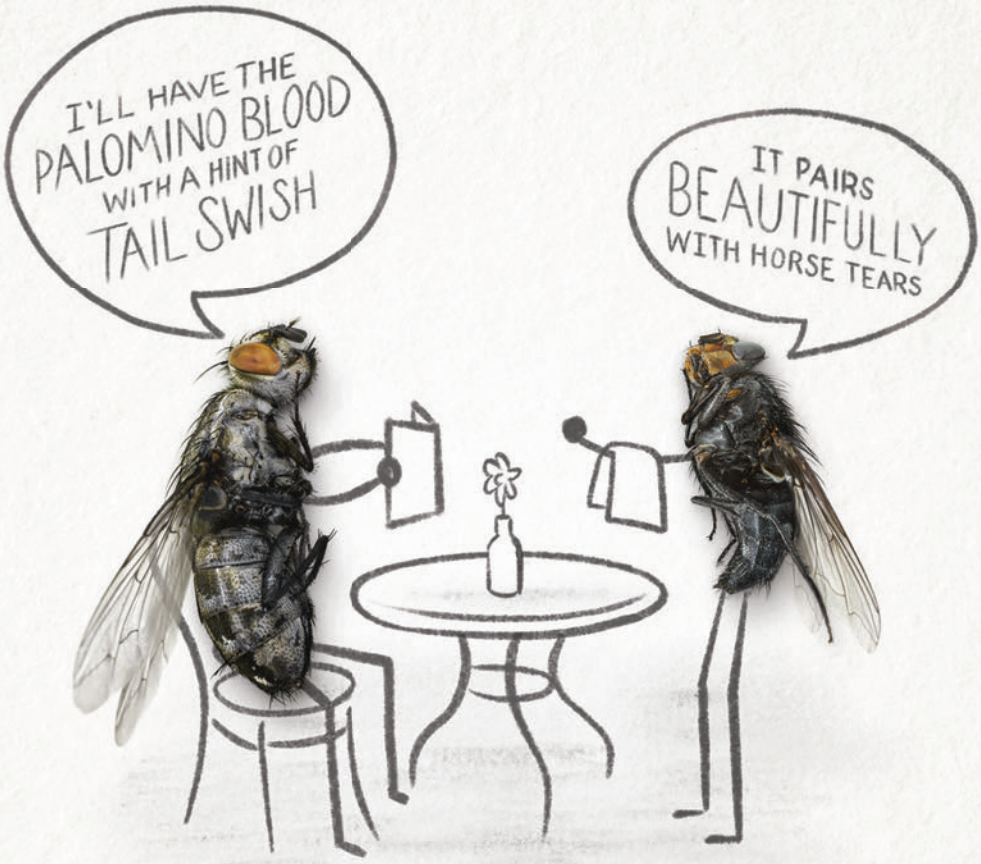
"Let both of them know they are/have been clients," he said. "Once a conflict is identified, you can choose not to proceed with the exam or you can offer to continue as long as both parties understand you are going to be as transparent as possible."

Establishing a Protocol

Once you've established a process for getting to know the buyer and seller, decide what an exam will include. A physical to evaluate the horse's general health is fundamental for every exam. At Hand's Texas practice, Equine Sports Medicine and Surgery, he personally examines every horse rather than having one of the veterinarians working in the practice perform the exam.

"I've come up with a routine so that I do every step the same way every time; that way I don't miss something," he said. "I start at the horse's left nostril, move up his head to his ears, along his body around the back and up the other side finishing at the right nostril."

A thorough physical exam should



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[1]Townsend L. Horse flies and deer flies. University of Kentucky ENTFACT-511.

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A standard lameness exam that includes a flexion test and using hoof testers should be a routine component of any pre-purchase exam.

include inspecting the eyes and lungs, as well as looking for signs of previous colic surgery or old injuries. A standard lameness exam that includes a flexion test and using hoof testers should be a routine component of any pre-purchase exam.

As often as possible, Hand performs his lameness exams on three surfaces—dirt footing, grass and gravel or pavement.

"It's important to watch the horses on different surfaces, as this will give you insights to subtle issues not seen on one surface," he said.

Not every practice requires imaging during pre-purchase exams. However, they are non-negotiable in Carter's practice. Not only are they mandatory, he conducts a minimum of 28 views, including feet, legs and stifles. When he first instituted the policy, people complained, but over time buyers have come to expect it as part of his process.

"Too frequently we ended up missing something that we would have caught if we had done a full radiographic study," Carter said. "We don't know the history of so many of these horses, and if their joints have been treated, you wouldn't see that clinically, but you would see it on a radiograph."

Depending on the horse and the buyer's intended use, he also might recommend ultrasound and MRI, but does so on a case-by-case basis. Knowing the discipline, the associated stressors of that discipline and most common injuries those competitors face are key. For example, Carter places a higher level of scrutiny on stifles in cutting and cow horses because of torque the stifles sustain while cutting cows and drawing back. "That creates a lot of soft tissue injury, so I see us doing a lot more ultrasound to look at soft tissue," he said.

On a reining horse, he more closely examines the front feet looking for wear and tear on the navicular area, which comes from running fast circles. These horses tend to have similar issues as one would find in racing horses. The run-down sprints to a hard, fast stop create concussive knee injuries. Reined cow horses are the triathletes of Western performance horses, so he said he looks for all of these things.

