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Open letter from a disillusioned vet school grad

Why one student's letter blew up on social media

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Research veterinarian files suit against University of Texas facility

Dr. Brian Gordon says he was wrongfully terminated after speaking out against cruelty to research animals.

By Hannah Wagle, Assistant Content Specialist

In March, Brian Gordon, DVM, DACLAM, filed suit against the University of Texas Medical Branch (UTMB) in Galveston, Texas, from which he claims he was wrongfully terminated in 2015 for speaking on behalf of "animals who cannot speak for themselves," according to court documents. Gordon, who worked as an attending veterinarian caring for UTMB laboratory animals, claims he spoke out about monkeys being allowed to suffer and die without the help of euthanasia during biomedical research.

According to court documents, the research lab, which mainly focused on the testing of diseases such as Ebola and the Marburg virus, was supposed to follow a specific protocol in accordance with the Animal Welfare Act (AWA): "The animals were supposed to be humanely euthanized once their condition deteriorated to a certain degree," the lawsuit states, "and researchers had specified that death was never supposed to be an endpoint."

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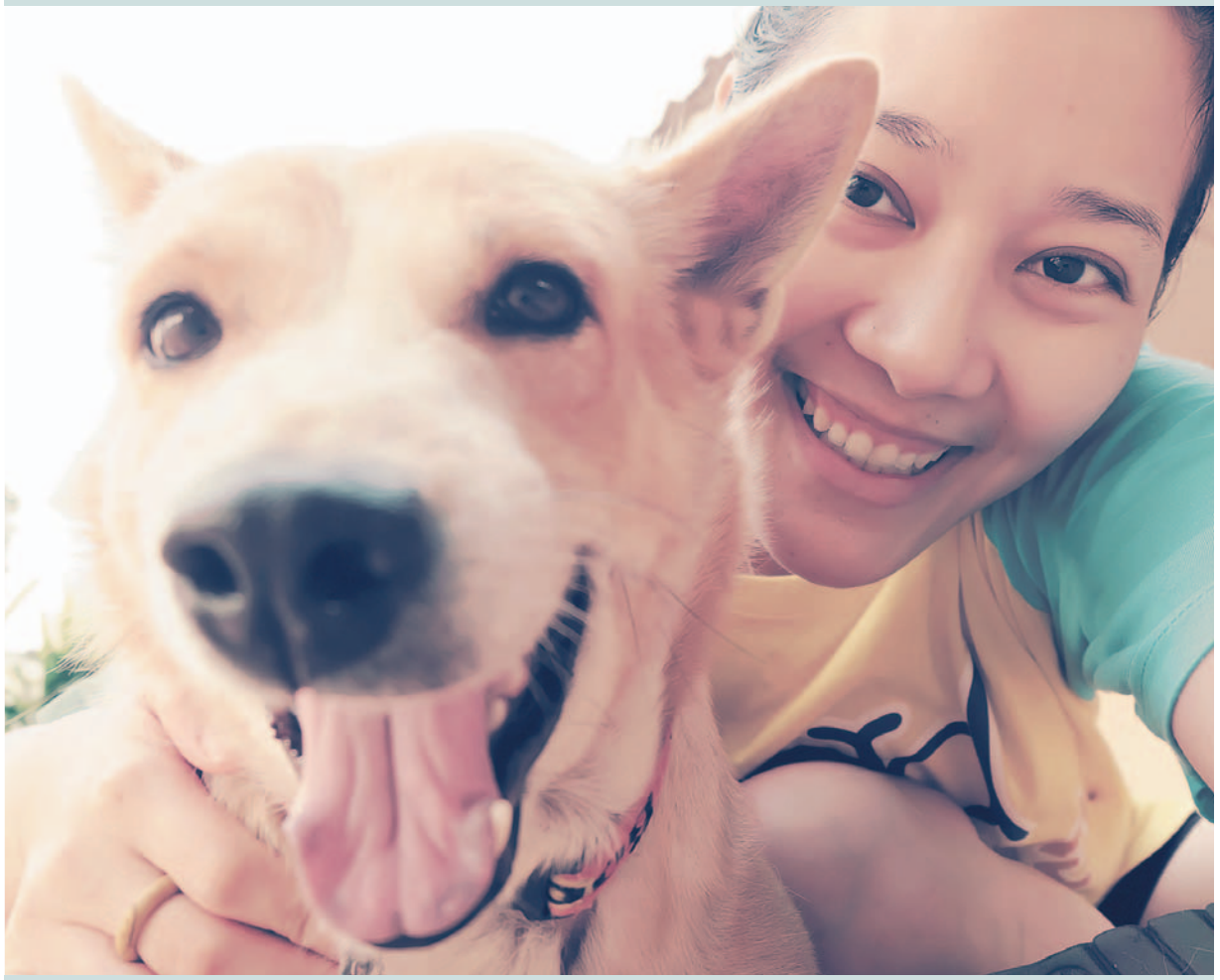

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REFERENCES: 1. Pollmeier M, Toulemonde C, Fleishman C, Hanson PD. Clinical evaluation of firocoxib and carprofen for the treatment of dogs with osteoarthritis. *Vet Rec.* 2006;159(17):547-551. **2.** Data on file at Merial.

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Continuing education that inspires.

“This was my first year speaking for (and attending) the CVCs and frankly, I’m blown away. Every part of both the Virginia Beach and KC events was well organized, well attended, personal, and simply fun. They didn’t seem too big, too small, they were perfect. It was very exciting to see the engagement your team is inspiring in the profession. Even the “doodles” are inspiring!” — Dani McVety, DVM

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UBM

Exploring the canine brain

Dognition helps pet owners understand—and bond with—their dogs.

Recently a number of us who work on dvm360 and associated publications have been immersed in an experience called Dognition. Dognition is a program (see dognition.com) that purports to test a dog's personality and cognitive abilities and assign it to one of a number of profiles: Charmer, Socialite, Maverick, Stargazer and so on. The tests were developed under the leadership of Brian Hare, PhD, director of the Duke Canine Cognition Center, and the program has some published scientific results to back up its legitimacy.

As a recent dog owner (and a self-proclaimed cat person/non-dog person until I married into dog ownership), I was intrigued and decided to join the group participating in Dognition as part of an editorial project on pet enrichment. Maybe I'd learn something that would help me become a better dog mom.

What I learned is that asking a dog to solve problems with his brain—even if he's highly motivated by the treat being used as incentive—is exhausting for both dog and owner. Having been warned by some colleagues who did all two and a half hours testing at once and found it grueling, my husband and I decided to break up the experience over a number of days. Even so, Alvin was more than ready to be done after 30 to 45 minutes of problem-solving (or the absence thereof), and so were we.

I also learned that it's really fun to have a structured way to interact with your dog. We spend time regularly going through Alvin's training repertoire and attempting to expand it (with mixed results), but this was much more involved and gave us more insights into how his brain works. One finding: When Alvin focuses, he can usually figure out the right answer (although Dognition insists with every data point that there is no "right" answer). But getting him to maintain his focus even for 30 seconds is tough. Closing the doors to the room and not letting anyone walk through helped a lot. Another surprise: I thought any dog would be able to find a simply hidden treat (under a cup or sheet of paper, for example) based on smell. But Dognition says no, despite dogs' excellent sense of smell, they actually rely on other cues in these situations. And darn if they're not right!

In the end I learned that Alvin is a Socialite (not surprising given his ecstasy when anyone new shows up), cunning (it took him less than two seconds to take that treat when our backs were turned) and an all-around exceptional dog. We didn't need a test to tell us that, but when the experts in canine cognition tell you so, you take it! **dvm360**

NAVTA seeks national veterinary nurse credential

NAVTA's Veterinary Nurse Initiative Coalition will pursue legislative amendments in all 50 states.

The National Association of Veterinary Technicians in America (NAVTA) board of directors has created a coalition that will seek legislation in all 50 states establishing a credential of registered veterinary nurse (RVN). The new credential would be a substitute for the titles of registered veterinary technician (RVT), licensed veterinary technician (LVT), certified veterinary technician (CVT) and licensed veterinary medical technician (LVMT).

The Veterinary Nurse Initiative Coalition is currently defining its legislative strategy and targeting 2018 to begin initial legislation reform efforts, according to a NAVTA release. Along with a single title used nationwide, the association is also looking to unify credentialing requirements and scope of practice.

The title change and standardization of requirements will help the profession gain better recognition, increased job mobility and elevated practice standards, says Kara M. Burns, MS, MEd, LVT, VTS (nutrition), president-elect of NAVTA. "All of this will lead to better patient care and consumer protection," she says in the release.

The Veterinary Nurse Initiative Coalition will work with the American Veterinary Medical Association, American Association of Veterinary State Boards, industry and professional organizations, and legislators to create common terminology, policies and procedures. These will be made to ease the burden on individual states and associations in governing credentials, NAVTA states. The initiative will start with several states in 2018 and then continue to work with any other state interested in the change.

Coalition member Heather Prendergast, BS, RVT, CVPM, SPHR, says, "Our goal is to reduce and remove the confusion associated with the designations for a veterinary technician. … Once a single designation is established, each state will be able to align with a standardized credential for the profession."

Kenichiro Yagi, MS, RVT, VTS (ECC, SAIM), another member of the coalition, says the process of evolving from "veterinary technician" to "veterinary nurse" began last year with extensive research on the legality of the name change and the level of industry support, as well as a review of the current credentialing. The process could take several years, Yagi says, because of the need to ensure alignment and support at the national and local level from a legislative, industry and individual perspective.

To learn more about the Veterinary Nurse Initiative, email vetnurse@navta.net. **dvm360**

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FDA warns about risk of possible accidental overdose of dogs treated with Sileo

The drug, manufactured by Zoetis, is used to treat cases of noise aversion in dogs.

The United States Food and Drug Administration (FDA) is warning veterinarians and dog owners about the risk of accidental overdose to dogs treated with Sileo, according to an agency release. Sileo (dexmedetomidine oromucosal gel), manufactured by Zoetis, is a prescription gel given to dogs by mouth to treat noise aversion (signs related to anxiety or fear due to noise).

The drug is packaged in an oral dosing syringe with a ring-stop mechanism on the plunger that must be "dialed" and locked into place in order to set the proper dose for the dog. Overdose can result if the ring stop isn't fully locked. The FDA stresses it's very important that the person administering the product understands how to operate the syringe correctly before giving the product to the dog.

Zoetis began marketing Sileo in May 2016. Since then the FDA has received 28 reports involving overdoses in dogs due to the ring-stop mechanism not properly locking at the intended dose. In some cases, the release states, the entire contents of the dosing syringe were administered to the dog. In 15 out of 28 cases, dogs experienced clinical signs of overdose, which include lethargy, sedation, sleepiness, slow heart rate, loss of consciousness, shallow or slow breathing, trouble breathing, impaired balance or incoordination, low blood pressure and muscle tremors. No deaths have been reported as result of an overdose.

At this time, the agency has not determined if the overdoses were due to improper use of the ring stop. Veterinarians and pet owners should be aware of the possibility of accidental overdose if the Sileo syringe isn't properly locked before dosing. The FDA strongly encourages veterinarians and their teams to provide education in proper operation of the syringe and the potential signs of overdose to dog owners before dispensing the drug. It's also important to advise pet owners to contact their veterinarian if they see any of these signs.

In a statement, the manufacturer says, "We at Zoetis take these reports seriously. The health and well-being of animals is our highest priority. As with any prescription medication, it is important for pet owners to fully review the instructions to ensure proper administration to a pet. So that dogs fully benefit from Sileo, we encourage veterinarians to discuss with pet owners how to use the syringe and administer Sileo. We also encourage pet owners to review the step-by-step dosing instructions that are included in the Sileo package and the instructional videos available online on the Sileo product website (www.sileodogus.com)." dvm360

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Canine influenza strikes the Southeast: **Another outbreak?**

Veterinarians and pet owners should monitor patients for signs of respiratory disease, isolate affected animals.

By Kathryn Primm, DVM

Here we go again—canine influenza is back in the headlines. H3N2, the same viral strain identified in a March 2015 outbreak in the Chicago area, seems to have gone south for the summer: This time it's hitting the southeastern United States, especially Georgia and Florida so far.

Two years ago the virus swept through Chicago-area animal shelters, making dogs sick with fever, coughing, sneezing and other respiratory signs. Many of these dogs experienced decreased appetite and some even progressed to secondary pneumonia. The virus is highly contagious, and dogs seem to be able to spread it even before they are clinically ill.

In early June, the American Kennel Club (AKC) issued a statement to all dog show exhibitors in the Southeast warning that there were reports of sick dogs from Georgia and Florida dog shows. The AKC recommended that if a dog seemed at all ill, it should not be exposed to other dogs and should see a veterinarian concerning the possibility of influenza.

The North Carolina Veterinary Medical Association also warned dog show participants about the outbreak because the dog show rotation was scheduled to place potentially exposed dogs in that state next.

The University of Florida has confirmed that this current outbreak of influenza is strain H3N2. The College of Veterinary Medicine in early June positively confirmed seven dogs as being infected, and several other suspected cases were pending identifica-

SUNDAYS PHOTOGRAPHY/SHUTTERSTOCK.COM

tion at press time. The University of Georgia's Athens Veterinary Diagnostics Laboratory identified two cases of canine influenza, but the strain had not been subtyped. Another Georgia lab positively confirmed one case of H3N2 during this outbreak so far.

By mid-June, canine influenza had been reported in a number of other states besides Flordia and Georgia. Local media outlets reported that the disease was affecting dogs in North and South Carolina, Tennessee, Kentucky, Texas and Illinois, and other states were on alert for the virus.

One veterinarian says these reports aren't telling the whole story. Richard Hawkes, DVM, of Moorehead, North Carolina, participates in dog shows and says he knows of more than 300 dogs that became ill in association with AKC events in Florida in mid- to late May. He himself had 10 dogs become sick, he says, one of which died in early June. A PCR test confirmed the presence of H3N2, Hawkes says.

During the 2015 outbreak, one study looked at the duration of shedding of active virus in order to guide isolation protocols for infected dogs. Dogs were shown to shed the virus for 20 to 24 days after infection.[1] Spread of the virus was slowed significantly when shelters implemented a 21-day isolation protocol, so owners of infected dogs should plan for extended isolation.

But isolation is only a part of disease containment. Vaccination can also play a role in stopping disease transmission dogs. Dogs considered to be at highest risk are those that participate in social activities or encounter groups of other dogs: boarding and grooming facilities, dog parks, dog shows and shelters are all potential venues for transmission.

"Dogs at risk should be vaccinated at least yearly with both influenza strains, H3N8 and H3N2," says Ronald Schultz, PhD, professor of pathobiological sciences at the University of Wisconsin School of Veterinary Medicine, in a release from Merck Animal Health, which offers a canine influenza vaccine. (Zoetis also manufactures a vaccine.)

Here are a few tips for veterinarians and pet owners:

- Any dog showing signs of respiratory disease should see a veterinarian as soon as possible.
- Veterinarians with patients that may travel, especially into or out of the southeastern United States, should consider offering a canine influenza vaccine.
- Any dog that resides in (or has recently traveled to) the Southeast should be closely observed for signs of respiratory disease.
- Any dog that becomes ill with canine influenza should be isolated for at least 21 days after illness to limit virus spread. dvm360

Reference

1. Newbury S, Godhardt-Cooper J, Poulsen KP, et al. Prolonged intermittent virus shedding during an outbreak of canine influenza A H3N2 virus infection in dogs in three Chicago area shelters: 16 cases (March to May 2015). *J Am Vet Med Assoc* 2016;248:1022-1026.

Mizzou dean steps down, accepts post at St.George's

After leading MU for 10 years, Neil Olson replaces retiring Timothy Ogilvie in Granada.

Neil C. Olson, DVM, PhD, has announced he is leaving his position as dean of the University of Missouri's (MU) College of Veterinary Medicine to take over as dean of the School of Veterinary Medicine at St. George's University (SGU) in St. George's, Grenada, according to press releases from both universities. Olson will take over on August 15 from St. George's current dean, Timothy Ogilvie, MSc, LLD, DACVIM, who held the position for three years and is retiring.

Olson will oversee the School of Veterinary Medicine's academic units, centers and initiatives, while providing leadership for the planning, development, implementation, assessment, and improvement of all of the school's programs, policies and infrastructure, the SGU release states. In addition, he will lead more than 100 faculty and staff at the university and will also represent the university among the 48 other veterinary schools accredited by the American Veterinary Medical Association Council on Education.

Dr. Neil Olsen

"I am honored to continue the great work that my predecessor, Dr. Ogilvie, has already laid out," Olson says in the release. "I hope to keep building upon our numerous partnerships with other institutions across the world to recruit and train the best veterinarians. I'm also excited to continue developing our curriculum so that veterinary students can take advantage of the unique global environment that Grenada has to offer."

Olson was dean of the College of Veterinary Medicine at the University of Missouri for 10 years, and the MU release notes that during that time he oversaw several notable achievements, including:

- > establishing the Veterinary Health Center in Wentzville, Missouri
- > growing the college's endowment
- > increasing enrollment
- > implementing improvements to facilities and diagnostic imaging capabilities
- > earning full accreditation from the AVMA Council on Education
- > receiving full accreditation from the American Association of Veterinary Laboratory Diagnosticians for the Veterinary Medical Diagnostic Laboratory, the MU release notes.

Prior to joining MU, Olson spent almost 25 years at North Carolina State University's College of Veterinary Medicine in a variety of administrative and professional roles. Olson received his DVM degree from the University of Minnesota and completed his PhD in physiology from Michigan State University.

The University of Missouri provost and interim chancellor, Garnett Stokes, has announced that Carolyn Henry, DVM, MS, DACVIM (oncology), will serve as the interim dean of the College of Veterinary Medicine, beginning August 1, according to an MU release. A national search for a permanent dean will begin in the fall. dvm360

Familiar bills introduced in Congress

Veterinary legislation is back as key players gear up for a continued fight.

For several years in a row, key players in organized veterinary medicine have fought a bill that would require veterinarians to hand clients a written prescription for every medication they prescribed for a patient. At the same time they have beseeched lawmakers to eliminate the tax on awards made to veterinarians serving in rural shortage areas. Neither bill has passed, to the simultaneous relief and consternation of many veterinarians involved in governmental affairs.

Now both bills are back, and efforts on both fronts are winding up again.

The Fairness to Pet Owners Act, first introduced in 2015 and reintroduced in 2016, lives again in the 115th Congress as H.R. 623, introduced by Jason Chaffetz (R-Utah). As the bill reads, it "directs the Federal Trade Commission to require prescribers of animal drugs to verify prescriptions and provide copies of prescriptions to pet owners, pet owner designees, and pharmacies, without the prescriber demanding payment or establishing other conditions."

The American Veterinary Medical Association (AVMA) has re-upped its opposition to the bill, maintaining that it would require veterinarians "to waste time on red tape instead of what's most important: caring for patients," a statement on the AVMA website reads. "Many veterinary clinics are small businesses with limited administrative resources, so this extra regulatory burden may impact the number of patients they can see or even force pet care costs to rise for consumers."

The AVMA continues that in most cases, clients can get a written prescription simply by asking, and in many states a law or policy already regulates this process. "There's no need for extra federal regulation on this issue," the association states. It is asking interested veterinarians to contact their state representatives to express their opposition to the bill.

On the AVMA's "to pass" list, the Veterinary Medicine Loan Repayment Program (VMLRP) Enhancement Act—also on a repeat in Congress—would lift the 39 percent tax on awards made through the Veterinary Medicine Loan Repayment Program. These awards forgive up to $75,000 of participants' student loans in exchange for three years of work in areas where veterinary services are scarce.

S. 487, introduced by Senators Mike Crapo (R-Idaho) and Debbie Stabenow (D-Michigan), is accompanied by companion bill H.R. 1268, introduced by U.S. Representatives Adrian Smith (R-Nebraska) and Ron Kind (D-Wisconsin).

As it stands now, federal loan repayment award recipients do not currently have to pay the 39 percent tax on the funds they receive. However, a large portion of the total amount the government allocates for the program—between $4 million and $5 million—goes to pay those taxes, reducing the number of awards that can be made. If the tax were not a factor, more than 100 additional veterinarians could have benefitted from the VMLRP since the program was instituted in 2010, according to a release from the AVMA. **dvm360**

Are worries about long-term use of robenacoxib in arthritic cats warranted?

Study shows that longer use may be OK, even in cats with kidney disease. *By Michael Nappier, DVM, DABVP*

Osteoarthritis (OA) is a common problem in feline patients, especially in those that are senior and geriatric. Nonsteroidal anti-inflammatory drugs (NSAIDs) are commonly used in many other species for relief from OA because of their analgesic and anti-inflammatory effects. Currently in the United States there are no NSAIDs approved for long-term use in cats. Long-term use of meloxicam is approved in Europe but is strongly discouraged in the U.S. because of concerns about renal damage. Robenacoxib (Onsior—Elanco) is currently approved in the U.S. for use of up to three days' duration for postoperative pain. It is reported to have good safety in cats, but there are currently no studies looking at safe usage in cats with OA, until now.

What they did

The authors recruited 194 cats from 26 different veterinary hospitals across the country that had a confirmed radiographic diagnosis of OA and a history of impaired activity for at least 12 weeks. Cats with existing endocrine, cardiac or chronic kidney disease (CKD) were not excluded from the study. On day one of the study a physical examination, complete blood count, serum chemistry profile, urinalysis and thyroid screen were performed. The cats were then randomly assigned to either a control group that received a placebo or a treatment group. The treatment group was administered 6-mg robenacoxib tablets at a minimum dose of 1 mg/kg every 24 hours with a dosage range for participants of 1 to 2.4 mg/kg every 24 hours. After 28 days, the blood screening was repeated. Repeat physical examinations were performed on days 14 and 28. A follow-up phone call was made on day 42 for an update on how the cats were doing post-study.

What they found

At the end of the study, no clinically relevant safety-related differences were found between the placebo and treatment groups. Twenty-one clinically serious adverse events were reported between the two groups. A clinically serious adverse event was defined as one that required medical intervention. However, the adverse events were relatively evenly divided between the groups (13 reports from 10 cats in the placebo group and eight reports from eight cats in the treatment group). No deaths or euthanasia occurred during the study. Even more interestingly, 40 cats were identified as having CKD and randomized, almost evenly, into the placebo (n = 22) and treatment (n= 18) groups. There were no significant differences between the groups for change in blood urea nitrogen and creatinine concentrations during the study. International Renal Interest Society (IRIS) scores for 87.5% of the cats in both groups did not change.

Takeaways

Robenacoxib was well-tolerated when given to cats for one month. No clinically detectable evidence of damage to liver, gastrointestinal tract or kidneys was found. Of particular interest is the lack of changes in the CKD group. The weakness of the study was the relatively small number of participants which may not accurately identify the likelihood of rare but serious adverse events. The authors caution that the study has only a 95% power to detect such side effects and that further study is recommended in a larger group to detect such potential rare adverse events. **dvm360**

For reference information and a link to the study abstract, go to **dvm360.com/robenacoxib**.

Surgery: Breaking down the optimal spay-neuter timing debate

Gone are the days when you're absolutely 100 percent sure what to say when a client asks the best age at which to spay or neuter a dog or cat. New research is showing possible ill effects of early spaying or neutering, resulting in some veterinarians recommending waiting until a patient is 1 to 2 years of age—or maybe not sterilizing a pet at all. Yet shelter policies often advocate these surgeries before a pet is adopted—often at a very young age. What to do?

We asked Philip Bushby, DVM, MS, DACVS, a member of the task force that helped create the updated Association of Shelter Veterinarians' 2016 Veterinary Medical Care Guidelines for Spay-Neuter Programs, this very question at a recent CVC, and he summarized all of the factors rolling into this complex question:

"You have to be willing to look at the different populations of animals. In the shelter environment, the recommendation of spay or neuter prior to adoption I think is absolutely appropriate, even if you're talking about a 6-, 7-, 8-week-old puppy or kitten. It's an absolute fact—there are examples all over the country of how spay-neuter prior to adoption reduces pet overpopulation, reduces shelter intake, reduces euthanasia of homeless dogs and cats. Then you get into the issue of, 'All right, this isn't a shelter animal. This is an animal that lives in my house, it sleeps on my bed—when should I spay or neuter that animal?' And that's where some of the confusion comes in. We've seen in the last few years three different articles coming out of the veterinary school at UC-Davis related to various orthopedic conditions and various cancers in golden retrievers, Labradors and German shepherds. When you read those articles, it gives the impression that certain orthopedic conditions and certain cancers are more likely if an animal is spayed or neutered, especially if it's spayed or neutered under a year of age."

Oh, those studies that show the possible detriment of early spaying and neutering?

"I think you have to be willing to look pretty deeply into those studies and question how valid are the results. I can't prove this—but I would suspect that the majority of animals that are not spayed or neutered—at least in the United States—are not spayed or neutered because the owners can't afford it. What percentage of those animals would ever show up at a referral hospital like UC-Davis because their dog is limping? Or because their dog has a small tumor? So there's a select population that's examined in those studies, which I think at least puts a question mark on the validity of the studies. That doesn't mean that there can't be any truth to them. And I think the veterinarian has to have a good heart-to-heart conversation with an owner and find out what the use of the dog is, how the dog is managed in the home—does it run free, how much access does it have to the outside—and involve the owner in the decision of when to spay or neuter it." **dvm360**

Spay early—prevent euthanasia due to overpopulation! Spay later—prevent future serious disease! You've heard both arguments. Dr. Philip Bushby is here to help you provide the best advice for your clients. Scan the code to watch now.

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The suit continues, "Dr. Gordon repeatedly complained about practices of veterinary care that did not minimize pain and suffering to the animals and otherwise do not constitute adequate veterinary care. Practices that do not minimize pain and suffering and otherwise do not constitute adequate veterinary care violate the AWA."

Throughout his employment at UTMB, Gordon says in the court filing, he was "admonished for expressing his opinion related to animal care and safety at the facility and he was criticized for not being a 'team player.'" After struggling with those in charge of the institution over the unreported suffering and deaths of the animals in his care, Gordon was terminated and cut off from the research laboratory completely, he says. For damages allegedly done to his reputation and finances, Gordon is seeking monetary relief of $200,000 to $1 million.

Recently, in an interview with *dvm360*, Gordon recalls when he was first hired. "It was already a fractured program," says Gordon, who now lives in North Carolina. "They'd just fired their last attending veterinarian. In the last decade, they'd had over five attending veterinarians. Clearly, they had problems."

What he didn't realize was that violations were occurring without his knowledge, he says. When the facility Gordon worked at was audited, much was brought to light—especially in regard to the veterinary care the laboratory animals should have been receiving. "It was a scathing audit," Gordon recalls, "but my concern was with the veterinary care that these animals did not receive. The animals were just put in a cage and allowed to die."

Gordon had other complaints about management of UTMB as well. "They hired an institutional official that had never once been in an animal facility and had no animal background—but still wanted to micromanage," he says. "She vetoed veterinary care, which prevented me from being able to discipline the veterinarians in charge of the animals. She wrote me up once for trying to find a better place for monkeys—they wanted to put them somewhere that was below sea level and surrounded by water. When I brought this to the attention of [the Institutional Animal Care and Use Committee], I was reprimanded for doing so."

The official in question, Associate Vice President of Research Toni D'Agostino, is named by Gordon in the lawsuit along with the institution. Gordon says he would like two things to come from his court case: compensation and increased awareness. "I see a trend with veterinary medicine when it comes to attending veterinarians," Gordon says. "If you want to keep your job, you have to do the wrong thing. That's not how I am as a veterinarian. The attending veterinarians are supposed to consult with the other veterinarians on animal pain and suffering and that's not happening."

Attorney Daphne Silverman, who is representing Gordon, believes this is a unique opportunity to send a message to the research community. "It's rare that a plaintiff like Dr. Gordon will come forward and it's rare that an attorney will take it," she tells *dvm360*. "These wrongfully terminated veterinarians don't want to make waves; they want to go quietly to their next job. When you make waves, the industry knows."

Gordon echoes these thoughts. "They're being threatened," he says of veterinarians who speak out against the treatment of laboratory animals. "I wouldn't even say it's subtle. Many in the field keep their heads down and I don't blame them. I've spoken with many in similar situations."

Attorney Chris Berry, who works with the Animal Legal Defense Fund (ALDF) and is assisting Silverman with Gordon's lawsuit, has worked on similar cases before. "In my experience, neglect is the most common form of animal suffering in laboratories," he says. "Maybe people just don't care or have become accustomed to the neglect and unnecessary harm done to the animals over time. But overall, costs matter and a lot of times we see corners being cut in order to minimize expenses."

Silverman and Gordon agree that the facility was ruled by those with money. "The guy in charge of all of the funding could basically do whatever he wanted or else he'd pull all of the money from the program," Gordon says.

"When you hit someone with money, they change," Silverman says simply.

This is Gordon's second lawsuit against UTMB. His original case was dismissed in February, with judges maintaining that the defendants were protected by sovereign immunity and that Gordon had failed to address several required elements in his claim.

Silverman almost immediately appealed the case once it was dismissed. "We missed some things," she admits. "I noticed this and drafted an amended proposition. It's broader and states every claim. When I saw the glaring problems, I corrected them—but at the same time the judge was preparing a dismissal order based on the very order I'd already seen as inaccurate."

This time, Gordon says he has a better understanding of what to expect. "If I see anything monetarily, I'll be surprised," he says. "What I'd like is to change what it means to be an attending veterinarian. They shouldn't be the fall guy when something goes bad. Veterinarians are good people with good intentions. They want to make animals comfortable, reduce pain and stress—and they're stopped by people and corporations that don't have that in mind."

Silverman says her eyes have been opened during this experience. "When you start getting involved in something like this, you learn stuff that isn't open to the public," she says. "I'm imagining that most of the human doctors benefiting from this [research] don't even know."

Gordon asserts that it's possible for a research facility to be run properly—and for lab animals to be cared for humanely—but standards may be slipping. "There are good institutions that want everything run right—I've been through some of those places," Gordon says. "I'd been through 25 years with no compliance issues until I came to Galveston. What I've seen over the years is change. I was part of a team that got to go in and work for the betterment of the animals—now all they want is veterinarians to be compliance officers."

Berry, the ALDF attorney, agrees. "Dr. Gordon saw something that was wrong—in this case, monkeys were dying from diseases when they were supposed to be euthanized beforehand—and ultimately he was fired because of it," he says. "It's a sad lesson to take away, but it's one that UTMB seems comfortable with constructing. When all is said and done, it's my hope that veterinarians don't need to feel afraid about speaking up when they see something wrong."

"Caring for animals is the No. 1 priority for veterinarians," Silverman says, "and that's what Dr. Gordon is seeking. Most of the time, institutions pick someone they can control. If veterinarians stood up against this, I imagine that they'd have to tighten the enforcement of these laws."

Repeated attempts by *dvm360* to reach UTMB for comment on this story were unsuccessful. **dvm360**

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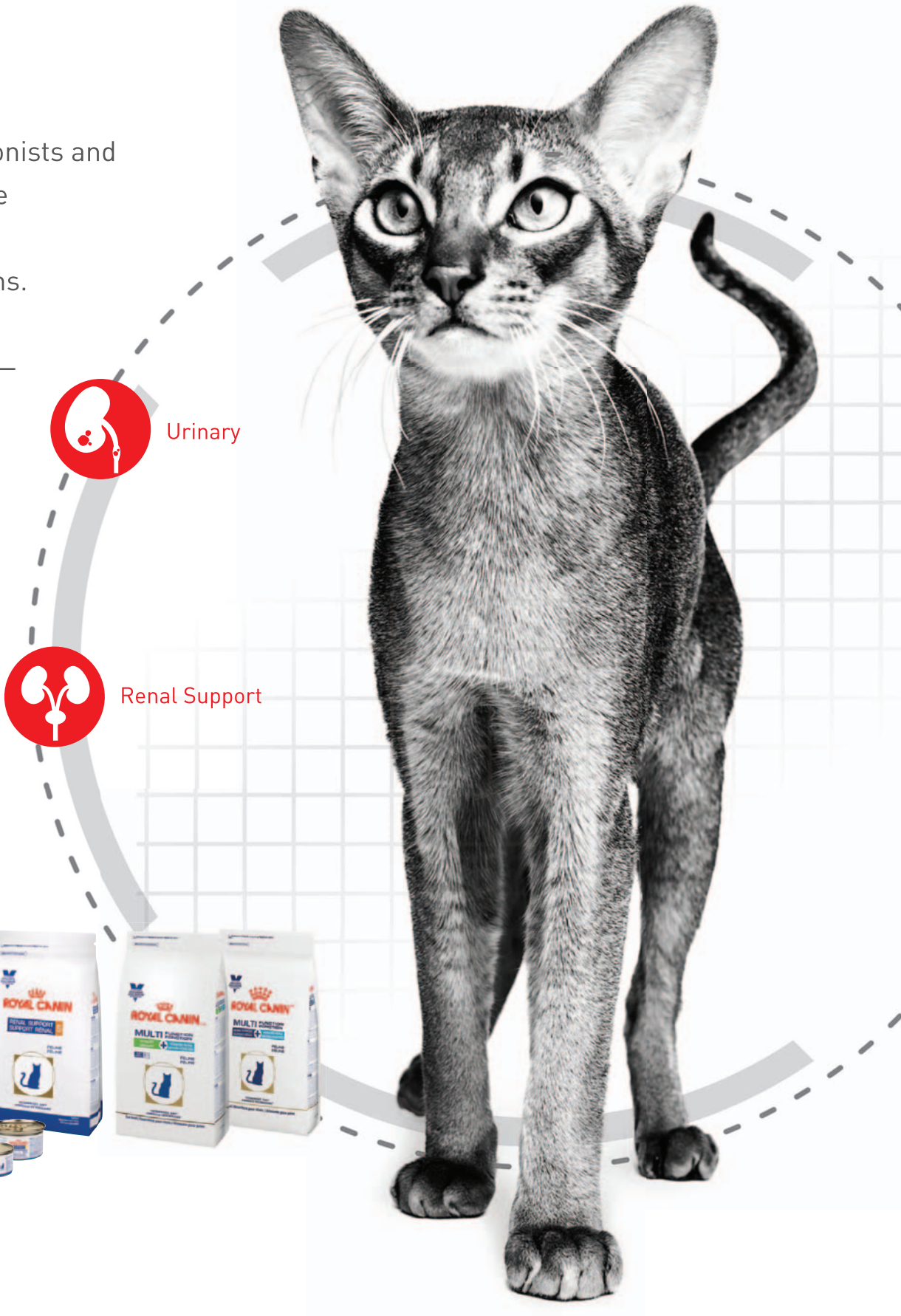

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The CHANGING pet owner: 5 trends

Important but subtle changes taking place in the pet-owner population will have a dramatic impact on veterinary practices soon—if they're not already. Some of these changes may affect your practice more than others, says John Volk, CVC speaker and veterinary-market analyst—the key is to know which are happening in your neighborhood and how you can address them among your clients.

1 Financial stress

One of the things the Great Recession taught us is that financial pressures do indeed impact veterinary care, Volk says. And even though the U.S. has been in an economic recovery period for a number of years, many pet owners are still experiencing pressure to make ends meet. Median earnings for U.S. men haven't changed significantly since the 1970s when adjusted for inflation, Volk says. Women's earnings have improved in that time, so that helps in two-parent households—but there are fewer of those than ever (more on that momentarily). In a nutshell, we're still a long way from where we were before veterinary visits started declining in the early 2000s.

But wait, you say. Business was rocking and rolling in the early 2000's. Maybe visits weren't increasing rapidly for many veterinarians, but business was good. Here's why, according to Volk: Remember the housing bubble? From 2001 to 2006, Americans pulled $5 trillion—yes, *trillion*—out of their inflated home values and spent it on things like big-screen TVs, cars, restaurant meals, vacations and, yes, veterinary care. That's about $17,500 for every man, woman and child in the U.S. That money is gone, and it won't return anytime soon, Volk says. For one thing, the housing bubble is over. For another, people are saving more than they've saved in a long time. That's a good thing for their financial security. But it does mean that they're spending less on veterinary care and other discretionary items.

What's more, the recovery hasn't occurred evenly across the economy, Volk says. It has heavily favored the well-educated. In Chicago, for example, where Volk is based, median earnings are still well below 2007 levels in all categories except those with graduate degrees. Underemployment is still rampant, especially among those with less than a college education.

The result of all this is a declining middle class, Volk says. Since 2000, the middle class has declined from 54 percent to 50 percent of the population (continuation of a trend—in 1971 it was 61 percent). So what exactly do we mean by "middle class"? According to the Pew Research Center, a family of four with an annual household income of $44,000 to $132,000 is considered

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11:00 AM - Stuck in the Stone Age: What you need to know - Dr. Jody Lulich

1:30 PM - Chronic Kidney Disease - diagnosis and prevention of progression - Dr. Dennis Chew

3:00 PM - Urine soiling behavior? Urinary Disease? Making the right call - Dr. Jeff Nichol

5:00 PM - To Pee or Not to Pee, The Sr. Pet Dilemma Dr. Heidi Lobprise

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middle-class, as is an individual who makes $22,000 to $66,000. Correspondingly, lower socioeconomic levels have increased since 2000, from 27 percent of the population to 29 percent, and the upper groups have seen a similar gain, from 18 percent to 21 percent.

If you practice medicine in an upscale neighborhood, this may sound like great news, Volk says. In the last 30 years, the only demographic group that has experienced an increase in net worth is the upper class! But if you serve the 80 percent of Americans who are not in the upper class, be aware that there's still a lot of financial pressure on your clients.

Implications for veterinarians. This financial stress—and the resultant decline in disposable income—will make it more difficult for veterinary practices to continue to raise prices. There's evidence that inflation in the cost of veterinary services is driving pet owners away and causing continuing declines in veterinary visits, Volk says. That's a losing proposition for you, your clients and the patients you care for.

So look for ways to manage pricing, especially for shopped and routine services. Try to improve value, not price. Also look for ways to make it easier for clients to pay for your services—things like monthly preventive care plans, pet insurance and medical credit cards such as CareCredit.

2 Less homeownership

Homeownership in the U.S. is declining. These days more adults are living with their parents than anytime since the 1940s. Case in point: In 2015, more men 18 to 34 years old were living with parents or relatives than married or living with a significant other, Volk says. And almost as many women aged 18 to 34 were living with family versus married or cohabiting. There has also been a shift from owning to renting homes, Volk says. Pet population tends to follow household formation, and household formation took a big hit during the recession—in patterns that seem to be settling in long term.

An unrelated trend that doesn't bode well for pet ownership is the aging population. Pet ownership tends to start declining when adults reach 50 to 55 years of age and declines to very low levels by the time people reach 70 or older, Volk says. And guess what? The 55-and-older cohort is the fastest-growing population group in the U.S.

Implications for veterinary practices: If you're not seeing a lot of new veterinary clients, the stagnation of the pet population may be a factor, Volk says. That means you have to work all the harder to attract new clients. More people are sourcing pets from shelters and rescue groups than ever before. Volk suggests working with these organizations, as well as breeders, and welcome organizations to identify people who may have a new need for veterinary services.

3 More single-parent families

The percentage of American households with two parents is declining, Volk says. In 2014 only 69 percent of households had two parents, down from 87 percent in 1960. Twenty-five percent of households are headed by a single mother, and an additional 15 percent of households have the mother as the sole or primary breadwinner. In most but not all of those households, mean income is lower than those in which men are the primary breadwinners, Volk says.

Implications for veterinarians: In single-parent households, time and often money are challenges. Offering convenient hours can make it easier for these busy clients to fit in veterinary care. Volk says, by way of example, that

Don't just target the same group of clients you've always targeted. These new groups need care for their pets, too. But they may purchase veterinary services differently than the clients you've traditionally served.

his daughters—both full-time professionals—take their children to the pediatrician on Sunday morning (because every pediatrician in downtown Chicago offers evening and weekend hours). Want to get really crazy? Consider a "veterinary van" or "doggie daycare bus" to pick up pets and bring them to your facility for services.

4 More millennials

Now Volk has better news. Currently those in the 25 to 29 and 30 to 34 age cohorts are the third- and fourth-largest groups in the U.S. By 2020, those two groups will be the largest population groups. This is the age range when people are most likely to purchase a home, get married, have children and acquire pets, Volk says. In fact, many of them are deferring having children and acquiring pets instead.

These millennials are partly responsible for an uptick in the number of households owning pets, Volk says. But while they are favorable to owning pets, they're different from their parents when it comes to pet care. Brakke Consulting, Volk's firm, conducted a study recently and learned that millennials are less dependent on veterinarians for pet care advice and are more open to purchasing healthcare products and services from nonconventional sources. They are also more likely to outsource services than their parents, so they are heavier users of pet daycare, boarding and grooming services. (Another Chicago example: Some veterinary practices are offering dog walking services for their clients.)

Implications for veterinarians: If you offer daycare, boarding or grooming services, millennials are an excellent target for your services. In addition, keep in mind that many of these are first-time pet owners, so it's worth your while to spend extra time educating them about proper pet care, including proper veterinary care.

5 Changing ethnicity

Every year, the U.S. becomes less white and more diverse. In fact, within 50 years, all of us—regardless of race or national origin—will be minorities, Volk says. In recent years, the greatest influx of immigrants has been Latinos. But the tide is turning, and increasingly Asians will be the predominant immigrant group. Today 87 percent of pet-owning households are white. By 2025—less than 10 years from now—only 60 percent of pet-owning households will be white, Volk says. And different ethnic groups have different approaches to pet ownership and pet care—as well as different levels of resources to fund them.

Implications for veterinarians: Make sure you're reaching out to all the potential constituencies in your trade area, Volk recommends. If you have a large Latino or Asian population in your area, reach out to them through their community organizations and religious institutions. And make sure your staff reflects the ethnicity of your clientele.