In Hand's practice, he sees a lot of horses with foot problems and pays particular attention to the possibility of navicular and soft tissue problems in the foot. He also assesses the back for soreness that might be associated with "kissing spines."

"Stifles, hocks and suspensories can be an issue in all disciplines, so we do look for those, too," he said.

The Crystal Ball

Buyers wish veterinarians had a crystal ball to predict how well the horse will hold up and for how long. People are expecting to pay maintenance costs on performance horses; they just don't want those expenses to explode. No horse is perfect. Knowing the amount of maintenance a buyer is willing to accept is important for providing an assessment,

said Hand.

Ultimately, buyers are looking to veterinarians to provide a prognosis based on data collected in a pre-purchase exam to provide a prediction for long-term soundness.

"People are coming to us for our opinion and for us to prognosticate the relative health of this horse over a period of time," Carter said. "One thing that sets us apart is that we give people an opinion as to whether or not a horse will meet their needs. Presenting facts and data and letting the buyer decide sounds good, but we believe we need to give an opinion."

Carter said he always involves the buyer's primary veterinarian. The local veterinarian can comment on whether he or she has the expertise or desire to perform the needed maintenance and provide insight into whether there would be a local market for the horse if the buyer decides to sell.

"Having the hometown veterinarian's thoughts make it a shared opinion. Two heads are better than one," Carter said.

Clients are looking for assurances that a horse is fit for the intended purpose. However, Mortensen advised that veterinarians do not offer any type of guarantee or warranty. He also recommended including an indemnification clause in the pre-purchase exam paperwork stating that the results of the pre-purchase exam are not be interpreted as a guarantee of any kind.

"Guarantees in a pre-purchase exam are not yours to make," said Mortensen. "If a seller wants to offer guarantees, that's up to them. Put in your paperwork that there are no guarantees or warranty. You can give a scientific opinion, but you can't offer more than that."

Take-Home Message

Playing an important role in the potential sale of a high-profile horse can be thrilling. It's easy to get swept up in the excitement of working on a high-dollar horse. Mortensen warned against getting caught up in the emotion of the transaction and encouraged veterinarians to focus on providing objective feedback about the horse's condition as it exists in the moment that you see the horse.

"Don't try to sell the horse," Mortensen advised. "Stay true to your process, maintain your role as one of professional opinion and document each phase of your exam as thoroughly as possible. Weeks, months and years after the exam, your documentation is all you are going to be able to show as a record of what occurred during your exam. If you are as consistent and thorough as possible, it will stand you in good stead." EM

Editor's note: Learn more about the art of communication during a pre-purchase exam in the article on page 32.

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Pre-Purchase Examination Communication

Here are tips on communicating before, during and after the pre-purchase exam to ensure that everyone is on the same page.

By Colleen Best, DVM, PhD, BSCH

There can be much to enjoy about doing a pre-purchase exam, including getting to do a truly in-depth exam with the horse and partnering with the client at the start of an exciting new owner-horse relationship. However, there is often just as much, if not more, that is aggravating and frustrating.

In many cases, this is due to the number of individuals involved and the burden that places on the veterinarian's time and resources. At a minimum, there is a seller, a buyer and a veterinarian.

Even at the best of times, having the seller involved amplifies the intrinsic challenges in communication and coordination that exist in the veterinarian-client relationship.

However, as we well know, there are usually more players—and opinions—than just the three mentioned above. There are often agents, riders, grooms, barn managers, trainers and so on.

Managing the complex dynamics that exist when there are so many individuals involved can be demanding and challenging. It necessitates intentionality and benefits from having an established

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There are many variables that exist in the circumstances of pre-purchase examinations, and many personalities. Remember what the exam is for and its limitations.

system that supports efficiency and good medicine. It's also important to acknowledge that, in addition to the sheer number of people that can be involved, tensions are often running high and there are pressures on many of the parties to make the sale.

In this setting of opinions and stress, it can be difficult to find one's way to engage with the seller in an authentic way to meet his or her needs and expectations with a pre-purchase exam.

Despite the difficulty, often there is value in working toward understanding the complex interpersonal dynamics. Understanding the influences on the buyer, particularly if he or she is your long-term client, can support your ability to council that person effectively and make an informed decision.

Here are some constructive ideas to facilitate the pre-purchase exam process.

Connect to a Purpose

As a guiding principle, it helps to stay connected to the purpose of the pre-purchase exam. That purpose is to provide an accurate picture of the horse's health at the time of the exam and share that with the client so he or she can make an informed decision about the horse's suitability.

There are many variables that exist in the circumstances of pre-purchase examinations, and many personalities. If we remember what the exam is for and its limitations, then we can more easily navigate the process.

Logistics

Pragmatically, there is tremendous benefit to bringing a trusted and competent assistant with you to the call. This will give those present at the exam—whether seller, buyer or others—the ability to be fully engaged in watching the exam and communicating with you.

Further, as you proceed through the exam, that person can take notes or fill in paperwork to ensure everything is recorded accurately. This adds efficiency to the process by having your medical record and pre-purchase report started.

Get It in Writing

Paperwork can feel burdensome, but in the case of pre-purchase exams, it is a crucial piece of quality assurance and liability protection. This includes having a health history form that is completed by the seller and a report of your findings to be provided to the buyer.

Having templates for these at your fingertips and only scheduling the exam once the history form has been returned can save a lot of headaches.

Another idea is to include a questionnaire for the buyer prior to the examination where he or she indicates, in writing, the desired components of the examination (e.g., radiography, drug screen, endoscopy). The questionnaire can be made more useful if it's annotated describing the purpose and cost of each component. Of course, things can change during the course of the examination, but it provides a starting point and can expedite the process.

Be Curious!

This is simple, but not easy, advice to follow, particularly in the context of pre-purchase exams. When the purchase is for an established client, for the most part, that established relationship is an asset because one knows more about the person's situation, capabilities and what he or she is looking for from the examination.

The client is also more likely to understand how you, as a veterinarian,

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In the context of a pre-purchase exam, managing our expectations as veterinarians and helping clients manage theirs increases the chance of a positive outcome for all parties.

approach things. The fact that the person has chosen you to do the pre-purchase exam demonstrates a confidence and comfort with you.

However, when doing a purchase exam for an unknown buyer, particularly if the buyer is not on site, the uncertainties start to add up and the importance of being curious is amplified. To this end, being curious and asking questions of the buyer and that person's entourage can provide valuable information that eases the process. Using open-ended questions is the most efficient way to gather this type of information!

Investigate Expectations, Then Shape Them

Expectations are ubiquitous in our lives. We have expectations of ourselves and others. Despite this, most of expectations are held subconsciously, and we only notice them when they are not met and we're faced with the consequences of frustration, disappointment or anger. These feelings can result when we don't meet our own expectations or another person has not met the expectations we have for him or her.

In the context of a pre-purchase exam, managing our expectations as veterinarians and helping our clients manage theirs markedly increases the chance of a positive outcome for all parties.

A critical expectation to discuss is what can and cannot be determined in a purchase exam. We need to remind clients that we do not have crystal balls and cannot predict the future. This is a lighthearted and relatable way of imparting that purchase exams do not come with guarantees about the horse's future.

What can be provided is the horse's current health status—a snapshot in time—as well as a discussion about how the findings might or might not influence the horse's career.

It's important to do more than educate the client about what you deem to be appropriate expectations. It's critical to explore the expectations of that person. This can be done simply by asking what they are. This would sound like "What are your expectations of me in this process?" or "What information are you expecting at the end of this exam?" or "What experiences have you had with purchases in the past?"

This will give you valuable information that supports your ability to interface with the client effectively and to work toward a successful outcome for everyone.

Communicate for Clarity

When emotions and stress levels are running high, it is difficult for clients to remember the content of conversations clearly. As veterinarians, the responsibility falls to us to ensure we're delivering our message in a way the client can receive it.

The best ways to do this are through the use of empathy statements and pausing. This means tuning into the client's emotional state, then ensuring that it

is overtly acknowledged. This might sound like "I hear that you're worried about seeing that chip on the hock; it's not what we were expecting." Follow this statement with at least a five-second pause before continuing on with a discussion about whether he or she would like to proceed with additional radiographs. This will give the client a chance to manage disappointment and allow him or her to make a better decision.

Another useful communication tool that supports clarity of information exchange is to have the client repeat back to you the information shared with you in his or her own words. This can seem like a tricky thing to accomplish without it sounding condescending or like you are quizzing the client. However, often it can be done by framing it as wanting to ensure that the client has fully understood the message you are conveying.

This could sound like "I know you're probably going to have to share this information with other people; do you want to run past me what you'd tell them. That way we can make sure I've done a good job explaining it to you."

When done well, this communication skill leaves the veterinarian confident that information has successfully been imparted and understood. The client is empowered with this newfound, and correct, knowledge.

References and Resources

A tricky part of a pre-purchase exam is trying to make accurate predictions based on the findings of the examination. As veterinarians, we have a not-so-secret weapon: peer-reviewed literature.

Whether we are trying to educate an owner about the radiographic findings and their potential impact on the horse's athletic future or speaking with another veterinarian, knowing what research has been done on that particular condition can alleviate some of the subjectivity of the findings and provide all parties with more confidence in their decisions.

Establish Good Boundaries

Lastly, the phrase "not my monkeys, not my circus" comes to mind. While there is value in understanding the interpersonal factors at play surrounding the potential purchase of the horse, it is important to remember that the decision to purchase the horse does not belong to the veterinarian.

Keeping this in the front of your mind can reduce some of the stress associated with the process. It also can keep your focus on what can be controlled, namely conducting a thorough and high-quality pre-purchase exam, as well as communicating the findings to the buyer in language that he or she can understand. EM

Editor's note: For information from vets on the physical aspects of pre-purchase exams, read the article on page 26.

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Practicing Pregnant: How to Stay Safe While Working

You have many decisions to make if you are pregnant and practicing veterinary medicine.

By Amy L. Grice, VMD, MBA

Whether you are an associate, an owner or a staff member at a veterinary hospital, once you are trying to become pregnant or have confirmation that you are, you must take precautions for your developing child.

There are a number of hazards that are unique to veterinary medicine along with some that are common to all workplaces. Each woman is also an individual, and some of you will have a higher risk tolerance than others. Also, each pregnancy will be different. Flexibility and good communication will go a long way toward having a smooth experience.