Again, what's going on in your own neighborhood is what matters most, Volk notes. But changing demographics can quickly sneak up on you. Be alert to financial pressures on your clients, or to shifting racial or ethnic cohorts in your neighborhood. Don't just target the same group of clients you've always targeted. Those new groups need care for their pets, too. But they may purchase veterinary services differently than the clients you've traditionally served. dvm360

>>> From the outside looking in: When the Charlotte Animal Referral & Emergency (CARE) team purchased their 23,214-square-foot building in an office park near uptown Charlotte, North Carolina, they had a vision. They renovated approximately 12,000 square feet of the building, reserving 11,000 square feet for future expansion. The renovated exterior has an industrial feel, with galvanized steel siding, but the wood awnings guide the eye toward the natural materials of the lobby.

Designing for top-notch **patient CARE**

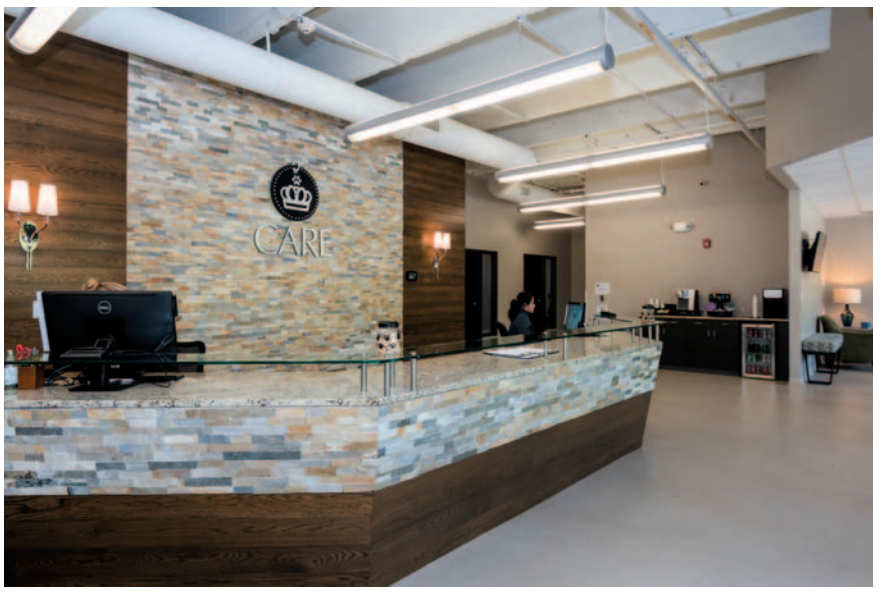
From the hotel-like lobby to the cat and dog alcoves, find out how this emergency and referral hospital renovated its space into a stress-free environment for clients, staff and, most importantly, pets.

By Ashley Griffin

Welcoming. Relaxing. Stress-free. These aren't usually the first words that come to mind when you think of emergency veterinary care. However, the team at Charlotte Animal Referral & Emergency (CARE) in Charlotte, North Carolina, was up to the challenge of rewriting the emergency clinic experience. And we'd say they succeeded, considering they took home a Merit Award in the 2017 Veterinary Economics Hospital Design Competition.

"Visiting the ER or veterinary specialist can make people very nervous, and we wanted to take every opportunity to reduce their stress," says one hospital co-owner Peggy Sayer, DVM, DACVIM (cardiology).

From the natural lighting to a hotel-like lobby to the alcove cat- and dog-friendly reception areas, find out how they renovated their space into a brand new, stress-free environment for clients, staff and, most importantly, pets.



>>> A warm welcome: When clients walk through the double-door entry with their pets, they see smiling staff members and a stone and wood signage wall. Stone and wood also cover the front of the reception desk that's topped off with granite. And this 24/7 clinic comes with snacks 24/7. The waiting room is complete with comfortable armchair seating, large-screen TVs and complimentary WiFi.

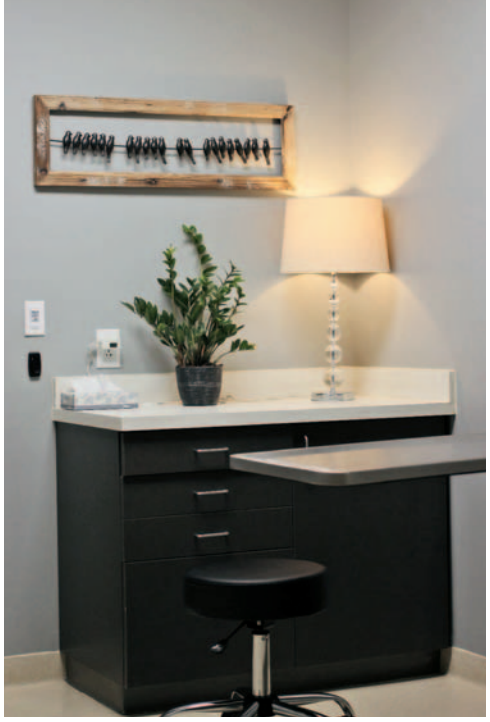
1 Welcome clients naturally

When the CARE team purchased their 23,214-square-foot building in an office park, they wanted to renovate approximately 12,000 square feet and leave 11,000 for expansion, along the way creating a warm environment while providing state-of-the-art veterinary care. This is why the lobby area is a wide open space with an abundance of light and natural elements.

"Use of natural materials such as marble, stone, wood and glass along with earth-tone colors create a relaxing environment," the team writes in their entry notebook.

And don't forget the snacks! The waiting room is complete with comfortable armchair seating, large-

PHOTO COURTESY OF BRIAN OSBORNE, THE PROFESSIONAL PHOTOGRAPHY GROUP



>>> Earthy exam rooms: The hospital comes equipped with eight exam rooms designed to be both comfortable and functional. Continuing the theme from the lobby, these rooms keep the residential feel through the use of incandescent lighting, soothing color schemes, rustic art and comfortable, cushioned bench seating.

>>> Locate the lab: The hospital's lab features a variety of equipment to provide top-notch patient care: two Catalyst chemistry machines, a complete blood count machine, a SediVue Dx Urine Sediment Analyzer, a SNAP test reader, centrifuges, a microscope and a fridge.

screen TVs, complimentary WiFi and refreshments.

"Concessions are a variety of soda, coffee, tea and chips—you'd be shocked how happy a bag of SunChips can make someone," says Dr. Sayer.

2 Make staff members happy

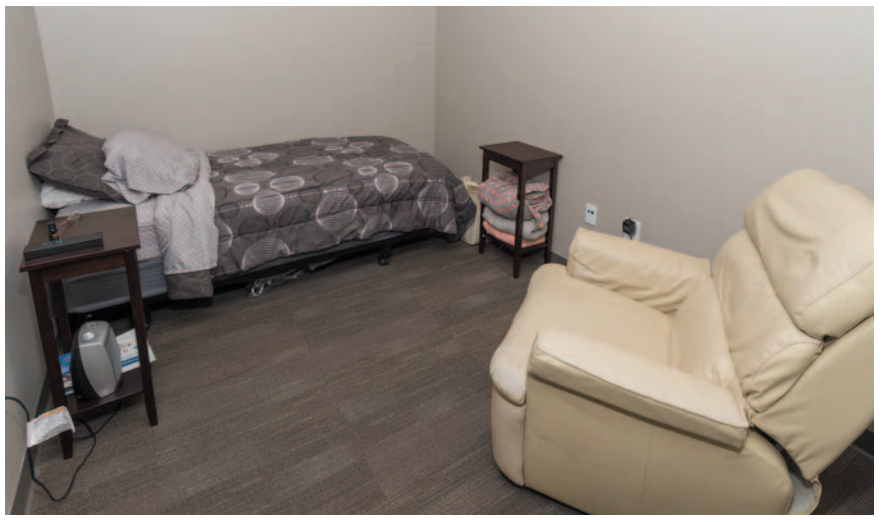
Operating a 24/7 veterinary hospital means going the extra mile for team members as well.

"The working section of the hospital was designed to preserve the atmosphere established in the lobby area and exam rooms with a goal of making CARE a setting where it's enjoyable to work," the team writes in their entry.

Team perks include a "sleeping room," complete with a bed and a recliner, designed as a quiet space for

CARE by the numbers

Owners: Dr. Laura Dvorak, Dr. Amy Fauber, Dr. Margaret Sayer
Number of doctors: 10 full-time, 2 part-time
Exam rooms: 8
Total cost: $6,001,757
Building cost: $3,248,904 (building only; excludes land purchase, landscaping, parking lot, etc.)
Cost per square foot: $139.96
Square footage: 23,214
Structure type: Renovation freestanding
Architect: Cary Perkins, McMillan, Pazdan and Smith
Photographer: Brian Osborne, The Professional Photography Group



>>> A quiet escape: As a 24-hour facility, overnight staffing is a must, practice COO Jack Henderson says. This means a "sleeping room" is also a must. Complete with a bed, blankets and a recliner, this space is designed for doctors to snag a few moments of rest.

>>> Treat with care: Most treatment areas are strategically located along outer walls to take advantage of the large windows surrounding the building. Wide corridors in the hospital were built to enhance traffic flow throughout the space. "We felt that having good workflow in the ICU and treatment areas was vital, because all of our services use those spaces," says hospital co-owner Dr. Peggy Sayer. The team's treatment stations come equipped with two dry tables and two wet tables.

>>> Feline ward: The feline ward keeps cats calmer with minimal noise and plenty of natural light.

doctors to snag a few moments of rest. However, Chief Operating Officer Jack Henderson says the clinic is usually so busy that the room is used more as a private space for nursing mothers.

"There's also a break room with a full kitchen so employees can prepare meals," Henderson says.

3 Design with pets in mind

And last, but certainly not least, one of the hospital's major goals in the design process was to offer top-notch patient care. This is why they built an in-house computed tomography scanner and installed a mobile magnetic resonance imaging trailer that remains on site.

"CARE is one of only two animal hospitals in the region with these capabilities," the team says.

In addition, the feline ward was designed to keep cats calm with extra thick walls (to minimize noise) and an outdoor view of bird feeders. The lobby also has separate waiting alcoves for dogs and cats.

"Realizing that any vet visit is stressful for the animal, our goal in separating species was to minimize that stress," Henderson says. dvm360

Ashley Griffin is a freelance writer based in Kansas City and a former content specialist for dvm360.

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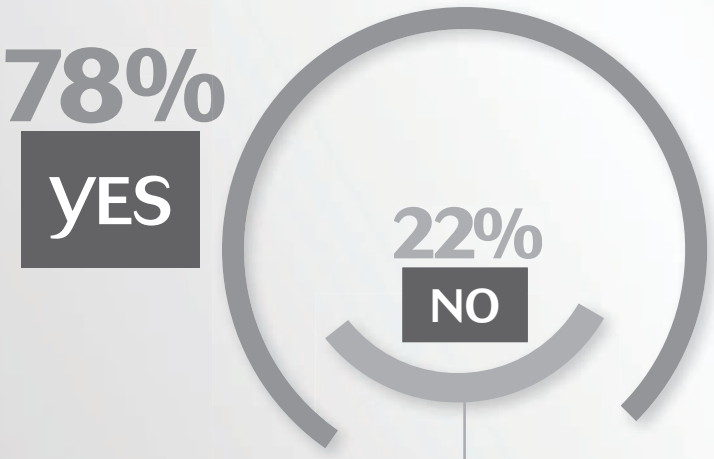
See brief summary on page 24

50 shades of gray: Data on digital radiography

How much do you love your digital radiography system? Is it an obsession or just a fling? We asked survey-takers to share the opinions on what digital radiography does for their productivity in practice and what it'll look like in the future.

Data show that over the past seven years, use of digital radiography in veterinary practice has nearly doubled.[1] We wanted to see how far the industry has come, and where it's headed in the future.

Does your practice have a digital (direct or computed) radiography unit/system?



Of those who said no, **77%** said they planned to purchase a DR unit/system within the next 5 years.

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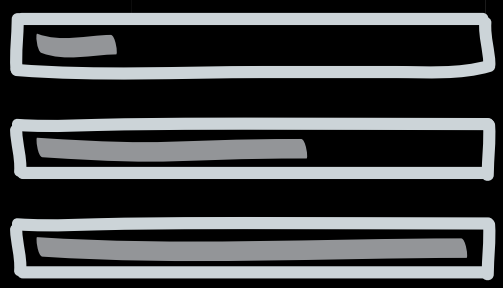

- **12%** Mobile digital radiography
- **57%** Digital dental radiography
- **90%** Digital radiography stand-alone system/unit or compatible with an existing, standard x-ray system

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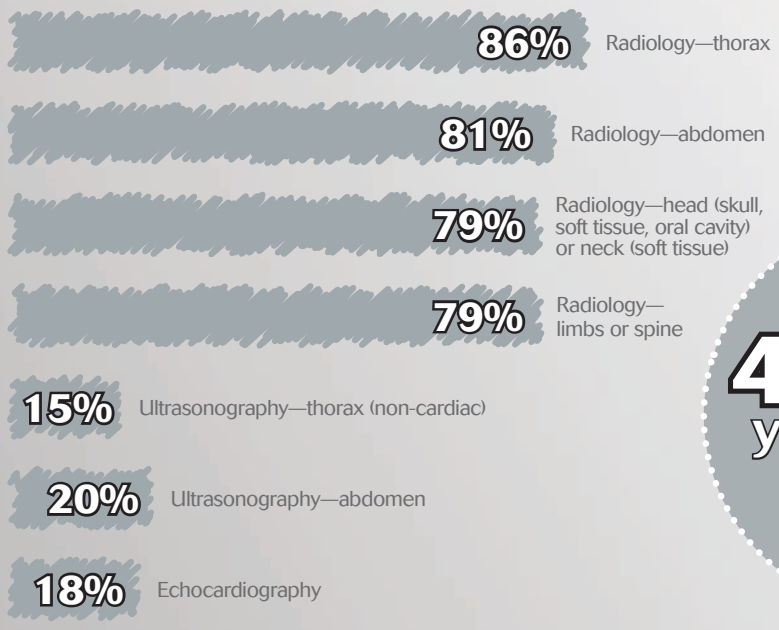
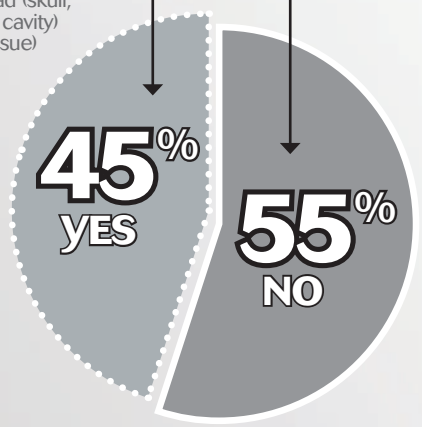
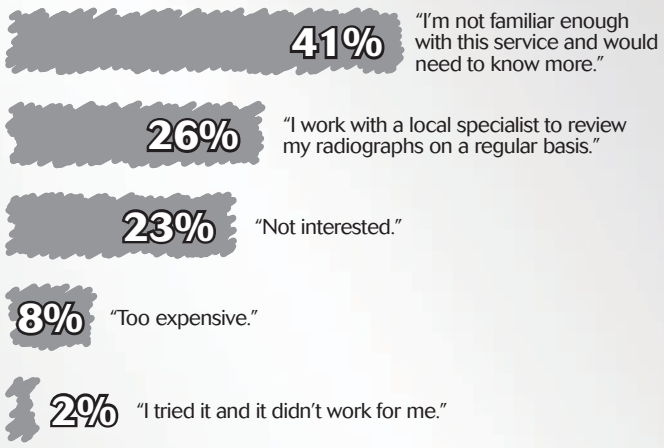




Why not?



References
1. Small Animal Veterinary Digital Radiography Survey by Brakke Consulting. Find more information at **dvm360.com/doyoudigital.**

Data source
The dvm360 clinical updates survey on digital radiography was sent in April 2017 to subscribers of dvm360, Vetted and Firstline, and garnered 213 responses, with a 6% margin of error.

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[1]Floerchinger AM, et al. Effects of feeding a weight loss food beyond a caloric restriction period on body composition and resistance to weight gain in cats. *J Am Vet Med Assoc.* 2015;247(4):365-374.

[2]Kruger JM, et al. Comparison of foods with differing nutritional profiles for long-term management of acute nonobstructive idiopathic cystitis in cats. *J Am Vet Med Assoc.* 2015;247(5):508-517.

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The veterinary debt-to-income ratio: Good news, but also a warning

A robust economy has helped this financial indicator trend in a positive direction. But for the health of the profession, more needs to happen.

By Bridgette Bain, PhD, and Michael Dicks, PhD

After the 2016 Fix the Debt Summit, the American Veterinary Medical Association (AVMA) partnered with veterinary colleges, practice owners, professional associations, students and others to stop the growth of the debt-to-income ratio (DIR) and bring it down if possible. Strategies have included:

> appealing to the government to eliminate interest accumulated on student loans while in school

> reducing interest rates to be more in line with the risk of the loan

> informing veterinary school applicants that they don't need numerous hours of unpaid veterinary experience in order to be accepted

> increasing scholarships for veterinary students

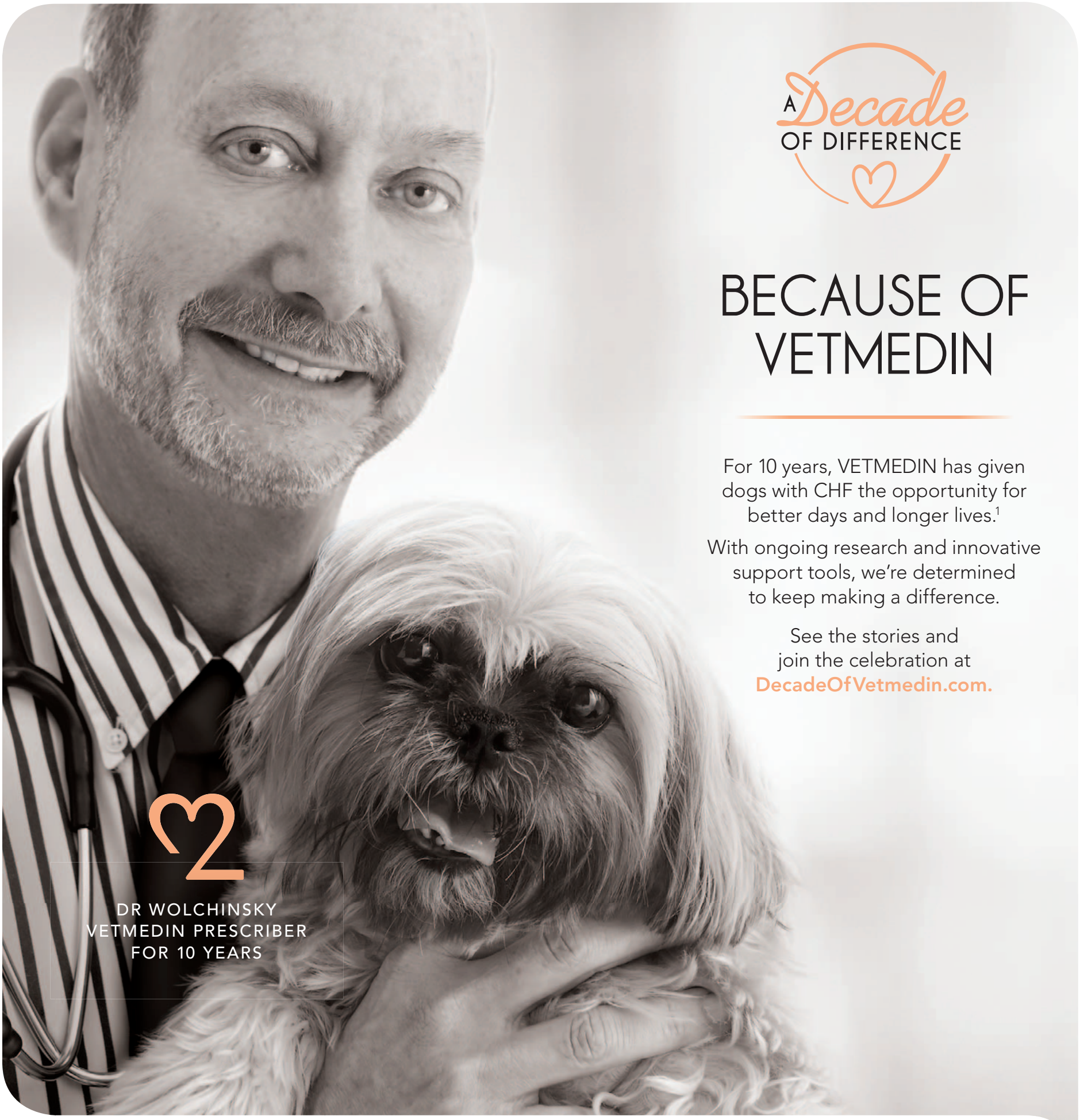
> increasing financial literacy among practice owners and students

> enhancing the demand for veterinarians.