All workplaces, including those outside of veterinary medicine, can affect your safety, even when you are not pregnant. Slipping on a wet floor, tripping on a cord, lifting something heavy, reaching overhead, using a stool or ladder, and climbing stairs are all hazards that can cause injury in the workplace. Being pregnant exacerbates those general risks due to changes in balance and hormonal softening of ligaments.

Working in veterinary medicine increases your risks due to possible

exposure to radiation, anesthetic gases, pharmaceuticals, zoonotic diseases, and viruses or bacteria. In addition, because of physical changes, the personal protective equipment that you could wear correctly before pregnancy—such as a lab coats or lead aprons—might not fit properly. A fetus might be more vulnerable to some chemicals because of its rapid growth and development, particularly early in pregnancy when its organs are developing. Changes in your metabolism also can increase how quickly you absorb some substances. When pregnant, changes in your immune system, lung capacity and even ligaments can increase your risk of injury or illness.

In the veterinary field in particular, it's important to share the news of your pregnancy promptly with your employer to avoid exposure to workplace hazards.

Since the first trimester is the time of the most crucial development, avoiding risks as soon as possible simply makes sense.

Current occupational exposure limits were set based on studies of non-pregnant adults. What is considered safe for you might not be safe for your unborn baby.

Talk to Your OB-GYN

It is important to discuss possible job hazards with your physician. Although most women are able to safely do their jobs throughout pregnancy, sometimes they must adjust their job duties temporarily or take extra steps to protect themselves and their fetuses.

Your ability to continue working through your pregnancy depends on your overall health, the health of the fetus and what sort of work you do. Many jobs are safe to continue through the entire pregnancy. Other jobs might be fine at the beginning of pregnancy, but untenable near the end.

Later in pregnancy, some duties might need to be changed or stopped. Sometimes your schedule or hours will need to be changed. If you continue working, the goal is to stay safe and comfortable.

Specific Risks in Veterinary Medicine

Radiation—While taking radiographs, you could be exposed to small amounts of radiation. You might decide to try to eliminate the risk during your pregnancy by avoiding these duties, but for equine practitioners, this could be impossible. For those who cannot avoid taking radiographs, take steps to reduce the risk.

Radiation exposure during your entire gestation should not exceed 500 mrem. The most dangerous time for radiation exposure is following conception (preimplantation) up to the eighth week of pregnancy.

Many pregnant women wear the same protective equipment while taking radiographs as they did when not pregnant, but because of changes in body shape, a wraparound lead apron might be better suited for the pregnant woman. In addition, wearing an additional dosimeter badge at the level of your uterus can provide more specific measurements of exposure to the fetus.

Before you take films while pregnant, review the reports from your dosimeter badge for the last year to ensure that your equipment and radiation safety techniques are protecting you from excessive exposure. As always, keep the time of exposure as short as possible, and maximize your distance behind the generator.

In some equine practices, nuclear scintigraphy is used for diagnostics because of its sensitivity and noninvasive nature. A 99mTc labeled radiopharmaceutical is injected intravenously into the horse, and images are acquired immediately post-injection and several hours later.

Staff members are often in the room with the horse during the acquisition process.

If you must be involved, avoid additional radiation exposure by wearing protective gear and minimizing contact with the patient and patient's waste for 48 hours after the procedure.

Waste Anesthetic Gases—Waste anesthetic gas (WAG) exposure concerns many pregnant health care workers in human and veterinary medicine. Although a recent meta-analysis concluded that occupational exposure to WAG is associated with increased risk of spontaneous abortion, most of the studies in the meta-analysis were conducted before WAG scavenging had become a legal requirement, and none of the studies attempted to establish a relationship between amount of exposure and magnitude of risk of spontaneous abortion.

The meta-analysis included 19 studies of various designs with anesthetists, operating room physicians and nurses, dental assistants, operating-room workers, hospital workers, health workers, and veterinarians and veterinary assistants as subjects. More recent studies have demonstrated that "rates of spontaneous abortion and low birth weight infants were statistically similar among female veterinarians and lawyers, leading one to conclude that WAG is being effectively scavenged in most settings.

However, if you can smell anesthetic gas, the level is too high for safe exposure, whether you are pregnant or not.

Appropriate operating procedures for safe anesthesia include always checking the machine for leaks before use, ensuring the scavenging system is connected and operational, and using a cuffed and properly inflated endotracheal tube. The most dangerous times for exposure are during induction and recovery. In order to allow time for the system to be flushed through the scavenging system, once the procedure is complete, the anesthetic gas should be turned off and the patient maintained on high oxygen flow. This will help to minimize exhaled WAG after the patient is disconnected from the anesthesia machine. Vapor respirators can also be purchased and worn as an extra barrier.

Bone cement—Bone cement is the common term for the chemical

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Waste anesthetic gas is a concern to pregnant veterinarians.

substance methylmethacrylate (MMA, also known as polymethylmethacrylate). Bone cement is used in various orthopedic procedures, particularly in orthopedic or neurology specialty practices. Bone cement is a clear liquid with a very identifiable sharp and fruity odor. It can be easily detected at levels far below those considered to be harmful to human health.

Toxicity studies performed on animals have had mixed results. Some studies have shown no serious adverse effects to the fetus. Other studies have found that pregnant animals exposed to very high levels of MMA experienced fetal abnormalities. These abnormalities included birth defects, issues with bone growth, and an overall decline in fetal weight.

Because MMA carries a potential risk of harm to a human fetus, it is commonly advised that pregnant women avoid direct contact with MMA and avoid inhalation of MMA fumes.