These tactical approaches are designed to either reduce veterinary debt or increase veterinarians' income.

So what's the big deal about DIR again? Here's a review

The DIR measures the debt and income of a constant cohort of graduates from U.S. colleges of veterinary medicine. This key performance indi-



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Reference: 1. Lombard CW, Jöns O, Bussadori CM; for the VetSCOPE Study. Clinical efficacy of pimobendan versus benazepril for the treatment of acquired atrioventricular valvular disease in dogs. *J Am Anim Hosp Assoc.* 2006;42(4):249–261.

Please see Brief Summary on page 28.

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TABLE 1: VETERINARY EDUCATION EXPENSES, 2015 AND 2016

	2015	2016
Total debt	$410 million	$418 million
Tuition and fees	$367 million	$403 million
Living expenses	$231 million	$228 million
Interest expense	$67 million	$70 million
Total cost	$664 million	$701 million
Number of students	2,895	2,930

cator (KPI) signifies demand for new veterinarians—it weighs the price society is willing to pay for veterinary services against the cost to veterinarians to acquire the training needed to develop the required veterinary skills. A rising DIR indicates that society's willingness to pay for veterinary services is not keeping pace with the increasing cost to veterinarians to obtain the required skills.

Total debt for 2016 graduates of U.S. veterinary colleges was estimated at $418 million. The total cost of education was estimated at $631 million for all 2,930 graduates. This included $403 million for tuition and fees and $228 million in estimated living expenses. The interest expense for borrowing these funds would have been an additional $70 million, bringing the total cost of the education to $700 million. However, students received some internal assistance and applied various outside funds to pay for some of these expenses; thus total debt was only 60 percent of the total cost. In 2015 total debt was 62 percent of total cost. See Table 1 above for more detail.

What the economy means for veterinary DIR

The veterinary profession has considerable control over factors that affect the DIR—but it can't control the economy. Currently the U.S. economy is in an expansionary phase, and while we can't predict when the next economic contraction will occur, we can be sure that it *will* occur at some point in the near future. An economic contraction—also known as a recession—will adversely affect the DIR in two major ways.

First, state budgets and funds

KRASIMIRA NEVENOVA/SHUTTERSTOCK.COM

[1] Poulet H, Minke J, Pardo MC. Development and registration of recombinant veterinary vaccines: The example of the canarypox vector platform. *Vaccine*. 2007;25:5606–5612.

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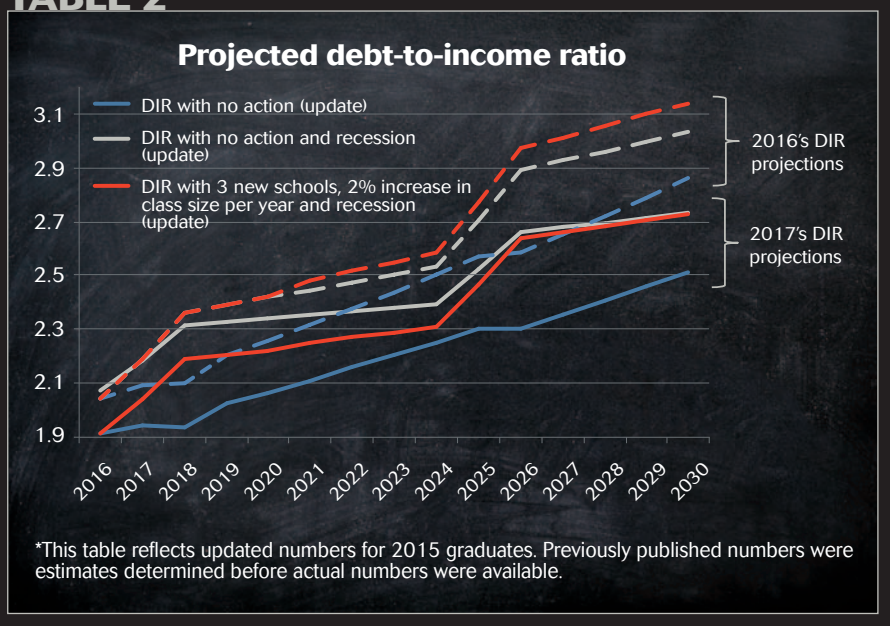
Total debt for 2016 graduates of U.S. veterinary colleges was estimated at $418 million. The total cost of education was estimated at $631 million for all 2,930 graduates.

TABLE 2



*This table reflects updated numbers for 2015 graduates. Previously published numbers were estimates determined before actual numbers were available.

allocated to state universities will be reduced and this expense will be transferred to students, either through increased costs or increased numbers of students accepted into veterinary programs, which will reduce starting salaries. Second, consumer expenditures will decline during a recession. This will reduce the demand for veterinary services and consequently veterinary salaries. During a recession the DIR is likely to increase beyond trend levels.

Last year we provided a 15-year forecast for (1) the DIR, (2) the DIR in a recession, and (3) the DIR in a recession with the addition of three new veterinary schools and a 2 percent increase yearly in students accepted at existing U.S. schools. In Table 2* (above) we've updated these projections.

We updated the DIR forecasts for 2017 to 2030 by adding to the existing data the actual debt, income, number of graduates and new veterinarians finding full-time employment in 2016. The new 2017 DIR forecast is lower, as is the rate of increase over time. This is a result of slower growth in debt for 2016 (approximately $2,000 less than forecasted) and a greater increase in starting salaries (approximately $1,500 more than forecasted). Other variables that made a favorable impact on the DIR projection were a higher percentage of new veterinarians finding full-time employment and the actual versus projected value of gross domestic product per capita.

A positive outlook, but action needed

This DIR outlook is positive: There was no growth in the DIR year over year, and the current forecast indicates a slower growth in the DIR than last year's forecast predicted. As much as we'd like to credit the Fix the Debt Summit for these encouraging changes, it's unlikely that they came about because of that initiative. The real story is that we're experiencing a more robust economy.

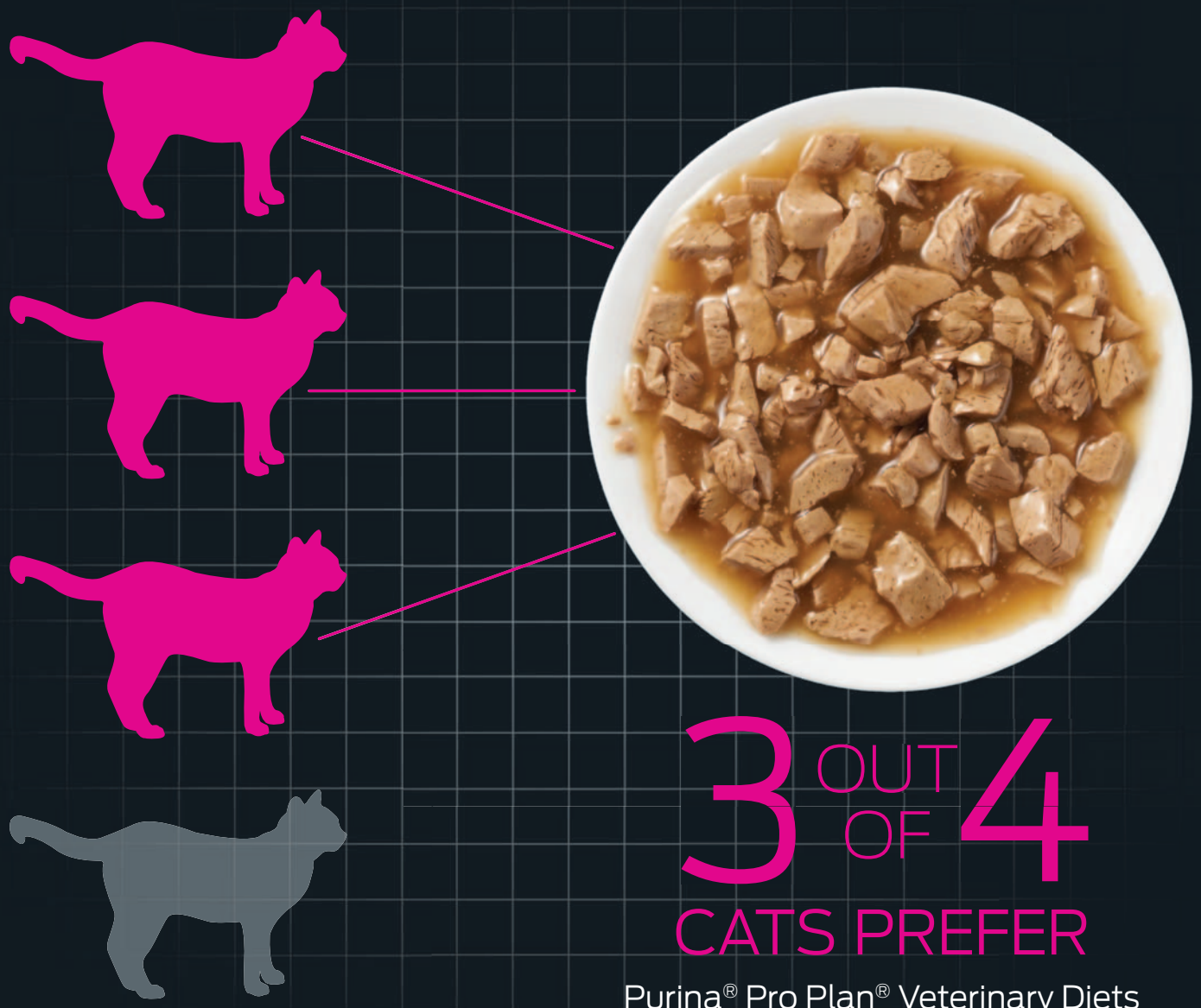
While we should be glad for this good news, there is cause for concern: The DIR hasn't declined even though the economy has been in an extended period of moderate growth. Because we're facing an increasing likelihood of economic contraction, we must start to see the DIR decrease during the economic expansion in order to guarantee the future health of the veterinary profession.

It's commendable that the profession has begun the conversation on the rising DIR, but let's not lose sight of the urgency of the situation. We need to implement both long- and short-term strategies quickly in order to avoid a problem that becomes too large to fix. **dvm360**

AVMA | Veterinary Economics

Dr. Bridgette Bain is an analyst in the AVMA's Veterinary Economics Division. Dr. Michael Dicks is director of the division.

3 Out of 4.
Need We Say More?



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A letter from a disillusioned veterinary school graduate

While the financial problems plaguing veterinary education may hog the spotlight, this veterinarian says it's time to talk about the issues occurring behind closed doors and within closed minds.

Recently I had an interesting conversation with a technician at work. She's bright, motivated, diligent and interested. She wanted to be a veterinarian when she was younger, but those dreams went by the wayside due to life circumstances and finances. Her father asked her if, since she's now working in a veterinary hospital, her old desires had been rekindled. Did she still want to be a vet?

"I think you would make a good veterinarian," I told her. "But I don't think you should go to vet school." The recent grad and the fourth-year extern standing nearby echoed my sentiments.

Why did we offer this advice? And why are veterinary students so unhappy? Why do they suffer from anxiety and depression at alarming rates? It's a multifaceted problem, but everything boils down to incredible anger about our experience in vet school.

Anger because we worked hard with little reward. Anger because we had to sacrifice our hobbies, social lives and emotional well-being to study, do grunt work and write volumes of paperwork no one would ever read. Anger because we were at times mistreated, yelled at and punished for things we didn't do.

Anger because we were bombarded by statistics and articles that say vets are overpopulated, vets make salaries that aren't consummate with the time and tuition they put out, vets are to blame for killing animals or practicing pseudoscience and are crucified on social media—with career- and life-ruining effects.

Anger because we watched animals suffer and die needlessly, were witness to errors we didn't have the power to fix and slogged on daily through injustice and mismanagement.

It's true that veterinary medicine attracts type A people. But I'm not referring to stress from internally driven motivators. There's a prevailing attitude that people need to "put in their time." This field needs collaboration, camaraderie and healthy competition. Instead, it has backstabbing, gossip and cutthroat antagonism. And at the university, I saw efforts to sabotage careers out of personal vendettas. I

Here's a sampling of some of the comments we received on dvm360.com and **facebook.com/dvm360**. Read the full letter and add your own comment at **dvm360.com/disillusioned**.

> I hope that your life improves and that you can let go of your past resentments. I am sure that the clinician who missed the diagnosis was crushed inside. The senior staff members "hiding" in their office likely have an insurmountable mass of paperwork themselves. Being negative towards others' dreams or wishes is on you now, as that is what you have done. A lot of the experience of vet school is just human nature in times of stress. It's important to keep your focus on your patients and learning. Be kind. Work hard. Study well. Practice courtesy. Try to inspire others. And don't ever say technicians don't work hard.

Been there. Sadly.

Seems whiny.

> Anger can only take you so far, new graduate. I will agree that I witnessed more ugly scenes in academia than are appropriate in a professional setting, but I left it in the past. Act on the power you have to control your professional destiny. Don't allow circumstances to drag you down into a world of self-pity and cynicism. Nobody is going to come and rescue you.

saw great attempts to discredit and embarrass clinicians in front of their students and peers. I saw patient care go by the wayside, a casualty of intra- and interdepartmental quarrels. And I saw—and even received—unjustified, over-the-top criticisms and punishments in order for someone to maintain a façade of undeserved authority.

I believe the following guidelines to serve as counterpoints to the negative behaviors I observed as a student.

Be realistic. If the head clinician is overwhelmed, the house officers probably are, too, and the students are probably running around like maniacs trying to keep the whole thing afloat. Each person should try to recognize when someone is in over their head and help out accordingly. There were many times I witnessed technicians sitting around gossiping or snacking while students juggled menial patient care and other pressing responsibilities—or when senior clinicians vanished to an office hideout while underlings were left to clean up messes. And 15-hour days, five days a week, plus emergency shifts, nighttime patient medication and walking, and weekend care isn't sustainable for students.

Be respectful. The Golden Rule still applies, even when superiors aren't watching. I've witnessed some heinous behavior from respected "professionals," directed at students and doctors.

Be receptive. Sometimes good ideas come from unexpected places. Sometimes clients can diagnose their pets before the doctor can, because they know the animal better. Sometimes students are armed with more up-to-date knowledge on their cases than the clinician.

Be relevant. I've seen bad or outdated science touted as unquestionable fact. Universities should be at the forefront of medical progress, not stuck in the Stone Age out of stubbornness and reliance on "tradition."

This is how dialogue in the veterinary community ought to work. Please don't forget this. dvm360

Sincerely,
A Young Veterinarian

Internships—one question to assess them all

Here's an account of the benefits my group practice reaped from its internship program—and how we were able to cut the wheat from the chaff when it came to candidates.

Once my goal of establishing a group practice had been achieved, we had a staff of four doctors. The practice was incorporated—each of us owning 25 percent of the stock and 25 percent of the hospital real estate. We hired additional doctors as the practice grew and, at one point, decided to start an annual internship program. We recruited recent graduates from many different schools, including some from Europe.

It was brilliantly successful. For 25 consecutive years, each intern profited immensely from the experience working with a team of older colleagues, each having special skills and interests, in a practice that was two-thirds hospital-based (mostly dogs, cats and the small exotics) and one-third ambulatory (horses, food animals and a thriving zoo practice).

Every single intern contributed something to our practice. It could be a treatment learned at their school, a bookkeeping method or even the logo design on our stationery and doors. It was of mutual benefit.

A cut above the herd

We always tried to have all four partners interview the applicants for internship, but this was not always possible. For example, one year Dr. Larry Dresher was going back to his alma mater for a CE meeting. We asked him to recruit while he was there and told him we'd accept his decision. He selected a graduating senior.

When he returned, I asked what she was like. He asked me, "Well, you've worked on dairy farms, right?"

I said that I had.

"You know how there's a boss cow in every herd?"

I said, "Yes."

"Well, she's the boss cow in the senior class at Kansas State," he said.

As every one of our interns were, she was very satisfactory. She was one of several we invited to stay on, which she did. We also offered eventual partnerships to a few of our interns, but only one accepted the offer. As one put it, "That would be like marrying the first girl you ever dated."

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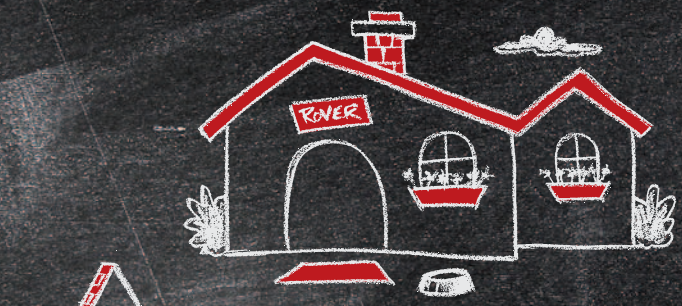

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References: 1. Levy SA. 2002. "Use of a C6 ELISA test to evaluate the efficacy of a whole-cell bacterin for the prevention of naturally transmitted canine Borrelia burgdorferi infection." Vet Ther. 3(4):420–424. **2.** Chu H., Chavez L. et al. 1992. "Immunogenicity and efficacy study of a commercial Borrelia burgdorferi bacterin." J Am Vet Med Assoc. 201(3):403–411 **3.** Levy S., Lissman B. et al. 1993. "Performance of a Borrelia burgdorferi bacterin in borreliosis-endemic areas." J Am Vet Med Assoc. 202(11):1834–1838. **4.** Levy S., Millership J. et al. 2010. "Confirmation of presence of Borrelia burgdorferi outer surface protein C antigen and production of antibodies to Borrelia burgdorferi outer surface protein C in dogs vaccinated with a whole-cell Borrelia burgdorferi bacterin." Intern J Appl Res Vet Med. 8(3):123–128.

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Asked and answered: The rating game

As chief of staff and founder of the practice, I also usually did a personal interview with the applicants. At the conclusion, I would ask, "What are your goals?"

I'm going to tell some of the answers to that question, and reveal my score on a scale of 0 to 10:

Interview 1

Me:	What are your goals?
Applicant:	My goals? Well, I have two passions—golf and surfing. I've already checked out the three golf courses closest to here and I like them. I also know that there is a surfing beach a half-hour's drive over the mountains. So this is the right place for me.
Me:	I've never golfed or surfed. (Note: I did caddy once as a pre-vet student for 10 days during spring break.) Can you do those things in the dark?
Applicant:	In the dark? Why would you want to do them in the dark?
Me:	Because you will be working from before sunrise until long after sunset if you intern here.
Score:	0

Interview 2

Me:	What are your goals?
Applicant:	My goals? To pay off the $40,000 debt my education cost. To find a job in a practice that offers the caliber of medicine I was taught. That's why I'm here. Also, to get my mother out of Harlem.
Me:	You're hired!
Score:	10

(She was with us several years, but her mother refused to leave Harlem.)

Interview 3

Me:	What are your goals?
Applicant:	To become an equine surgeon. To read in a newspaper that a horse I've operated on won an important race.
Me:	But this is a mixed-practice internship. (At this point he refused to pet my own dog who was seeking attention.)
Applicant:	I can endure that for a year.
Score:	0

(He became a successful equine surgeon.)

Interview 4

Me:	What are your goals?
Applicant:	To be my own boss in a veterinary practice. I grew up having to feed chickens, hoe the garden, pick strawberries, shovel manure—I've had it!
Me:	(Silence.)
Score:	0

Interview 5

Me:	What are your goals?
Applicant:	My goals? To get all the experience I can in a high-quality practice, interning with a good team of dedicated professionals, and, if it's mutually agreeable, maybe to stay on afterward as some of your interns have.
Me:	Sounds good.
Score:	10

(At the end of the year we offered him the chance to stay on, which he did. A few years later, we offered him a partnership. He said, "This is the greatest dilemma in my life. I love this practice. But both my and my wife's family are in the same town in another state, and we feel compelled to go back home." I said, "We'll really miss you, but my advice is to go home." He did so.) dvm360

Robert M. Miller, DVM, is an author, cartoonist and speaker from Thousand Oaks, Calif. His thoughts in "Mind Over Miller" are drawn from 32 years as a mixed-animal practitioner. Visit his website at www.robertmmiller.com.

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Simparica *acts fast*—it starts killing fleas within 3 hours and ticks within 8 hours[1]—and keeps going strong for 35 days[2] **without losing effectiveness at the end of the month.**

IMPORTANT SAFETY INFORMATION: Simparica is for use only in dogs, 6 months of age and older. Simparica may cause abnormal neurologic signs such as tremors, decreased conscious proprioception, ataxia, decreased or absent menace, and/or seizures. Simparica has not been evaluated in dogs that are pregnant, breeding or lactating. Simparica has been safely used in dogs treated with commonly prescribed vaccines, parasiticides and other medications. The most frequently reported adverse reactions were vomiting and diarrhea. See full Prescribing Information on the back of this page and at **www.zoetisUS.com/SimparicaPI**.

Fetch more information about Simparica from Zoetis Customer Service at **1-888-ZOETIS-1** or **1-888-963-8471**.