Pharmaceuticals—Some drugs prescribed to veterinary patients are dangerous for pregnant women to handle. Common examples in equine practice are chloramphenicol, misoprostol, altrenogest (ReguMate®), and dinoprost tromethamine (Lutalyse®).

Chloramphenicol has been associated with adverse effects in the neonate as well as heritable genetic damage and cancer.

Misoprostol might cause adverse effects on the developing fetus, miscarriage, uterine rupture, bleeding and death.

Altrenogest is an oral progestin used to suppress estrus or as an adjunct to help maintain pregnancy in some mares. Skin contact must be avoided, as altrenogest is readily absorbed through unbroken skin. The product label warns that pregnant women or women who suspect they are pregnant should not handle this product, as accidental absorption could lead to prolongation of pregnancy.

Dinoprost tromethamine is used for estrus induction and synchronization in farm animals and horses. It is readily absorbed through the skin and can cause abortion in pregnant women.

These are not the only pharmaceuticals that can cause harm. Use care, read labels and avoid handling hazardous substances as much as possible. If you do handle these drugs while pregnant, use double gloves or consider wearing thicker chemotherapy gloves. Wash your hands thoroughly and consider wearing a mask if handling tablets that could result in dust inhalation.

Chemotherapy—Chemotherapy is designed to fight cancer by killing fast-growing cells. Hence, these cytotoxic drugs are very harmful to the fetus' fast-growing cells. Ideally, pregnant women shouldn't interact with patients receiving chemotherapy or be involved in its administration. If there is no alternative, at least try to avoid the preparation of chemotherapy agents, the mixing of IV fluids containing chemotherapeutic agents and the injection or infiltration of tissues with these drugs, such as the injection of an equine sarcoid with cisplatin.

Wear a mask, as well as double chemotherapy gloves, if you must perform this service.

Formaldehyde and Formalin—Formalin is the name for saturated (37%) formaldehyde solution. Study results vary with regard to the hazard formaldehyde can pose for pregnant women, but it is known to be a carcinogen. Pregnancy is a particularly vulnerable time for exposure to indoor air pollutants, such as formaldehyde, which is linked to spontaneous abortion, congenital malformations and premature birth.

Avoiding contact with formaldehyde and formalin is wise and should not be difficult in most practices, as it is not frequently used.

Zoonotic or Infectious Diseases—Exposure to or infection with diseases such as rabies, tetanus, *C. difficile* diarrhea, listeriosis, salmonellosis, cryptosporidiosis, plague, sporotrichosis, methicillin-resistant *Staphylococcus aureus*, psittacosis, dermatophytosis, leptospirosis, bartonellosis and Q fever have all been documented in veterinary workers.

Pregnant women are more susceptible to certain zoonotic infections owing to physiologic suppression of cell-mediated immunity. Conditions to which pregnant women are more susceptible include toxoplasmosis, lymphocytic choriomeningitis, brucellosis, listeriosis and psittacosis.

Vertical transmission of certain zoonotic agents might result in miscarriage, stillbirth, premature birth or fetal congenital anomalies. The NASPHV Compendium of Veterinary Standard Precautions is recommended as a resource to minimize these hazards. In addition, the University of Wisconsin has a webpage devoted to zoonoses and pregnancy.

Other Considerations

Lifting, standing and long shifts—Prolonged walking or standing increases the risk of preterm labor and intrauterine growth restrictions.

Consult with your obstetrician about appropriate restrictions, if any. If you must be on your feet for long periods of time, wear comfortable shoes with good arch support and take breaks to sit down. You might consider wearing support or compression socks.

If you're repeatedly feeling exhausted, listen to your body and consider cutting back on your work hours or the time you spend standing.

Generally, 25 pounds is the limit for lifting in most healthy pregnancies, but proper form is essential. Bend at your knees, not your waist. Keep the load close to your body, lifting with your legs, not your back. Avoid twisting your body while lifting. Don't try to be a hero and do lifting all by yourself. In equine practice, use your assistant or a client to carry heavy equipment.

Traumatic Injuries—Equine veterinarians are at risk for injury simply from the size of the animals they treat. Kicks, strikes and crush injuries can be fatal to the fetus and/or mother.

Taking normal precautions might be inadequate, as a pregnant woman has a changed balance and body shape and might not be able to respond to threats as quickly as she could before she became pregnant. Do not hesitate to utilize sedation and ask for help in restraining animals for treatment.

Take-Home Message

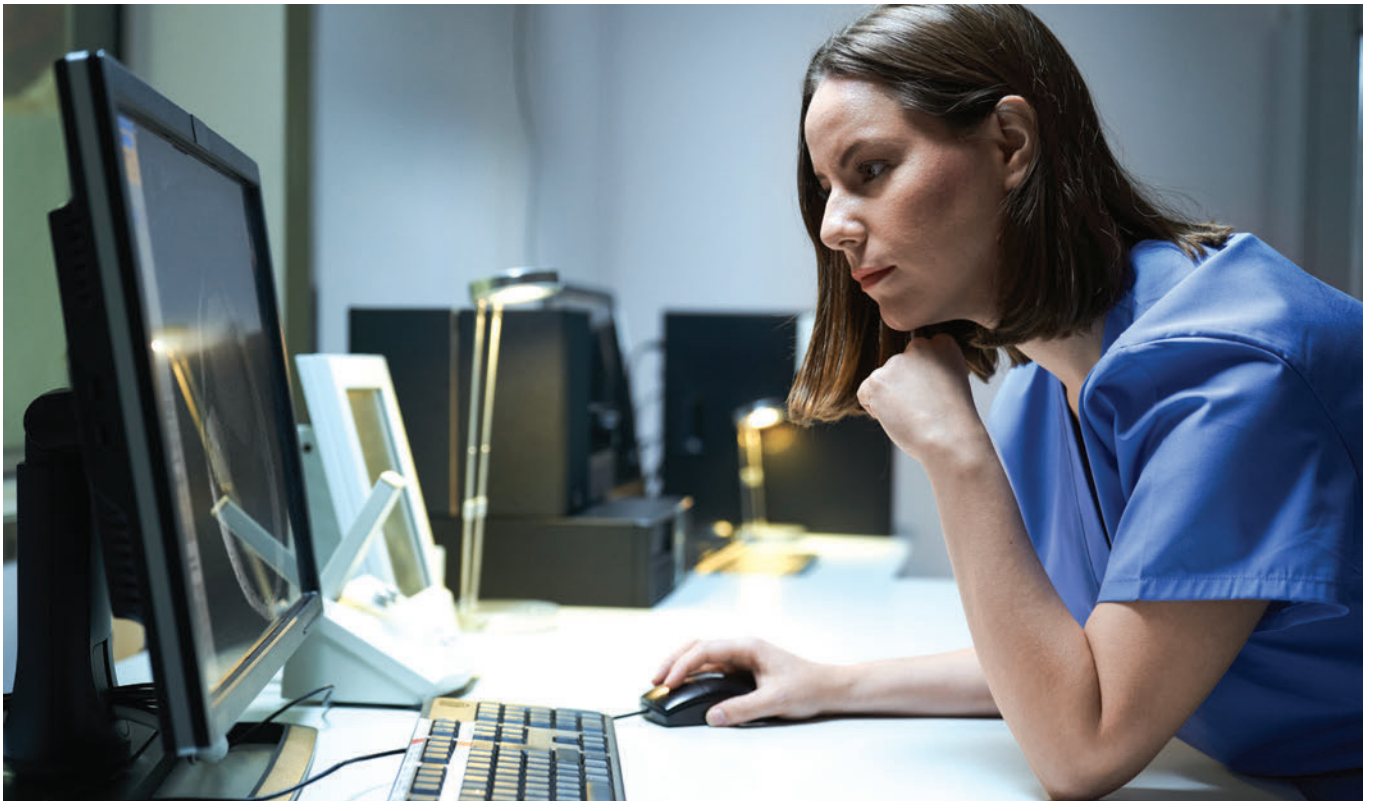
Educate yourself about the risks in your workplace. Discuss these with your obstetrician and practice owner soon after you find out you're pregnant. There will be many decisions to make, some of which will be difficult, but the detrimental effect of failing to take precautions could cause a lifetime of difficulty for your child.

Together with your employer and physician, you can decide whether you need to take special precautions or modify your work duties during your pregnancy. You need to feel comfortable with your choices. Most employers will be understanding, but not all.

The practice will be affected for about a year with each pregnancy, and as the child grows, the company might be affected further with childhood illnesses, medical appointments and school events. Some family-oriented practices celebrate those parts of life, but other practices don't.

Remember that you have many choices in employment in equine veterinary medicine these days. It is your responsibility to shape the life you want to lead. EM

Editor's note: References for this article can be found in the online edition on EquiManagement.com.



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Veterinarian-Client Communication During the COVID-19 Crisis

The way we interact with our clients now will determine whether our businesses can be revitalized when this is over.

By Colleen Best, PhD, DVM, BScH

We are living through a global time of uncertainty, where a virus has leveled a number of playing fields and amplified the disparities amongst others.

Regardless, it's not business as usual for anyone right now.

It's unclear when any of us will be returning to "usual," and whether it's going to be the same "usual" as before.

The way we interact with our clients now will determine whether our businesses can be revitalized when this is over. Specifically, embracing a relationship-centered model of care—or renewing your dedication to it—is perhaps the only way to safeguard the health of your business during this tumultuous time.

The way we choose to conduct ourselves and our businesses during this time will be remembered and will impact client loyalty going forward. Roosevelt had it right when he said "nobody cares how much you know until they know how much you care."

When interacting with clients, we need to focus on building or maintaining strong relationships and addressing the needs of both the client and the horse. What this is going to look like is going to be dependent on a number of factors, some within and some outside of your control.

Focus on Clarity and Transparency

An obvious initial consideration is what constraints exist from a government or regulatory standpoint.

Many jurisdictions have already gone through the process of determining what services are essential, and, as far as I know, urgent and emergent veterinary care has made the list everywhere.

However, for many jurisdictions, preventative care did not.

It is important to have thought through how you operationalize these constraints in your practice, as well as what social distancing practices you are implementing, so you are prepared to address client questions on what services you are able to provide.

As you think of how you are engaging with clients during this time, be sure to focus on clarity and transparency, as they are critical pieces of all effective interactions. This is a great opportunity to practice being clear in your boundaries and asserting them with clients.

There is very clear justification for them, and there are many layers of support from public health and veterinary organizations. Those guidelines take the subjective nature of boundaries off the table in this circumstance.