References: 1. Six RH, Geurden T, Carter L, et al. Evaluation of the speed of kill of sarolaner (Simparica™) against induced infestations of three species of ticks (Amblyomma maculatum, Ixodes scapularis, Ixodes ricinus) on dogs. *Vet Parasitol.* 2016;222:37-42. **2.** Six RH, Everett WR, Young DR, et al. Efficacy of a novel oral formulation of sarolaner (Simparica™) against five common tick species infesting dogs in the United States. *Vet Parasitol.* 2016;222:28-32.

zoetis

See brief summary on page 40

Simparica™

(sarolaner) Chewables

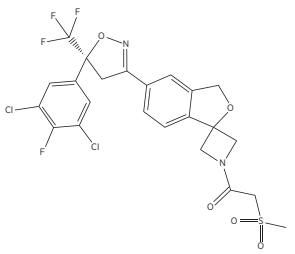
FOR ORAL USE IN DOGS ONLY

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

Description:
SIMPARICA is a flavored, chewable tablet for administration to dogs over 6 months of age according to their weight. Each tablet is formulated to provide a minimum sarolaner dosage of 0.91 mg/lb (2 mg/kg) body weight.

Sarolaner is a member of the isoxazoline class of parasiticides and the chemical name is 1-(5'-((5S)-5-(3,5-Dichloro-4-fluorophenyl)-5-(trifluoromethyl)-4,5-dihydroisoxazol-3-yl)-3'-H-spiro(azetidine-3,1'-(2)benzofuran)-1-yl)-2-(methylsulfonyl)ethanone. SIMPARICA contains the S-enantiomer of sarolaner.

The chemical structure of the S-enantiomer of sarolaner is:



Indications:
SIMPARICA kills adult fleas, and is indicated for the treatment and prevention of flea infestations (*Ctenocephalides felis*), and the treatment and control of tick infestations [*Amblyomma americanum* (lone star tick), *Amblyomma maculatum* (Gulf Coast tick), *Dermacentor variabilis* (American dog tick), *Ixodes scapularis* (black-legged tick), and *Rhipicephalus sanguineus* (brown dog tick)] for one month in dogs 6 months of age or older and weighing 2.8 pounds or greater.

Dosage and Administration:
SIMPARICA is given orally once a month at the recommended minimum dosage of 0.91 mg/lb (2 mg/kg).

Dosage Schedule:

Body Weight	SAROLANER per Tablet (mg)	Number of Tablets Administered
2.8 to 5.5 lbs	5	One
5.6 to 11.0 lbs	10	One
11.1 to 22.0 lbs	20	One
22.1 to 44.0 lbs	40	One
44.1 to 88.0 lbs	80	One
88.1 to 132.0 lbs	120	One
>132.1 lbs	Administer the appropriate combination of tablets	

SIMPARICA can be offered by hand, in the food, or administered like other tablet medications.

Care should be taken that the dog consumes the complete dose, and treated animals should be observed for a few minutes to ensure that part of the dose is not lost or refused. If a dose is missed, administer SIMPARICA and resume a monthly dosing schedule.

SIMPARICA should be administered at monthly intervals.

Flea Treatment and Prevention:
Treatment with SIMPARICA may begin at any time of the year. In areas where fleas are common year-round, monthly treatment with SIMPARICA can continue the entire year without interruption.

To minimize the likelihood of flea re-infestation, it is important to treat all dogs and cats within a household with an approved flea control product.

Tick Treatment and Control:
Treatment with SIMPARICA can begin at any time of the year (see **Effectiveness**).

Contraindications:
There are no known contraindications for the use of SIMPARICA.

Warnings:
Not for use in humans. Keep this and all drugs out of reach of children and pets. For use in dogs only. Do not use SIMPARICA in cats.

SIMPARICA should not be used in dogs less than 6 months of age (see **Animal Safety**).

Precautions:
SIMPARICA may cause abnormal neurologic signs such as tremors, decreased conscious proprioception, ataxia, decreased or absent menace, and/or seizures (see **Animal Safety**).

The safe use of SIMPARICA has not been evaluated in breeding, pregnant, or lactating dogs.

Adverse Reactions:
SIMPARICA was administered in a well-controlled US field study, which included a total of 479 dogs (315 dogs treated with SIMPARICA and 164 dogs treated with active control once monthly for three treatments).

Over the 90-day study period, all observations of potential adverse reactions were recorded.

Table 1. Dogs with adverse reactions

Adverse reaction	sarolaner	sarolaner	active control	active control
	N	% (n = 315)	N	% (n =164)
Vomiting	3	0.95%	9	5.50%
Diarrhea	2	0.63%	2	1.20%
Lethargy	1	0.32%	2	1.20%
Inappetence	0	0%	3	1.80%

Additionally, one female dog aged 8.6 years exhibited lethargy, ataxia while posturing to eliminate, elevated third eyelids, and inappetence one day after receiving SIMPARICA concurrently with a heartworm preventative (ivermectin/pyrantel pamoate). The signs resolved one day later. After the day 14 visit, the owner elected to withdraw the dog from the study.

For a copy of the Safety Data Sheet (SDS) or to report adverse reactions call Zoetis Inc. at 1-888-963-8471. Additional information can be found at www.SIMPARICA.com. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or http://www.fda.gov/AnimalVeterinary/SafetyHealth.

Clinical Pharmacology:
Sarolaner is rapidly and well absorbed following oral administration of SIMPARICA. In a study of 12 Beagle dogs the mean maximum plasma concentration (C_{max}) was 1100 ng/mL and the mean time to maximum concentration (T_{max}) occurred at 3 hours following a single oral dose of 2 mg/kg to fasted animals. The mean oral bioavailability was 86% and 107% in fasted and fed dogs, respectively. The mean oral $T_{1/2}$ values for fasted and fed animals was 10 and 12 days respectively.

Sarolaner is distributed widely; the mean volume of distribution (Vdss) was 2.81 L/kg bodyweight following a 2 mg/kg intravenous dose of sarolaner. Sarolaner is highly bound (≥99.9%) to plasma proteins. The metabolism of sarolaner appears to be minimal in the dog. The primary route of sarolaner elimination from dogs is biliary excretion with elimination via the feces.

Following repeat administration of SIMPARICA once every 28 days for 10 doses to Beagle dogs at 1X, 3X, and 5X the maximum intended clinical dose of 4 mg/kg, steady-state plasma concentrations were reached after the 6th dose. Following treatment at 1X, 3X, and 5X the maximum intended clinical dose of 4 mg/kg, sarolaner systemic exposure was dose proportional over the range 1X to 5X.

Mode of Action:
The active substance of SIMPARICA, sarolaner, is an acaricide and insecticide belonging to the isoxazoline group. Sarolaner inhibits the function of the neurotransmitter gamma aminobutyric acid (GABA) receptor and glutamate receptor, and works at the neuromuscular junction in insects. This results in uncontrolled neuromuscular activity leading to death in insects or acarines.

Effectiveness:
In a well-controlled laboratory study, SIMPARICA began to kill fleas 3 hours after initial administration and reduced the number of live fleas by ≥96.2% within 8 hours after flea infestation through Day 35.

In a separate well-controlled laboratory study, SIMPARICA demonstrated 100% effectiveness against adult fleas within 24 hours following treatment and maintained 100% effectiveness against weekly re-infestations for 35 days.

In a study to explore flea egg production and viability, SIMPARICA killed fleas before they could lay eggs for 35 days. In a study to simulate a flea-infested home environment, with flea infestations established prior to the start of treatment and re-infestations on Days 7, 37 and 67, SIMPARICA administered monthly for three months demonstrated >95.6% reduction in adult fleas within 14 days after treatment and reached 100% on Day 60.

In well-controlled laboratory studies, SIMPARICA demonstrated ≥99% effectiveness against an initial infestation of *Amblyomma americanum, Amblyomma maculatum, Dermacentor variabilis, Ixodes scapularis,* and *Rhipicephalus sanguineus* 48 hours post-administration and maintained >96% effectiveness 48 hours post re-infestation for 30 days.

In a well-controlled 90-day US field study conducted in households with existing flea infestations of varying severity, the effectiveness of SIMPARICA against fleas on Day 30, 60 and 90 visits compared to baseline was 99.4%, 99.8%, and 100%, respectively. Dogs with signs of flea allergy dermatitis showed improvement in erythema, papules, scaling, alopecia, dermatitis/pyodermatitis and pruritus as a direct result of eliminating fleas.

Animal Safety:
In a margin of safety study, SIMPARICA was administered orally to 8-week-old Beagle puppies at doses of 0, 1X, 3X, and 5X the maximum recommended dose (4 mg/kg) at 28-day intervals for 10 doses (8 dogs per group). The control group received placebo tablets. No neurologic signs were observed in the 1X group. In the 3X group, one male dog exhibited tremors and ataxia post-dose on Day 0; one female dog exhibited tremors on Days 1, 2, 3, and 5; and one female dog exhibited tremors on Day 1. In the 5X group, one female dog had a seizure on Day 61 (5 days after third dose); one female dog had tremors post-dose on Day 0 and abnormal head coordination after dosing on Day 140; and one female dog exhibited seizures associated with the second and fourth doses and tremors associated with the second and third doses. All dogs recovered without treatment. Except for the observation of abnormal head coordination in one dog in the 5X group two hours after dosing on Day 140 (dose 6). There were no treatment-related neurological signs observed once the dogs reached the age of 6 months.

In a separate exploratory pharmacokinetic study, one female dog dosed at 12 mg/kg (3X the maximum recommended dose) exhibited lethargy, anorexia, and multiple neurological signs including ataxia, tremors, disorientation, hypersalivation, diminished proprioception, and absent menace, approximately 2 days after a third monthly dose. The dog was not treated, and was ultimately euthanized. The first two doses resulted in plasma concentrations that were consistent with those of the other dogs in the treatment group. Starting at 7 hours after the third dose, there was a rapid 2.5 fold increase in plasma concentrations within 41 hours, resulting in a C_{max} more than 7-fold higher than the mean C_{max} at the maximum recommended use dose. No cause for the sudden increase in sarolaner plasma concentrations was identified.

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Jeremy Campfield, DVM | OLD SCHOOL, NEW SCHOOL

Drexit strategy

Dr. Codger schemes about how to hand off his responsibilities at his practice—and still receive a paycheck. But will Greenskin bite?

After icing down the bruises from their recent battle royale, Drs. Codger and Greenskin are back to business as usual at the veterinary hospital on a mild summer day. Despite glaring differences of opinion, the two practitioners have found a way to cooperate on routine tasks, and the rest of the staff seems oblivious to any lasting tensions. Have their disagreements really been resolved, or are the docs simply masking their emotions for the sake of the team? Is something quietly brewing in the land of nonverbal communication?

For Dr. Codger, the day-to-day slog through appointments and surgeries rarely results in any brain drain. The veteran doctor has brushed up on his exit options since his last exchange

ILLUSTRATION BY RYAN OSTRANDER

Are the docs simply masking their emotions for the sake of the team? Is something quietly brewing in the land of nonverbal communication?

with Dr. Greenskin about transferring ownership. After all, what better time than the present to institute new policies and get the practice all shined up? Former trivialities, such as a reliable air conditioner or a leak-free anesthetic circuit, never troubled Codger when he was in the trenches. But now that it's time to secure top dollar for the clinic, that heaping pile of teeny issues has caught his attention.

Dr. Greenskin has a rare empty slot in her afternoon schedule and sifts through piles of charts in the office. Dr. Codger, seated next to her, crosses his legs and leans back in his creaky chair, poised and ready to take another run at the reluctant young veterinarian. He's just opened an ice cold bottle of buttermilk to sip during their conversation. Let's sit back and watch the dialogue unfold, shall we?

Greenskin: I just can't find my signature stamp anywhere. Have you seen it, Doc? My hand is getting cramps from all this signing.

Codger: I just got a syringe pump like you requested, so you don't have to count the drips anymore!

Greenskin: Well that's good, I guess. But it wasn't the counting that upset me. I was more worried about the poor parvo puppy that died from fluid overload.

Codger: Yes, those things sure do happen. So, listen. I've been thinking a lot about how we can get you some real skin in the game around here. There are so many great options! We just need to decide how much you want to invest and go from there.

Dr. Greenskin, still thinking about the puppy, blinks back tears. But then she does her best to refocus.

Greenskin: Well, I have about 5 percent of my paycheck left over every month after living expenses and student loan payments. You know how little that is. I worry that my finances (or lack thereof) will be a real barrier to entry.

Codger: Oh, don't stress. I'm willing to carry some of the financing at a very generous rate. Here's an idea: You can just buy the practice and I'll keep the real estate so the practice can keep paying me after I retire.

Greenskin: While it sounds like that would reduce the overall purchase price, I'd need to know how much the rent would be in relation to our monthly gross. And the practice could use several renovations. Will you pay for those as the property owner?

Codger senses he's making some headway and permits himself a long, tangy draw from his glass bottle.

Codger: Ahh … Well, it sure would be a good bet for you, Greenskin. And yet this corporate outfit is ready to pay top dollar for the whole thing, which would be a highly profitable and easy out for me. How'd you like to work for a candy company? If I were you, I'd be jumping at this opportunity!

Greenskin, feeling threatened, takes a deep breath and remains calm.

Greenskin: My classmates tell me the candy company offers great benefits. Better than I have now.

Codger hurriedly licks off his buttermilk mustache.

Codger: We could also keep me on as a consultant for a while. Or you could buy half the practice and decide after awhile if you liked it and wanted to buy the rest in a few years. Or here's an option you may like the most: I could just stay on as the owner while staying out of your way. You would be the medical director and could maybe hire a part-time doctor, if you wanted. Or you could just work alone, like I did, and make all the money yourself. We could pay you a generous manager's salary, and you wouldn't have huge upfront costs to worry about.

Greenskin: So you're saying I could have all the worry of owning a practice without actually owning a practice? And I could make a little more money while you still profit?

Codger: Well … err … I would only profit if the practice did well. So I would do everything I could to help you succeed. In the beginning, we'd probably need to pay me as a consultant while you get your feet wet. I wouldn't want you to get overwhelmed!

Greenskin: So you would be the owner and would keep receiving a paycheck, but you wouldn't actually do any work?

Codger grips the buttermilk bottle.

Codger: But you would earn a lot more—at least an extra $10,000 a year! 10K has a nice ring to it, right?

Greenskin digs deep to maintain her professionalism.

Greenskin: Doc, you've given me a lot to think about. I am glad you've been considering these options and that you took the time to discuss them with me. Now I need to do some homework. Leave the practice's balance sheets on my desk tonight, and I'll consider what I might be willing and able to manage.

Dr. Greenskin grabs her stethoscope and excuses herself to her next appointment, leaving Codger to drain the final drops of his buttermilk in peace.

Moving on and letting go?

Greenskin should feel proud for staying cool and collected. She's learning not to throw all of her cards down on every hand. Codger is satisfied with the progress they're making in negotiations too. The grizzled veterinarian makes one last round to turn off some lights and tighten up a few of the kennel door screws before heading home to an evening of watching *I Love Lucy* on the couch with Mrs. Codger at his side and his coonhound at his feet.

Is Codger really looking out for his young associate's best interest, or is he using old-man cunning to distract and subdue his prey? Despite his stated intentions of getting out, there are several indicators that the old fellow is going to have a hard time fully letting go of the practice. Will there be an acceptable deal for Greenskin, or only a great deal for Codger? Will there be any deal at all? Stay tuned! **dvm360**

Dr. Jeremy Campfield works in general practice in California's Sacramento Valley. He is an avid kiteboarder.

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Contractually obligated: **From bad to worse**

Subtleties in wording can mean everything when addressing breach of contract situations. Learn from these examples.

When one of my clients submits an employment contract for review, I always encourage her to read through the document thoroughly, multiple times if necessary. This way, she's as familiar as possible with the language in the contract—as well as what's missing in comparison with what the prospective employer promised during pre-contract discussions. Familiarity with each term or section when I discuss the document with her is important.

Even after reading the legal language, it can be hard for a person who doesn't have experience in contract drafting to identify all of the provisions that may prove essential later on—either for the way they were stated or for the fact that certain subjects were never addressed.

Here's an overview of subtle contractual items that may overlooked by employers and employees.

When is our agreement over?

Most employment contracts are fairly clear as to when they begin (for the purpose of establishing when the associate begins being paid). The start of compensation often doesn't matter in relation to when the contract was signed. For example, it isn't uncommon for a new graduate to sign an employment contract before graduation, and while she may not start work until June, the rights and obligations of her contract may begin upon execution (signing) of the employment document by both parties (possibly as early as the end of the prior year).

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Earning money, though, doesn't begin until work commences.

But what may be less clear is when the contract terminates. And it may not be spelled out as to whether the termination of the contract will occur—or not occur—at the same time as when the associate's job ends.

That may seem like a distinction without a difference (or just wacky legal mumbo jumbo), but consider this example:

Dr. A signed an employment agreement at Dr. O's clinic for a one-year job beginning July 1, 2017. Everything is going great, but in December 2018, Dr. A receives a job offer from another clinic for more money and better benefits. Dr. O is totally blindsided when Dr. A tells him she will be leaving the O Clinic in 10 days.

Hey, what about the 90-day notice mandated by the employment contract?

Uh-oh! That notice obligation ended along with the contract when a full calendar year passed on June 30, 2018. Dr. A is free to go, provided that she works under circumstances that do not violate her noncompete. As for Dr. O? He needs to be more careful next time.

Issues beyond giving notice

Dr. O was more careful when he hired an associate to replace Dr. A.

He got an attorney to change the notice language but, unfortunately, neglected to modify the following employment term in the template contract he had been using faithfully since he originally typed it on his Smith Corona typewriter in 1987:

"Employee veterinarian will not compete within 10 miles of O Clinic for a period of two years after termination of this contract."

Dr. O interviews young Dr. B and, delighted with his knowledge and demeanor, hires Dr. B to join the O Clinic team. Everything goes great and since Dr. B is making great money under the contractual production-salary formula, no one looks at the contract again until 2020. In 2020, Dr. B realizes he has the personality and ability to open his own practice—which he does—one mile from O Clinic.

Outraged, Dr. O looks at the employment contract closely. It says that Dr. B can't leave without giving 90 days' notice (which Dr. B is perfectly happy to do since he sees an opportunity for three good months of schmoozing O Clinic's clients who will hopefully follow him to the all-new B Pet Hospital). But lo and behold, the contract, and its noncompete term, still terminate one year from Dr. B's signing it. Since that was three years ago, Dr. B is no longer bound by the noncompete.

So it really stings when Dr. O fires Dr. B on the spot and Dr. B reminds him that the notice requirement swings both ways. Dr. B gave notice 90 days prior to leaving because that term in the old, slightly improved, "Dr. A" contract was repaired. Unfortunately for Dr. O, he is also required to give 90 days' notice if he fires Dr. B for a reason other than malpractice or misbehavior.

So out walks Dr. B to his new clinic with a check in his hand for three months' pay.

Dr. O wises up

Dr. O finally realizes that his 30-year-old contract form needs an overhaul, so he gets some qualified advice and presents the new and improved version to recent grad Dr. C. Third time's a charm, right?

Dr. C loves the new job and the staff! Dr. C especially likes Dr. D because they share the same practice philosophy.

Six months later, over beers at the local watering hole, Dr. D proposes to Dr. C that they should open a new clinic together, even though losing two doctors simultaneously would really hurt good old Dr. O.

"It's not personal, it's just business," Dr. D tells Dr. C, and so the plan is in motion. D Hospital for Pets opens 90 days later, featuring "Drs. C and D, formerly of O Clinic." (So say the billboards all over town.)

Dr. O is beside himself with rage. He calls his lawyer who drafted the C contract and asks how this situation could possibly not have been addressed in the new improved O Clinic employment contract form. The attorney tells him that he did address the issue. The agreement says:

"Associate will not solicit, hire or employ any of O Clinic's employees within one year of leaving employment with O Clinic."

Good news, no?

"Smells like a winning breach of contract lawsuit to me," opines Dr. O.

Dr. O's lawyer says, "Hmmm, maybe … let me have a look at your copy of Dr. D's employment contract."

Just as Dr. O's attorney suspected—the D contract doesn't have a provision regarding employee raiding. But Dr. O's lawyer is pretty sharp (even though he wasn't able to convince Dr. O to update all the vet contracts after he got slammed the last time). Dr. O's attorney says, "Let me go to the secretary of state's website and see how Dr. C fits into this new "partnership."

Instantly the search yields the business filing of the new clinic: "D Hospital for Pets, LLC," licensed for business with one member, Dr. D.

"So what?" Dr. O demands.

"What it means is that Dr. D solicited Dr. C, and Dr. C now works for him outside of both the Dr. C and Dr. D noncompete radii," the lawyer says. "Your C contract keeps Dr. C from soliciting Dr. D. But Dr. D can solicit anyone he pleases from your clinic."

That's when the distraught Dr. O gets a text message from his office manager. It seems that both receptionists, an LVT and one part-time kennel attendant all just gave their notices. They plan to go to work at that beautiful new clinic opening on the other side of town—the D Hospital for Pets.

Dr. O leaves the lawyer's office and heads for the bar. The bartender is sympathetic. He says, "Doc, you know it was a conspiracy between Dr. C and Dr. D … maybe even Dr. C's idea."

But law-weary Dr. O knows in his heart there's no way to prove who said what to whom. The only thing he knows for sure is that his lawyer said years ago, "You need a new contract for all your doctors." dvm360

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UC Davis identifies genetic risk factor for squamous cell carcinoma in horses

Test can help veterinarians monitor at-risk patients as well as assist horse owners with breeding decisions.

Equine veterinarians are all too familiar with squamous cell carcinoma (SCC), the most common cancer of the equine eye and second-most-common tumor in horses overall. Now, thanks to a recent genetic study led by the University of California, Davis, owners can identify horses at risk for ocular SCC and make smart breeding decisions.

In the cover article for a recent issue of the *International Journal of Cancer*, scientists revealed the discovery of a genetic mutation in horses that is thought to affect the ability of damage-specific DNA binding protein 2 (DDB2) to carry out its standard role. Normally, the protein conducts DNA surveillance, looking for UV damage and then calling in other proteins to help repair the harm, according to a release from UC Davis.

"The mutation is predicted to alter the shape of the protein so it can't recognize UV-damaged DNA," says Rebecca Bellone, PhD, an equine geneticist at the Veterinary Genetics Laboratory and associate adjunct professor at UC Davis School of Veterinary Medicine, in the release. "We believe this is a risk factor because cells can't repair the damage and accumulate mutations in the DNA that lead to cancer."

Several equine breeds, including Haflingers, have a higher occurrence of limbal SCC, the form of the disease that originates in the junction between the cornea and the conjunctiva, the release states. Mary Lassaline, DVM, PhD, DACVO, associate professor of clinical equine ophthalmology at the UC Davis School of Veterinary Medicine, assisted with the recently published research. "The fact that we see this type of cancer in a relatively small breed with a narrow pedigree makes it a good model to study," she says.

Ocular SCC can lead to vision loss and even loss of the eye. In advanced cases, SCC can be locally invasive and spread to the orbit and eat away at bone and eventually the brain, leading to death. These recent study results help identify horses at risk for developing SCC in two ways, according to the Davis release:

>>> A horse's eye affected by SCC.

"One, it's important for the individual horse with a known risk and we can be more vigilant about exams as well as protecting their eyes from UV exposure," Lassaline says. "If detected early, we can remove the tumor and save the eye. Secondly, that knowledge is important for making informed breeding decisions."

Scientists at the UC Davis Veterinary Genetics Laboratory have developed a genetic test for horses based on the research. The test determines if a horse carries the mutation or has two copies of the risk variant, putting it at highest risk for cancer.

The study may have implications for human health as well, the UC Davis release asserts. The gene associated with equine SCC is also linked in humans to xeroderma pigmentosum complementation group E, a disease characterized by sun sensitivity and increased risk of cutaneous SCC and melanoma.

"There is an interesting parallel in humans with mutation in this protein," Bellone says. "Now we have the ability to understand why it's affecting the eyes of horses as well as the skin of humans." **dvm360**

>>> Halflinger horses are more likely than other breeds to develop ocular squamous cell carcinoma.

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References 1. Wolyniak CJ, Brenna JT, Murphy KJ, Sinclair AJ. Gas chromatography-chemical ionization-mass spectrometric fatty acid analysis of a commercial supercritical carbon dioxide lipid extract from New Zealand green-lipped mussel (*Perna canaliculus*). *Lipids.* 2005;40(4):355-360. **2.** Data on file at Merial, Inc.
3. Data on file at Merial, Inc.

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Code of conduct:
Labeling clients with secret shorthand

Is it unprofessional to warn veterinary technicians about difficult people and pets using a labeling system that's hidden from the client? One team member says yes.

Dr. Reed Thompson has chosen to follow in the footsteps of his father, Reed Thompson Sr., who started an urban veterinary practice 49 years ago. This inner-city clinic has its challenges, but Dr. Thompson, like his father, refuses to abandon the community and flee to the suburbs.

The practice presents somewhat unique challenges. Dr. Thompson works with one other doctor and a staff of eight technicians and three receptionists. Despite his best efforts, accounts receivable are high and his profit margin is less than ideal. Dr. Thompson compensates for these shortcomings by using his technicians in the most efficient manner possible.

Many veterinarians will tell you that their techs are the lifeblood of their practice—in Dr. Thompson's clinic, this is an understatement. Technicians take client histories, record exam room notes, administer all medications and perform all diagnostic tests.

Dr. Thompson has always thought the medical side of his practice was the easy part; the compliance component was the real challenge. Many of his clients don't pay their bills and can be tough to deal with, plus they often have aggressive pets. In order to render the best care for his patients he has to be in tune with his clients' mindset. And the best way he's found to do this is to use a shorthand protocol with his techs. This allows him to tailor his treatment protocol for maximum compliance.

'A memorable dog'

Today a diabetic patient is in the clinic. The dog is aggressive when

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handled, and the client is confrontationally defensive about the dog's aggression. In addition, this client is known to have limited funds and is able to afford only minimum care. Dr. Thompson must do his best to help this pet, encourage client compliance and still get paid for his services.

In the exam room the technicians make notes on the doctor's observations. Dr. Thompson dictates the pet's vitals while mentioning that he's a memorable dog. He tells the technician to add a circle dot to the record and the number 47. While talking to the client, Dr. Thompson mentions that he uses medical code to assist his staff with notes to the record.

The reality is that Dr. Thompson is telling his technicians that the dog is aggressive (circle dot), the client might be difficult to deal with (number 47), and there's a history of reluctance to provide payment ("a memorable dog"). Everyone's informational needs are met, no feelings have been hurt, and the pet and client are handled in the best possible way.

A new technician has some issues with this technique. She approaches Dr. Thompson to express her views. She understands the codes and their role in informing the staff, but she thinks the practice is unprofessional. She believes the client is the pet advocate and part of the healthcare team. Excluding the pet owner in this way is easier in the moment but ultimately dishonest. The veterinarian's professionalism must be above board if clients are to place their faith in his medical recommendations.

Dr. Thompson is taken aback. He believes that his clients, his patients and the local community all benefit from both his style and his commitment. In his view, if he's not efficient in the way he handles communication challenges such as this, his practice won't survive.

He tells his new technician that he's doing nothing illegal, that he does not agree that his actions are unprofessional, and that she has a decision to make. The doctor and his technician agree to part ways. Dr. Thompson continues to practice with the aid of his private informational code, secure in his mind that it's ultimately in the best interests of his patients and practice.

Do you agree with Dr. Thompson's methods?

What readers are saying about this article on dvm360.com/Facebook

Does your practice use a secret code for difficult clients and patients in the medical record? Is it ethical?

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Mary How many of us have almost been bitten because 1) the client knows and doesn't warn us that their dog has a history of aggression (fearful, interdog, temperature only, whatever) and 2) there's nothing in the medical record—electronic record or paper record to indicate this is a know aggressive pet? Granted, some dogs are better with certain technicians and certain doctors, and if the practice can accommodate this, that's awesome! I've been backed by practice owners when I have "fired" a client from seeing me, and the client is still welcome in the practice. I think the receptionists and technicians should be aware of this.
Like • Reply • Message

Kathy Staff members need to be aware of issues with both clients and the pets. If a dog is fearful, I'm going to note that in the record. If a dog attempts to bite me, I'm going to put a "will bite" in the record.
Like • Reply • Message

> **Christina** Then note the dog is a bite risk or similar, but the passive aggressive notes or symbols about clients that get passed on to clinics with transferred charts are unprofessional. You'd never see some of what people put in vet med charts in human medicine.
> Like • Reply • Message
>
> **Jennifer** Ha! The main reason for that is because they hardly write anything down in human medicine.
> Like • Reply • Message

Carolyn I would love it if each client is given a blank slate during each visit. Dr. T #47, is being paternalistic. (And he seems to have hidden hostility towards his clients.) If his clients knew his codes, they'd go elsewhere. Obviously, being honest with himself should motivate him to take his clinic elsewhere.
Like • Reply • Message

Christina I've seen some really horrible notations or secret marks (usually regarding client). There has to be a balance.
Like • Reply • Message

Michel It is absolutely unethical. It is a medical record and a "difficult" client is a matter of personal opinion.
Like • Reply • Message

R. James I can't imagine a doctor needing to tell a tech, during an exam, the codes mentioned. They should already be in the patient record from past visits. If there are no past visits it can't be a "memorable dog." Also, if this is a first visit (no codes already noted), the tech should know if a 'circle dot' or '47' is appropriate without being told. Aside from that, I wouldn't mind my vet having a code for me or my pet. My only concern is being judged "difficult" for asking questions or for asking what treatment alternatives are available (this has happened). If it's not clear why I was judged "difficult" techs and other doctors, at that practice, might enter the exam room with incorrect preconceived expectations that could negatively impact that visit (just give me the code for "will ask questions"). BTW, if the practice offers daycare, like mine does, codes about the patient/client would seem important.
Like • Reply • Message

Rosenberg's response

No one will argue with the idea that honesty and transparency are the foundations of ethical veterinary practice. However, when you move from the ideal world to the real world, black and white are not the only professional options. None of Dr. Thompson's veiled medical-record comments negatively affect his patients. If he didn't use these methods, would clients be insulted? Might technicians be injured?

Yes, taking the time to talk through these issues tactfully with the pet owner might accomplish the same thing, albeit less efficiently. But the bottom line is that veterinary practice is composed of myriad well-intentioned clinicians. Professionalism has many different acceptable faces, and Dr. Thompson's is one of them. dvm360

Dr. Marc Rosenberg is director of the Voorhees Veterinary Center in Voorhees, New Jersey. *Althought many of his scenarios in "The Dilemma" are based on real-life events, the veterinary practices, doctors and employees described are fictional.*

MEDICINE | Renal disease

SDMA:
Satisfy your need for speed (in diagnosing CKD)

How to use this biomarker in your veterinary practice to help you diagnose, treat and monitor chronic kidney disease.

By Jennifer L. Garcia, DVM, DACVIM

In her IDEXX-sponsored presentation, "SDMA in practice: Impact on diagnosis, staging, and management of CKD," at the 2016 American College of Veterinary Internal Medicine (ACVIM) Forum, IDEXX Director of Medical Affairs Jane Robertson, DVM, DACVIM, discussed how the symmetric dimethylarginine (SDMA) biomarker can be used to diagnose chronic kidney disease (CKD) in cats and dogs far sooner than with traditional methods.

Robertson cited studies demonstrating that in dogs with renal disease, SDMA elevations can be seen approximately 9.8 months before creatinine becomes elevated.[1] In cats, the average is about 17 months.[2] This means increases in SDMA concentrations can be identified when only 25% of kidney function has been lost (40% average),[2] as opposed to a loss of 65% to 75% by the time azotemia can be noted.

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Robertson also explained that creatinine may lose sensitivity as an indicator of CKD in elderly patients with diminished muscle mass, but studies indicate that SDMA is not affected by muscle loss.[3,4]

Can creatinine be elevated before SDMA?

In short, yes. While uncommon, Robertson said that in 1.3 million canine samples submitted to IDEXX, 1.6% of cases showed elevated creatinine concentrations before elevations in SDMA concentrations. In cats, this condition has been noted in 1.1% of over 600,000 samples. While it is unclear why the creatinine concentration would be elevated before the SDMA concentration, Robertson offered three possible reasons:

- It is normal for glomerular filtration rates and SDMA to fluctuate by about 15% on a daily basis.
- Patients that are highly muscled may have abnormally high creatinine concentrations.
- Drug interactions (e.g. cephalosporins) may lead to discordant results.

Using SDMA within the International Renal Interest Society (IRIS) guidelines

Once the patient's renal function measurements have stabilized and IRIS staging and substaging can be assessed, SDMA can be used to help evaluate trends in individual animals. Robertson emphasized that while the current IRIS guidelines do not currently specify SDMA cut off values for each stage of CKD, there are some general values that can be used to assess progression.

For example, IRIS stage 2 CKD patients with an SDMA concentration greater than 25 µg/dl would benefit from being treated as though they are stage 3. Similarly, treatment for stage 4 should be considered in IRIS stage 3 CKD patients with an SDMA concentration greater than 45 µg/dl.

Investigate, manage, and monitor approach

Robertson discussed how to apply an investigate, manage and monitor approach to clinical scenarios in order to demonstrate how SDMA may be used to develop a plan for treatment and monitoring.

For example, in a patient with an elevated SDMA concentration, low urine specific gravity, no clinical signs, normal creatinine concentration and normal physical examination results, the approach in Table 1 could be applied.

Robertson noted that there is still much to learn about how SDMA is affected by various medical conditions, but studies are already underway to assess the interaction between feline hyperthyroidism and SDMA. **dvm360**

Table 1

Investigate	Check the urine protein-to-creatinine ratio
	Perform a urine culture.
	Assess blood pressure.
	Use diagnostic imaging.
	Screen for infectious diseases (depending on geographic location).
Manage	Avoid drugs that can negatively affect the kidneys (e.g. NSAIDs).
	Use appropriate anesthetic protocols and intravenous fluids to maintain renal perfusion during procedures.
	Consider implementing a renal-specific diet
	Offer multiple water sources to encourage increased water intake.
	Treat proteinuria and hypertension as needed.
Monitor	Recheck the patient in two weeks to determine progression
	Other monitoring will depend on diagnostic findings and changes in clinical signs—particularly anything that could affect hydration (e.g. vomiting, diarrhea).

References

1. Yerramilli M, Yerramilli M, Obare E, et al. Symmetric dimethylarginine (SDMA) increases earlier than serum creatinine in dogs with chronic kidney disease (CKD) (abst). *J Vet Intern Med* 2014;28(3):1084-1085.

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The ABCs of veterinary dentistry: "J" is for jaw fractures

It's all smooth sailing until a maxilla or mandible mishap. Here's some help on navigating the sometimes scary course of jaw fracture repair.

By Jan Bellows, DVM, DAVDC, DABVP, FAVD

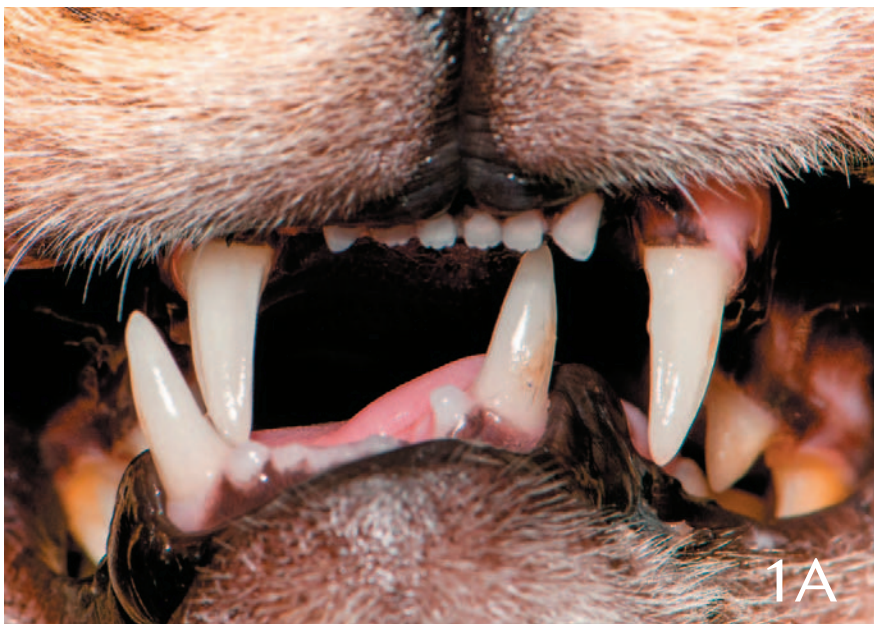
When a dog or cat presents with a jaw fracture, trepidation often sets in—not unlike watching *Jaws* the movie. Ready to step into the waters of jaw fractures and symphyseal separations? We'll hold off on temporomandibular joint fractures until the "T" article in this series. For now, let's embrace jaw anatomy, terminology and a few straightforward concepts.

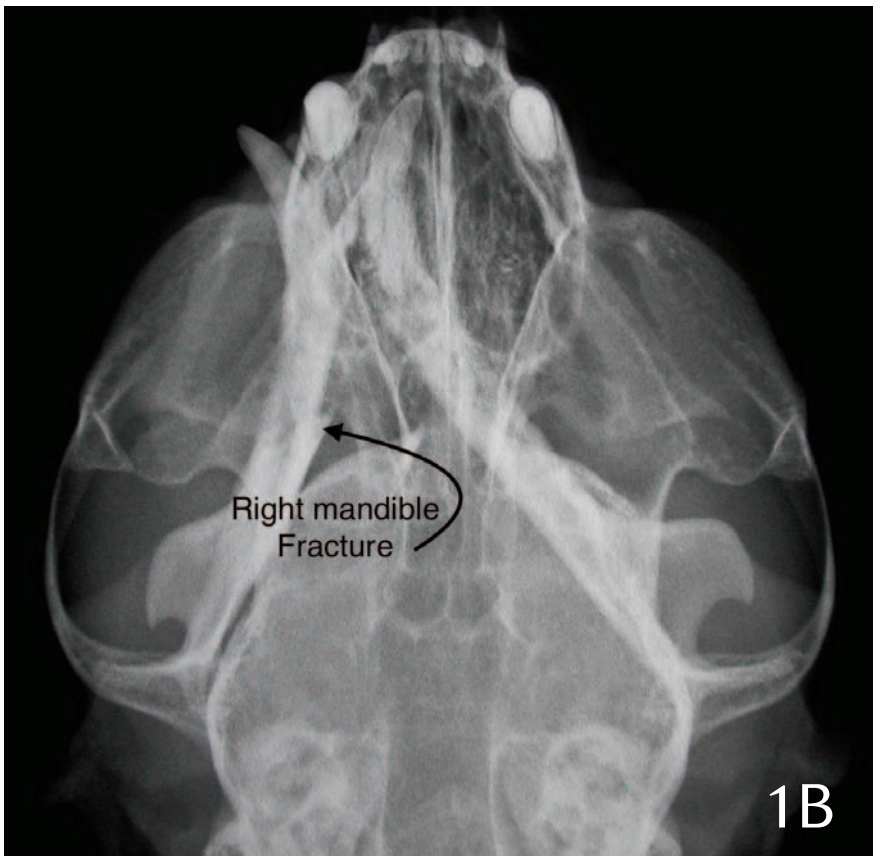
The maxilla

The maxillary bones form the lateral parts of the face and the part of the hard palate that hold the canines and upper cheek teeth. The maxilla articulates with the incisive bone rostrally, the nasal bone dorsally, the vomer bone medially, and the lacrimal and zygomatic bones caudally.

The palatine bone forms the bony part of the hard palate together with the maxillary and incisive bones. The incisive bone located rostrally holds the upper incisors and forms about one-sixth of the hard palate.

The hard palate separates the oral





>>> Figures 1A and 1B. A cat's mandibles deviated toward the right, secondary to a right-sided mandibular fracture.

PHOTOS COURTESY OF DR. JAN BELLOWS

and nasal cavities. The primary palate is the incisive portion of the palate and associated soft tissues. The secondary palate includes the remaining hard and soft palatal structures. Firmly attached heavily keratinized mucosa covers the hard palate.

The mandible

The large bones articulating with the skull that support the lower teeth are the mandibles. Each mandible is composed of a horizontal body and a vertical ramus. The body supports the lower teeth. The ramus has three processes (coronoid, condylar and angular). The condylar process articulates with the cranium in the temporomandibular joint (TMJ). The mandibles are connected to each other by a strong fibrocartilaginous joint at the mandibular symphysis.

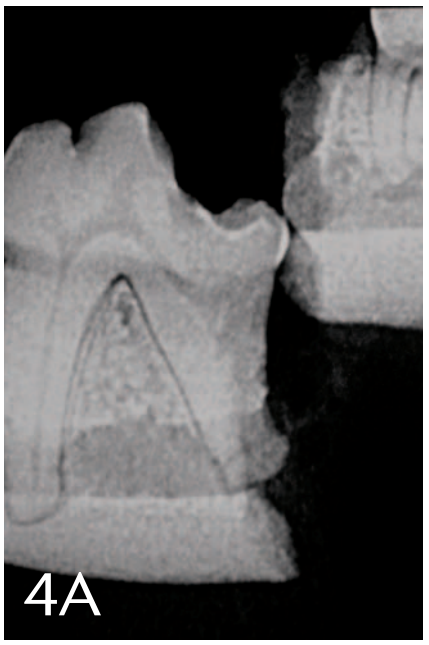
Jaw fracture pointers

Keep in mind that jaw fracture repair options include simple suturing, external fixation, plates and screws, elastics, interfragmentary wiring and acrylic splinting. But let's look at some particulars.