The tough piece is being assertive, and at the start, that can just mean clearly sharing with clients what the policies of your practice are.

Note that I said "practice policies." Even if you are a solo practitioner, it is worth distancing yourself and saying these are practice policies. That removes the personal nature of the conversation.

Further, whenever possible, communicate with clients in advance of their horses needing care what the policies of the practice are, particularly pertaining to availability of services. This can be accomplished via a newsletter/email, website updates or social media.

The more prepared you are, and the calmer and more confident you can be in the moment, means you can set up the interaction to come up for success.

Partnership

At the start of the interaction with the client, it's valuable to acknowledge that things are vastly different from what we're used to in terms of how the veterinarian-client-patient interaction will occur, as well as in a broader context.

We must actively consider how the current state of our local, state, national and international communities is impacting our patients, clients, farms and ourselves. This is going to support finding common ground with clients during interactions. This is very meaningful, because finding common ground is a critical early step to being able to partner effectively with the client.

Partnership supports effective care provision, as well as conflict management, should differences or conflicts arise.

Another value of partnership to consider is that it implies a reciprocal relationship—each person is a partner in the relationship, and while not the same, both roles are essential to a successful outcome.

In terms of how to turn this into something actionable, ensure that you've clearly shared with the client what responsibilities are theirs, and which ones you are taking on. Further, make a plan to update each other as needed going forward.

For instance, if you had planned on doing a follow-up scan for a horse's tendon injury but you are not able to do that at this time, share with the client what he or she can be doing (hand walks, small paddock turnout), what kind of information it would be helpful to have about the horse's response to the plan (Is he calm? Acting out badly? Any increases in swelling or heat in the leg?), and what to do if anything unexpected happens.

This type of conversation empowers both partners, as well as creating a sense of security should something unexpected come up.

In times when many people are feeling alone, physically and emotionally, knowing they are supported is powerful.

Keep Tabs on Your Capacity

In working toward effective communication during this time, it's critical to have a sense of yourself, including your energy, patience, and emotional tolerance. Being self-aware isn't always easy,

The way that we interact with our clients now will determine whether our businesses can be revitalized when this is over.

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and in the prolonged crisis, your capacity to handle things will fluctuate. Keeping an accurate tab on your capacity will allow you to use your most precious resource—yourself—judiciously.

One of the primary reasons that we need to be self-aware is that our state of being markedly influences our non-verbal cues in an interaction.

Non-verbal cues, which include facial expressions and body language, as well as para-verbal cues (such as speed of speech and vocal tone), account for about 80% of our messages. The words we use make up the remainder.

The challenge is that we are often less aware of the non-verbal cues that we are sending, because we cannot see our body language or hear our voices the same way other people do.

Additionally, our non-verbal cues often more accurately represent our feelings and emotions in contrast to our words, which transmit our intentional messages.

Further, when our verbal and non-verbal communications do not match up, the recipient is more likely to believe the message transmitted by our non-verbal communication.

A useful example is the use of the word "fine." Can you think of times when you responded "fine" to someone asking how you were when you were definitely not fine? Or when you really were perfectly alright, and said fine?

Precisely—the context and our non-verbal cues are what the other person responds to, not the word itself.

What does any of that matter, and why particularly in the current crisis?

It matters because we are all muddling our way through right now, experiencing varying degrees of worry, anxiety and hope. Being aware of your non-verbal cues and what is going on for you beneath the surface will help ensure you are communicating authentically and with integrity.

Conversely, we need to pay particular attention to the non-verbal cues of the person with whom we are communicating. That person is also fighting for normalcy, fighting to manage big worries and emotions, fighting to figure out how to go forward and take care of his or her obligations.

This might mean that our clients are not at their best—they might not be taking in information as well as usual, or they might be less rational and angrier, or they might be less patient.

How can we handle this? How do we approach our interactions when we might not be feeling the calm we're hoping our client is feeling?

The first thing to do is to ensure you're focused on the present moment. Anxiety stems from borrowing worry from the future or reliving events of the past.

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Video chats help you tune in to non-verbal cues from your clients.

We are lucky that there are many aspects to equine practice that provide us opportunities to ground ourselves in the here and now. We get to spend time outside—pause, feel the sun (or breeze) on your body; what can you smell, what does the ground feel like under your feet?

Engaging your senses is a great way to remind your whole self that you are safe in the moment.

Another option would be to take a minute to intentionally connect with a horse, find his or her itchy spot and remind yourself of how simple and joyous that can be. When we focus on one small tangible thing, it helps bring us back to the present.

Empathy

Finally, this article would fall woefully short without discussing empathy. Empathy entails having a curiosity and understanding for another's experiences and a non-judgemental attitude to providing support to them based on their experiences and perceptions. The importance of this in the current climate cannot be overstated.

It's important to remember that we are all experiencing unprecedented world events, many of which have shaken our sense of safety and pulled into question our ability to meet our basic needs and responsibilities. When this happens, our midbrain, the part in charge of survival, takes over. The result of this is we lose our capacity for executive functioning, problem-solving and emotional control for the time that we are experiencing that fight, flight or freeze response. Many people are battling their midbrains to find their way back to their normal functioning.

Add the complications that arise from social distancing and/or telemedicine practices, and it can be difficult to understand what's going on for the client.