> Generally, the lower jaw deviates toward the side of the fracture (Figures 1A and 1B).

> Determining whether the fracture is favorable or unfavorable is important in deciding which method of fixation is best. Attached jaw muscles either compress (favorable) or distract (unfavorable) the fractured segments.

Favorable mandible fractures run dorsocaudal to ventrocranial. These fractures compress because of the upward pulling of the masseter and temporalis muscles, and downward and caudal pulling of the digastricus. Stabilization of the tension surface may be all that is required for bony healing.



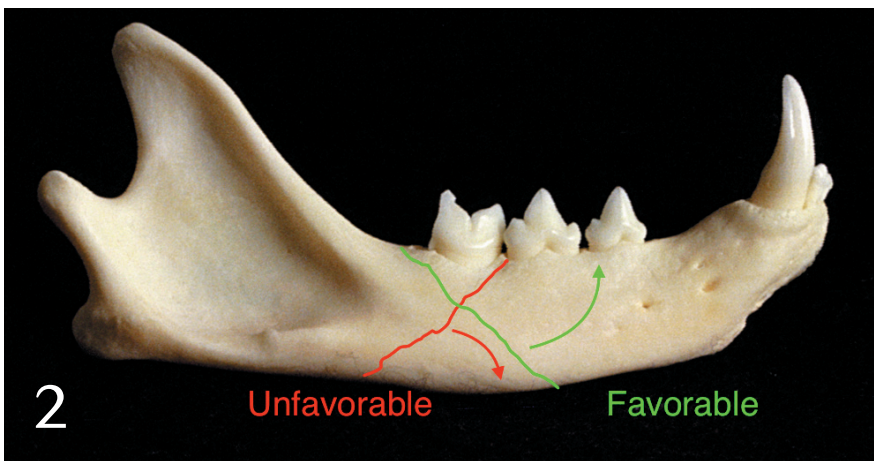
>>> Figure 4A. A left mandibular fracture between the first and second molars..

Unfavorable fractures run dorsocranial to ventrocaudal and distract the fracture fragments. The alveolar crestal bone is considered the tension surface, while the ventral cortex is considered the compression surface (Figure 2).

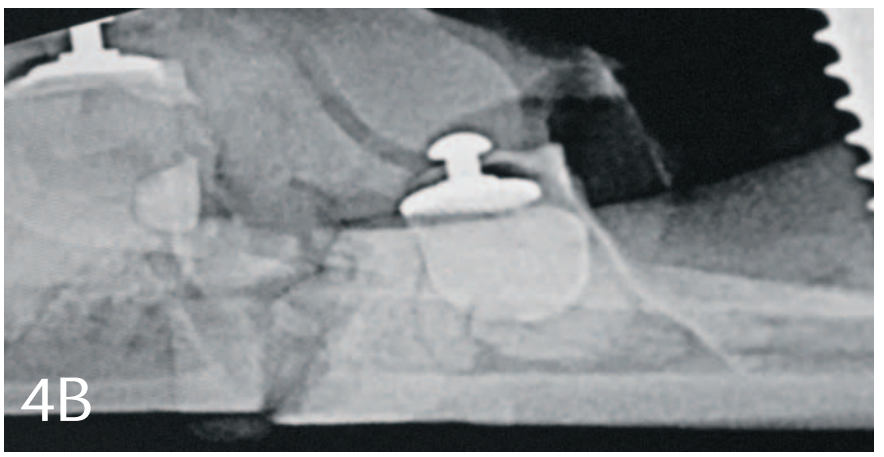
> Unless you've had advanced training, avoid plating jaw fractures for fear of compromising tooth roots. Also avoid placing intramedullary pins into the mandibular canal. The mandibular canal carries the neurovascular structures—it's not an intramedullary canal.

> Removing teeth (or parts of teeth) in the fracture line is usually a good idea (Figures 3A-3C, 4A and 4B).

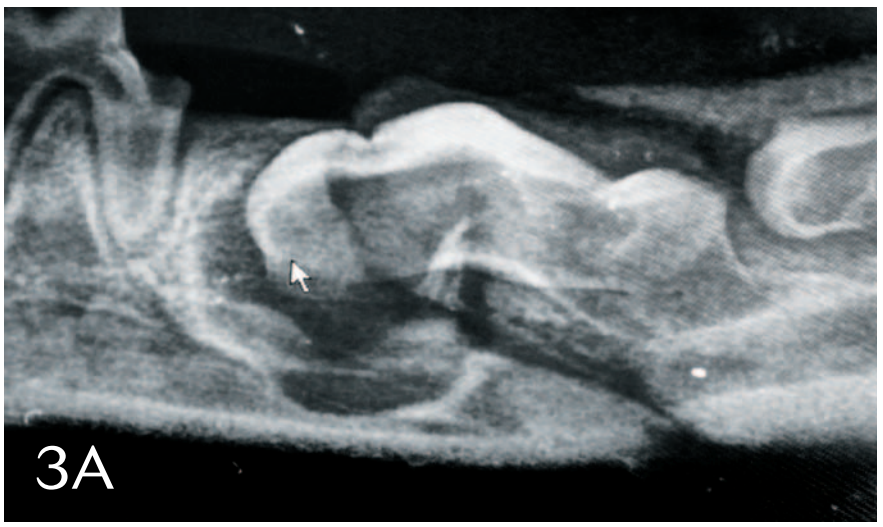
> For many minimally displaced jaw fractures, you can use a tape muzzle or



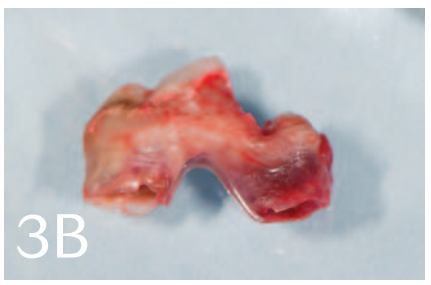
>>> Figure 2. An illustration of favorable and unfavorable jaw fractures.



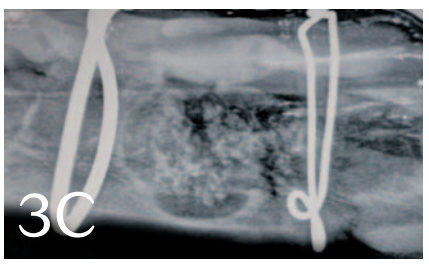
>>> Figure 4B. Repair with hemisection and vital pulp therapy of the first molar, orthodontic buttons, a splint and an external fixator..



>>> Figure 3A. A radiograph of an immature right mandibular first molar in the fracture line..

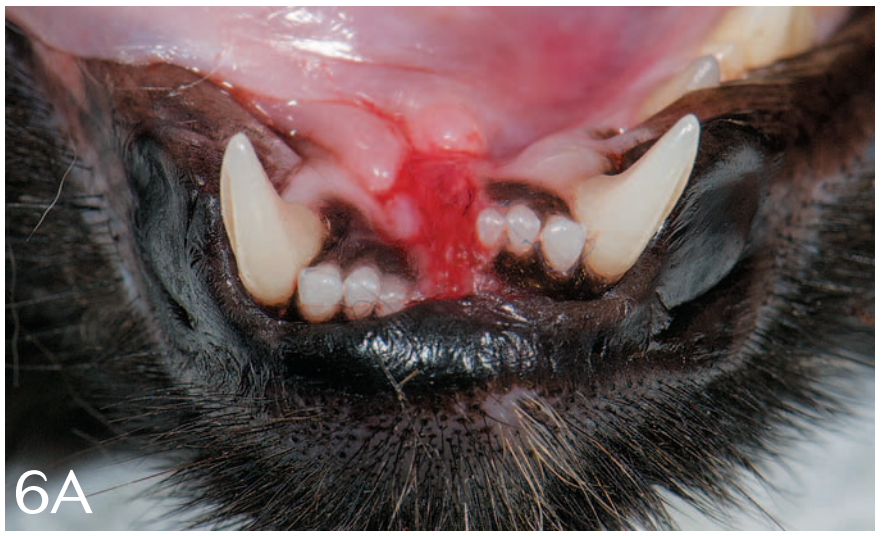


>>> Figure 3B. The immature first molar.

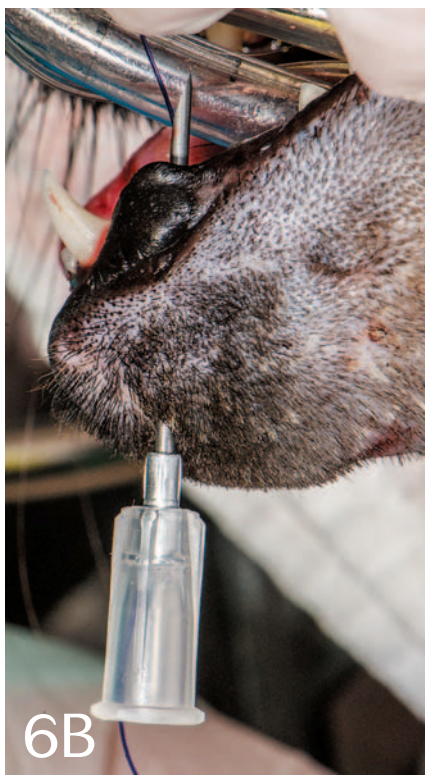


>>> Figure 3C. The healed fracture site before removal of wires and splint.

>>> Figure 5. An external fixator used to complement repair of the above fracture between the first and second molar (Figures 4A and 4B).



>>>Figure 6A. A symphyseal separation.



>>>Figure 6B. An 18-ga needle used to feed suture around the left rostral mandible.

>>>Figure 6C. Suture placed around the right mandible.

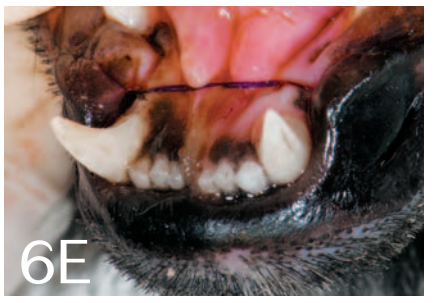
loose-fitting commercial muzzle that allows for food lapping to stabilize the area.

> External fixators work well in many mandibular fractures (Figure 5).

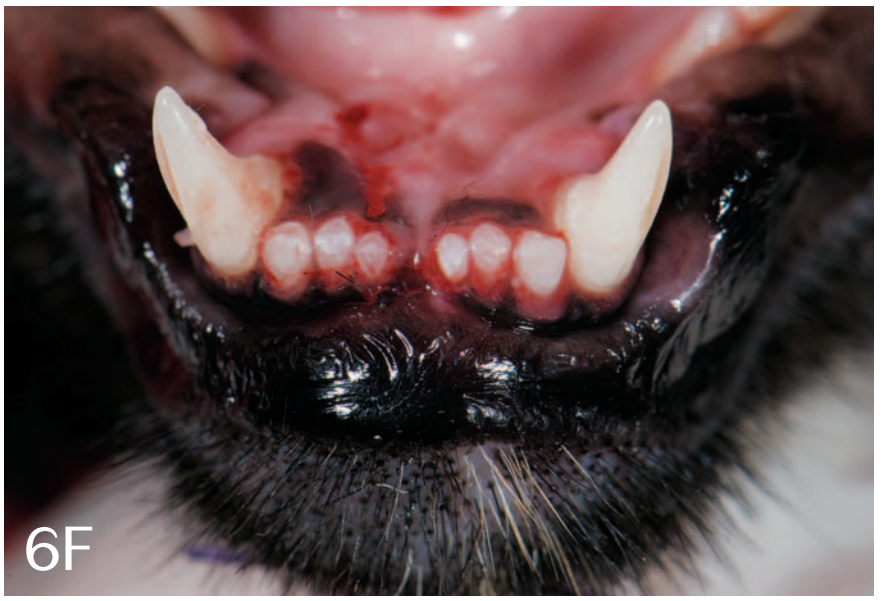
> Mandibular symphyseal separations are not true fractures. The symphysis is a joint. If needed, the separation can be stabilized with suture, wire or light-cured composite (6A-6I).

> Midline maxillary fractures without displacement often only need to be

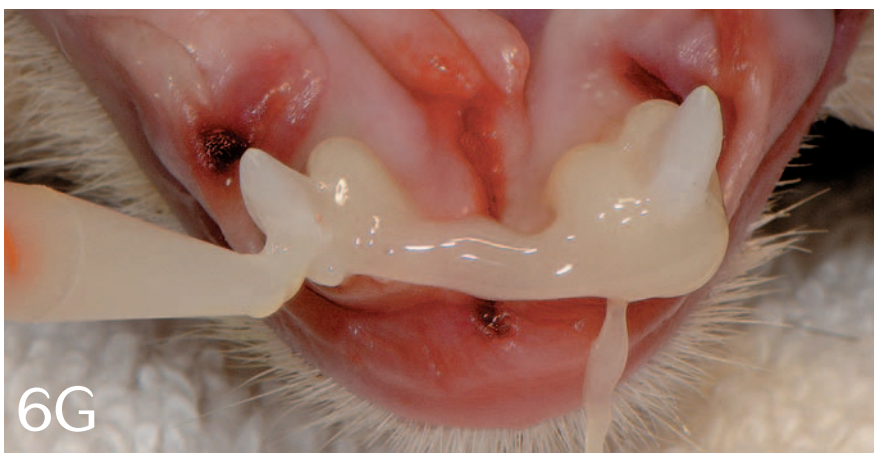
>>>Figure 6D. Suture exiting ventral to the symphysis.



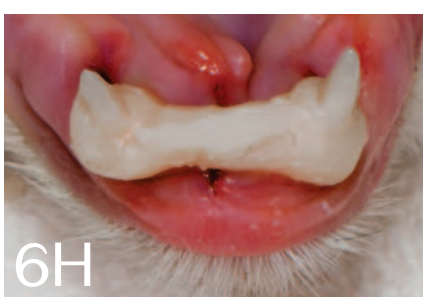
>>>Figure 6E. A stabilized, realigned symphysis.



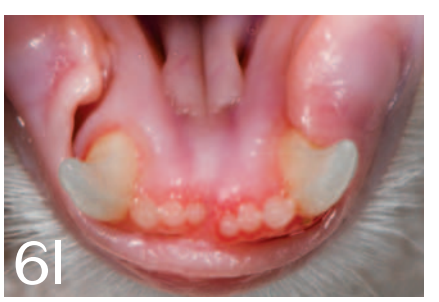
>>>Figure 6F. The appearance at suture removal one month after surgery.



>>>Figure 6G. Application of acrylic to a symphyseal separation in another cat patient.



>>>Figure 6H. An acrylic splint to stabilize separation during healing.



>>>Figure 6I. The healed separation after splint removal four weeks after surgery.

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References: 1. Data on file. **2.** Steinberg D, Beeman D, Bowen W. The effect of delmopinol on glucosyltransferase adsorbed on to saliva-coated hydroxyapatite. *Archs Oral Biol.* 1992;37:33-38. **3.** Vassilakos N, Arnebrant T, Rundegren J. In vitro interactions of delmopinol hydrochloride with salivary films adsorbed at solid/liquid interfaces. *Caries Res.* 1993;27:176-182.

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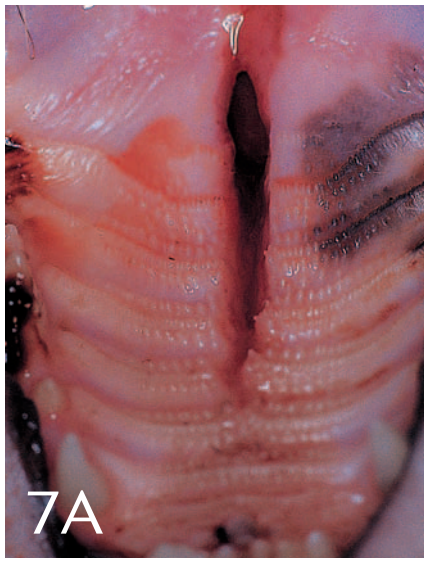
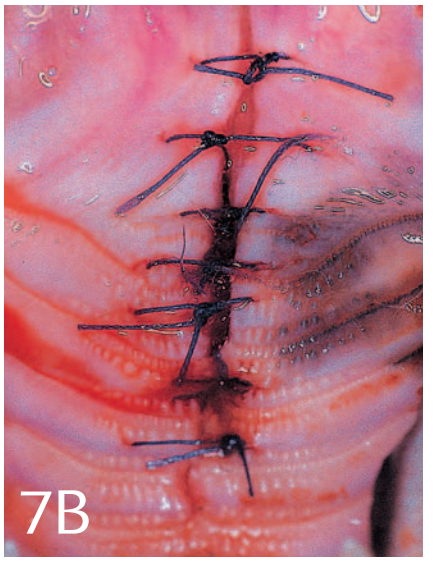
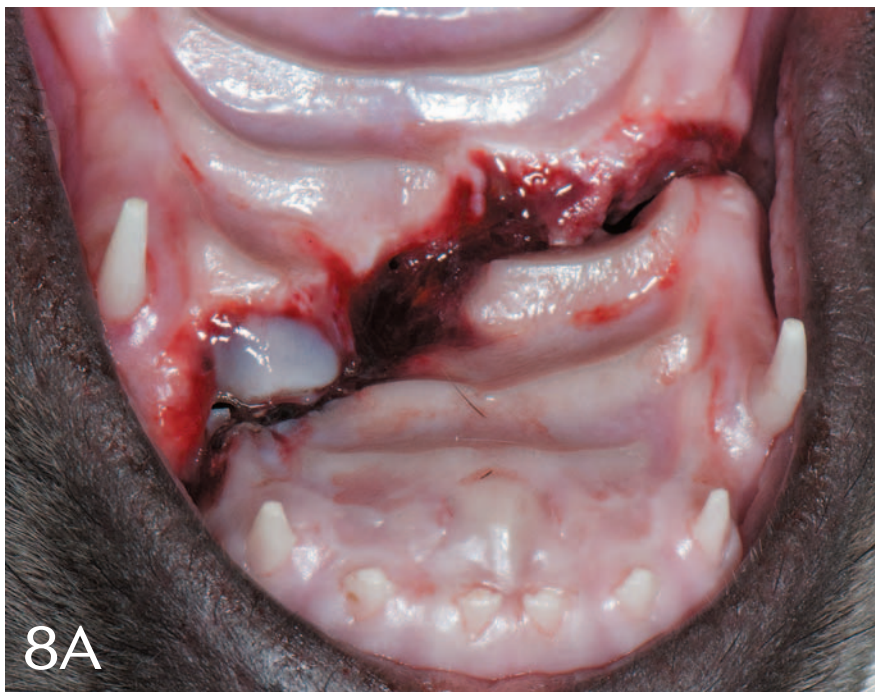


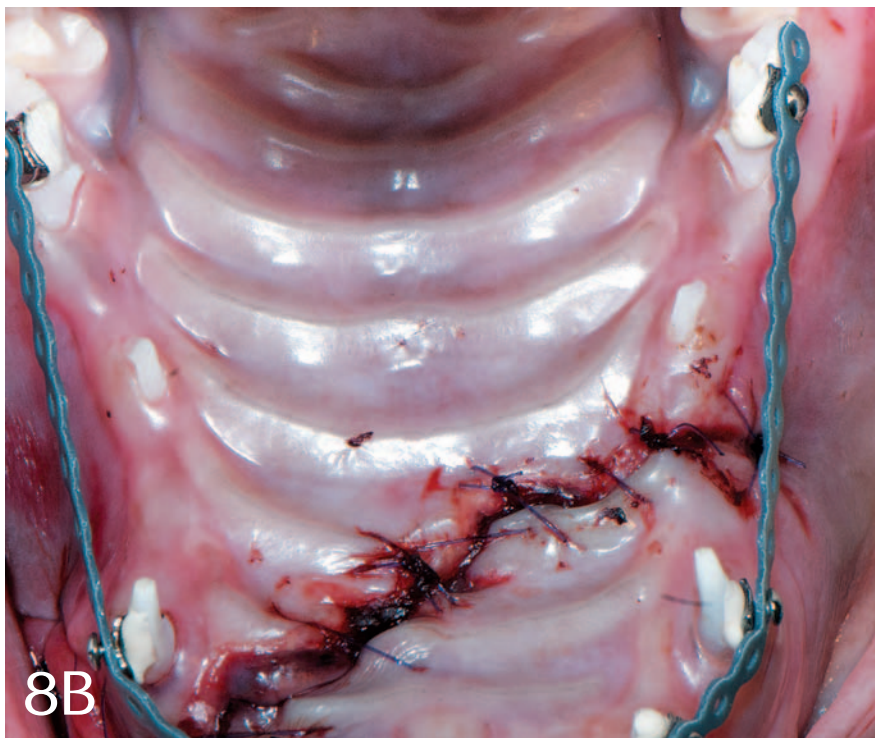
>>>Figure 7A. A maxillary defect secondary to fracture.