One of the best ways to approach this is to ensure that you've checked in with the client about how he or she is doing prior to starting to talk about the horse and whatever health issue is at hand. Also, be open to acknowledging the difficulty of this situation for everyone. An "I wish" statement can be very powerful and also supports partnership—"I wish we could do that recheck this week; unfortunately, that's not possible."

Remember:

- Take care of yourself.
- Take care of each other.
- Take care of business.

We are all finding our way through a maze that has never been navigated before. The best way through it is to partner with your clients, be aware of your personal resources and use them judiciously, and to embrace empathy like you would lube your arms at a dystocia! EM

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By Nancy S. Loving, DVM

Girthiness in Horses

Sometimes usually well-behaved horses turn into monsters when girthed up, and clients ask vets why.

Horse owners often turn to their vets to help explain some behavioral quirks in their horses. This is especially true when usually well-behaved individuals turn into monsters with snaking heads, biting jaws, flattened ears, swishing tails, humped backs and attempts at sidewise maneuvers to avoid an action they resent.

A common problem arises when a rider attempts to tighten the girth or cinch on his or her horse. Some horses never like this action, so their behavior is excused as just being "girthy." Other horses never pay any attention to the girth tightening—until they do so violently.

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Some horses commonly react to tightening of the girth or cinch, but some horses suddenly react violently and unexpectedly to this part of tacking up for a ride.

With this in mind, a research project looked into possible reasons why a horse might display "girthiness" [Millares-Ramirez, E.M., and Le Jeune, S.S., Girthiness: Retrospective Study of 37 Horses (2004-2016), *Journal of Equine Veterinary Science* 2019, vol. 79; pp. 100-104]. Twelve years of records at the University of California, Davis, Veterinary Teaching Hospital were reviewed on 37 horses presented primarily for a complaint of girth aversion.

A variety of breeds or types were represented, including Thoroughbreds, warmbloods, Arabians, Quarter Horses and ponies. Dressage predominated as the equestrian pursuit, followed by pleasure riding, jumping, endurance, trail riding and three-day eventing, with a couple of other horses involved in barrel racing and therapeutic riding.

The medical records detailed findings from full physical exams that included vital signs and musculoskeletal evaluation with palpation of the back and limbs along with passive range-of-motion and flexion tests. Horses were also exercised on hard and soft ground, on straight lines and on longe lines. Other evaluations included gastroscopy (13), abdominal radiography (3), saddle fit (7) and ultrasound (which was done on a case-by-case basis).

Of the 13 horses that had gastroscopy, 12 were positive for gastric ulcer disease. Ten of the 12 had equine gastric ulcer syndrome (EGUS) severity of Grade 1 and 2, and two horses were categorized as Grade 3. All were put on omeprazole therapy (4 mg/kg orally once daily) for at least a month. The more severe ulcerative disease cases were treated for three to six months. All 12 owners reported that girthiness resolved with omeprazole treatment.

Ten of 37 horses were positive for

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orthopedic issues, including thoracic and lumbar vertebral osteoarthritis (4), cervical vertebral osteoarthritis (3), bone spavin (2) and front limb lameness (1). Each problem was addressed individually. Owners reported that all 10 horses improved with appropriate treatment for their musculoskeletal issue.

Back pain was evident in three horses due to ill-fitting saddles from a broken tree, an overly narrow gullet or uneven flocking. The saddles were changed to ones with a good fit, and all three received acupuncture and chiropractic treatment with positive responses.

The other 11 "girthy" horses had a variety of diagnoses, including painful withers, liver abscess, ovarian tumor, sternum pain, aneurysm of the vena cava, urinary tract infection, girth mass, sand impaction, sacroiliac pain and one simply had a behavioral issue.

Overall, the primary reasons for girthiness in this retrospective study were from gastric ulceration (37%), orthopedic issues (27%) or poor saddle fit (8%). Prophylactic omeprazole treatment is recommended in advance of transport, competition or in conjunction with use of NSAIDs to minimize EGUS development.

Lameness under saddle often elicits behavioral changes due to pain, and girthiness might be one such sign. Vertebral pain can be amplified by girth tightening and/or when the horse is ridden. An ill-fitting saddle contributes to atrophy and pain of the epaxial muscles as well as localized pain and/or abnormal wear on hair beneath the saddle.

Many times, horse owners present their horses to their veterinarians expecting instant analysis and identification of their horses' behavioral problems. Such owner expectations are challenging to the equine practitioner, particularly with owners who don't want to invest considerable financial resources in tracking down the reason for a horse's discomfort.

Because of the non-specific nature of girthiness, it is recommended to do a thorough physical and musculoskeletal examination and to explore other possibilities through gastroscopy and imaging. Careful evaluation of saddle fit by a competent saddle fitter is also instrumental in uncovering possible reasons for a horse's aversion behavior.

While girthiness was a complaint in only 0.09% of the medical records reviewed over a dozen years in this retrospective study, it is still a large cause of concern not only because some horses can become dangerous in their aversion behavior, but also for the impact it can have on a horse's performance. It is likely that there are many more cases of girthiness that are not brought to the attention of equine veterinarians.

During veterinary visits, it might be worthwhile to inquire whether a horse is experiencing such an issue; then you can offer a systematic strategy to identify a possible source of the problem. Ultimately, this helps to improve a horse's comfort and performance, as well as improving client satisfaction. EM

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