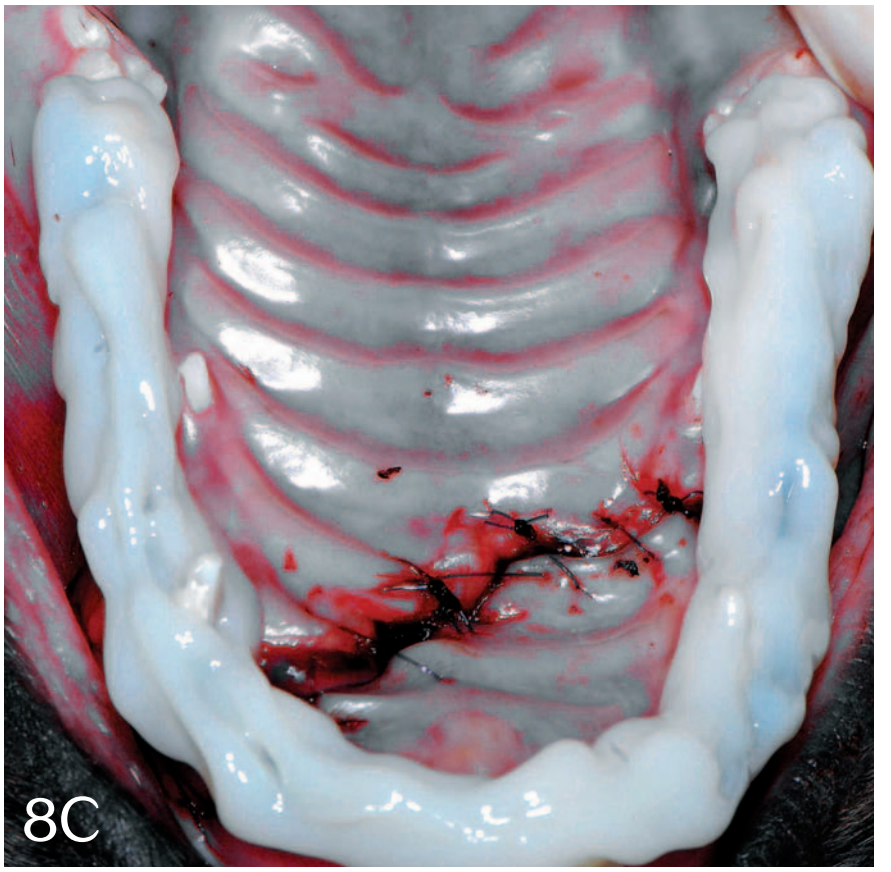
>>>Figure 7B. The sutured defect.



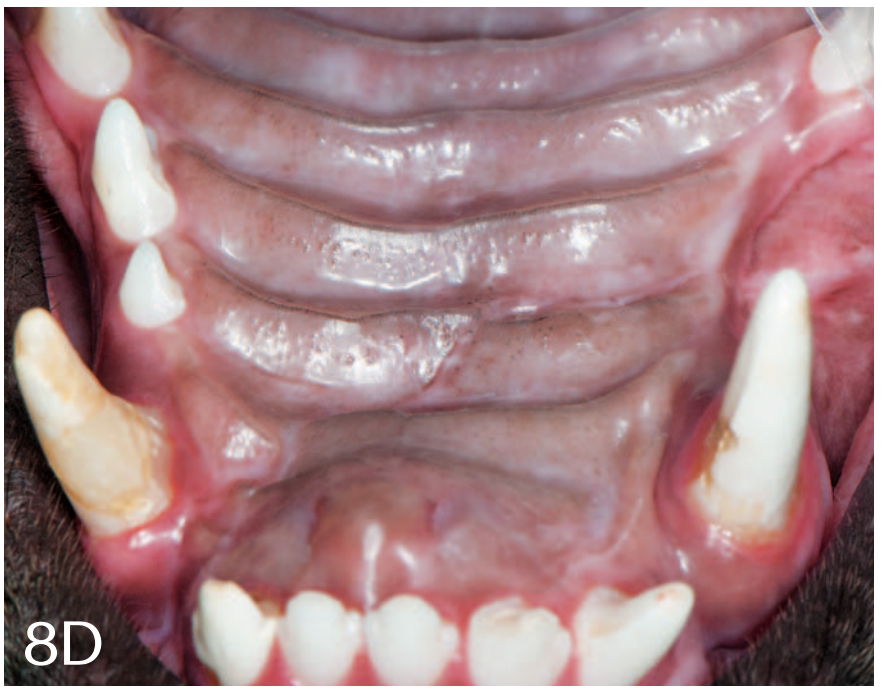
>>>Figure 8A. A rostral maxillary fracture in a 4-month-old Weimaraner puppy after being kicked in the face by a horse.



>>>Figure 8B. The sutured defect with placement of orthodontic buttons and elastics for apposition and realignment.



>>>Figure 8C. An acrylic splint placed over buttons and elastics, which was removed after three weeks.



>>>Figure 8D. The appearance of the dog at 2 years of age before maxillary canine teeth restoration.

sutured (Figures 7A-7C).

> Maxillary fractures with displacement often need much more than suturing the tissues overlying the hard palate (Figures 8A-8D).

Time to stop jawing and start doing!

Jaw fractures don't have to be overwhelming when you concentrate on creating a stable means of fixation to maintain alignment and quick return to function. Feel free to contact your local veterinary dentist (avdc.org) for help and additional resources. dvm360

Dr. Jan Bellows owns Hometown Animal Hospital and Dental Clinic in Weston, Fla. He is a diplomate of the American Veterinary Dental College and the American Board of Veterinary Practitioners. He can be reached at (954) 349-5800; or via email at: dentalvet@aol.com.

EQUINE | Dermatology

A closeup look at equine **skin diseases**

From ringworm to allergies to skin cancer, a veterinary dermatologist walks you through some updates on the most common conditions you might face in your equine patients. *By Ed Kane, PhD*

Skin diseases in horses are prevalent throughout the year, though some may be seasonal. They may be due to various infectious agents—bacteria, viruses, fungi, parasites or environmental irritants. The need to promptly treat the disease is important not only to alleviate the discomfort experienced, such as itchiness and soreness, but also to improve the horse's overall health. Remember: The skin is a critical organ, a natural barrier to disease. Here are some commonly encountered equine skin diseases and conditions seen in horses.

Dermatophytosis (ringworm)

Ringworm usually manifests as a crusting dermatosis with hair loss and circular lesions on the body. Christine Rees, DVM, DACVD, of Dallas Veterinary Specialists in Dallas, Texas, says it's normally seen in a stressed animal or in one whose immune system is slightly compromised, making it more common in older or younger horses.

Specifics on species. Ringworm is common to most animals, does not seem to be species-specific and is zoonotic, so it is fairly easily passed between individuals, says Rees. "Sometimes you can see lesions that almost look more hivelike," says Rees. "Since there are various ringworm fungal genus species, the best method to diagnose the disease is to do a fungal culture, which also helps to determine the potential source."

Rees says she sees more cases of ringworm caused by *Microsporum canis*, the type found prevalently in cats, than by *Trichophyton equinum*, the equine species. "If it is the type usually seen in cats, evaluate any barn cats to determine if one has skin lesions,

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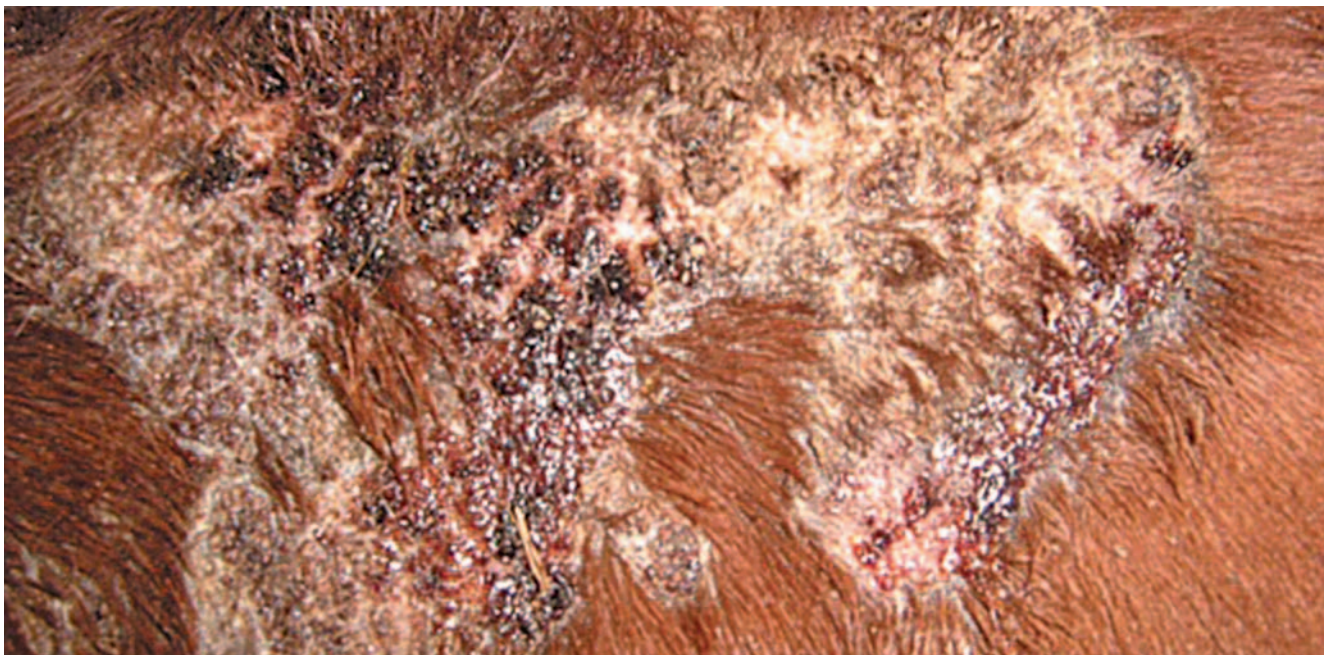

>>> Figure 1. A resistant staphylococcal infection on the side of a horse's neck.

thereby transmitting it to the horses," she says.

It's helpful to know if the horse has contracted the soil-borne ground-type *Microsporum gypsum*. "In a horse affected by *Microsporum gypsum*, if there's a particular area where a horse roots around or rolls, then you want to aggressively treat that area—the ground or stall floor—with some dilute bleach to try to eliminate it," Rees says.

Tactics on treatment. Various systemic ringworm treatments are available, such as oral griseofulvin, terbinafine and fluconazole. "The only problem with griseofulvin is that I have not seen a pharmokinetic study for it," Rees says. If you use terbinafine, keep in mind it may cause elevated liver enzyme activities, says Rees. Occasionally, fluconazole is used, though its cost has increased to where it's not a reasonable option in today's market.

Rees prefers topical therapies to systemic drugs. "In my opinion, miconazole works a bit better than ketoconazole," she says, though the latter is a reasonable alternative despite some concerns about resistance, especially for horses infected with *Microsporum canis*.

If owners don't want to shampoo their horses two to three times a week, they can also use a lime-sulfur dip. Although it has a fairly pungent, rotten egg-like odor, this treatment is very effective against fungus (and bacteria and parasites) at a higher concentration. A dilute bleach-solution rinse is an alternate treatment option.

Keep in mind that ringworm can be difficult to treat since the organism can linger. "One has to treat the entire environment as a source of infection, which is as important as treating the animal," Rees says. If more than one animal is affected, make sure to carefully disinfect various items shared by those horses in the barn to try to minimize the spread of the disease.

Product picks. Newer shampoos include BioHex broad-spectrum cleansing shampoo (VetBiotek), which combines a proprietary formulation of 2% chlorhexidine digluconate, 2% miconazole nitrate and MicroSilver BG for enhanced antiseptic activity. "The silver, per se, is antifungal, as well as antibacterial," says Rees. "It works well in the more difficult ringworm cases."

EquiShield CK spray (Kinetic Vet), which contains 2% chlorhexidine and 1% ketoconazole, is a topical antiseptic solution formulated for horses, dogs and cats. It can be easily sprayed with a hose on horses.

Staphylococcus aureus infection

Staphylococcos aureus infection can manifest in horses as warm, painful skin, with focal crusts most commonly noted in the pastern region, though similar lesions may occur elsewhere on the skin.

Methicillin-resistant *S. aureus* (MRSA) is a concern in horses. "Some of the horses that get recurrent infections seem to get MRSA, especially those that have been repeatedly treated with various antibiotics," Rees says.

Though MRSA is being more commonly seen in horses (Figure 1), it is not as common as in dogs and cats. The way to ensure the diagnosis is by performing a culture. "If you have a nonhealing wound or one that doesn't look quite right—or one that you never can quite get healed—then you must do a bacterial culture to make sure there is no MRSA," says Rees.

"Usually, when you have a resistant *Staphylococcus* infection, normally you have to use the antibiotic based on the culture results," says Rees. "Sometimes it's most effective to treat it a week longer than you normally treat it, just to make sure it's completely killed. In an ideal situation, it would be effective to reculture it, especially since it is potentially zoonotic, just to make sure it's totally gone before you stop the treatment—otherwise it potentially could come back again."

Rees' solution for owners who find the cost of treatment prohibitive? "They can bathe the horse with a 2% to 3% chlorhexidine or with a benzoyl peroxide shampoo, using it more aggressively every other day before trying a more expensive injectable or oral antibiotic to treat the infection."

Environmental concerns are important as well. "As MRSA is zoonotic, horses can become infected from human handlers, particularly those who work in the human health field, carrying the bacteria to the stall via their nasal passages," says Rees. People working with an affected horse should wear heavy latex gloves, as they might get infected via scratches on their hands or other skin wounds.

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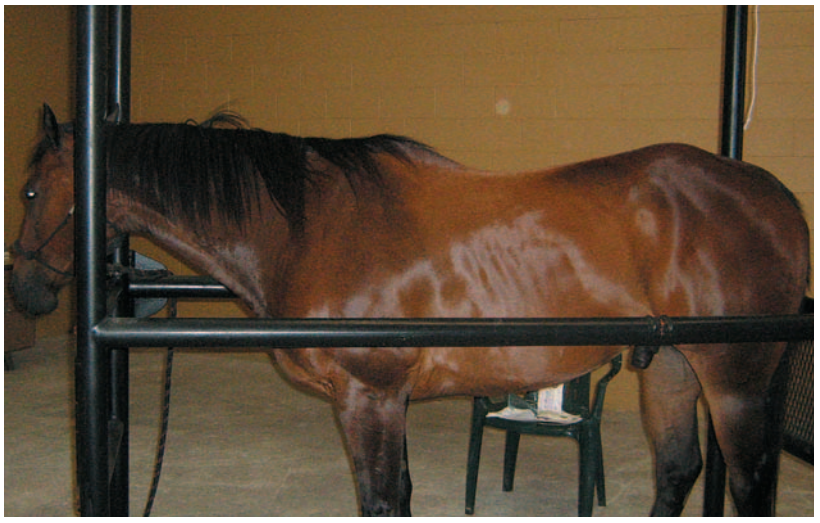


>>> Figure 2. Insect allergies with secondary alopecia and mild bacterial skin infection.

Product picks. Vetericyn Plus VF hydrogel (Innovacyn) is designed to adhere to the site of application, allowing this advanced hypochlorous formula to penetrate the wound bed. The hydrogel does not cause dermal irritation and is safe for use in sensitive areas.

A dilute bleach shampoo, Command (VetriMax), formulated with sodium hypochlorite and salicylic acid, is an effective monotherapy for the treatment of superficial canine pyoderma associated with MRSA. "I have not used Command that much in horses, so I don't really know how well it works. In small animals it has been effective in some cases, but not always," Rees says. "I prefer Biohex rather than Command."

Insect bite hypersensitivity

Insect bite hypersensitivity, caused by flies and other insects, is a major cause of allergy in horses (Figure 2). Some fly species (black flies, deer flies, horse flies) produce this condition, but there is debate whether it is a true hypersensitivity or allergy or just an irritation, as several fly species deliver painful bites.

Although several insects produce hypersensitivity, the one most studied is from the *Culicoides genus*. It has been shown that certain proteins from the saliva of these insects will induce an allergic response in horses. Some of them are ventral feeders, while others feed along the dorsum.

"If horses are solely allergic to *Culicoides* species, immunotherapy or allergy shots don't seem to work as well because the allergen is not only derived from the insect saliva but the entire insect ground within it, making it less effective," says Rees. "Usually steroids or antihistamines are helpful. Some use methylsulfonylmethane, an anti-inflammatory medication, or omega-3 fatty acids.

"The treatment mainly involves trying to repel the flies with pyrethrin or similar drugs, though there are studies of varying success of these drugs," Rees continues. "We probably ideally need to include more horses in the [insect bite hypersensitivity treatment] studies and to identify the species of the fly. It seems that horses that have hypersensitivity to *Culicoides* also have similar sensitivities to other allergens such as pollens, dust and mold."

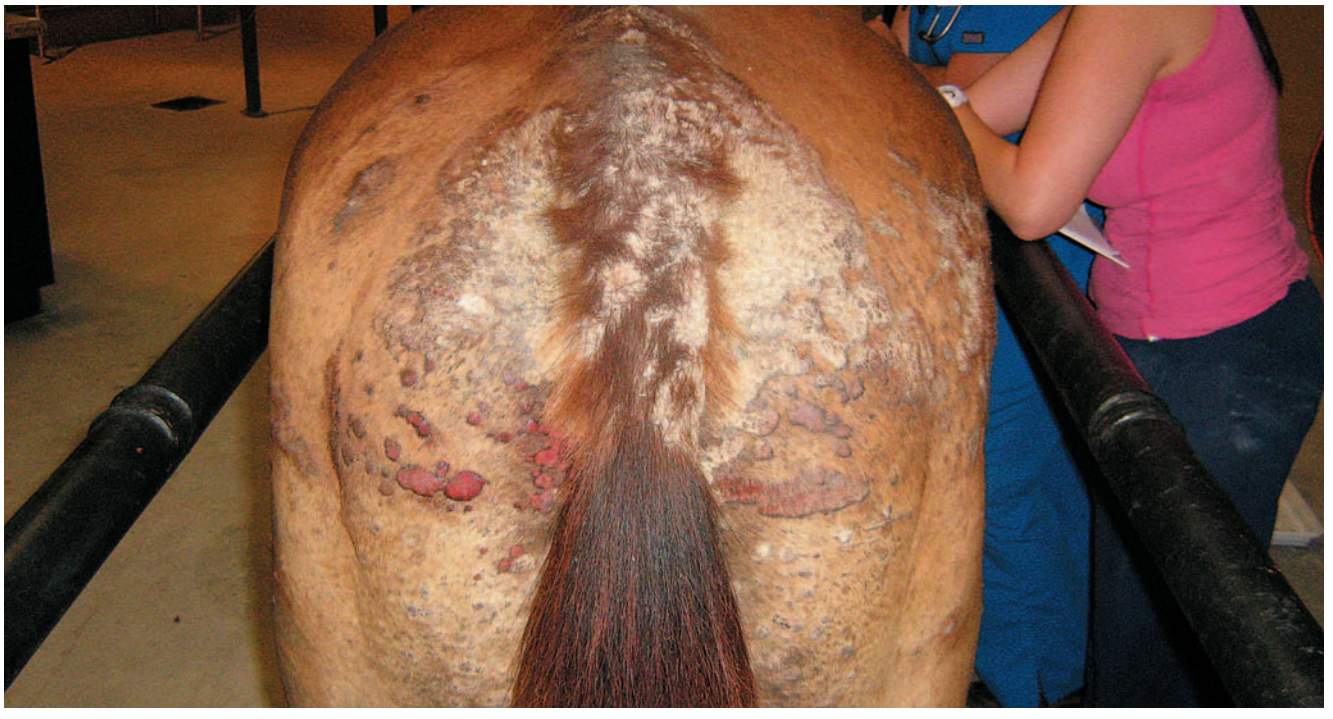
Another key is to reduce the prevalence of insects in the horse's environment. Horse owners can place fish in stock ponds to reduce mosquitoes, fans in stalls to reduce flies (especially for *Culicoides* species) or use fly sprays or fly facemasks.

"*Culicoides* tend to be poor fliers and like water sources, so you want to remove the horse from free-standing water areas, if possible, putting it in a pasture without a pond or stream running through it," Rees explains.

Some cases are difficult to diagnose, looking like typical insect allergy but actually ending up being atopic environmental allergies, Rees says.

Environmental allergies

"Atopic dermatitis and environmental allergies to dust, molds,



>>> Figure 3. Fungal and bacterial infection around tail and hip area secondary to atopic dermatitis.

pollen and poor-quality hay are quite common equine allergic responses," says Rees. Hives are common and can present anywhere on the body but are typically found on the face, neck, chest and upper legs.

Another consideration is allergic contact dermatitis, which occurs when irritating substances, such as fly sprays, shampoos, liniments or other substances come into direct contact with the skin of hypersensitive horses. Signs may include mild redness, flaky and itchy skin, severe hair loss, skin thickening, pain and occasionally skin sloughing.

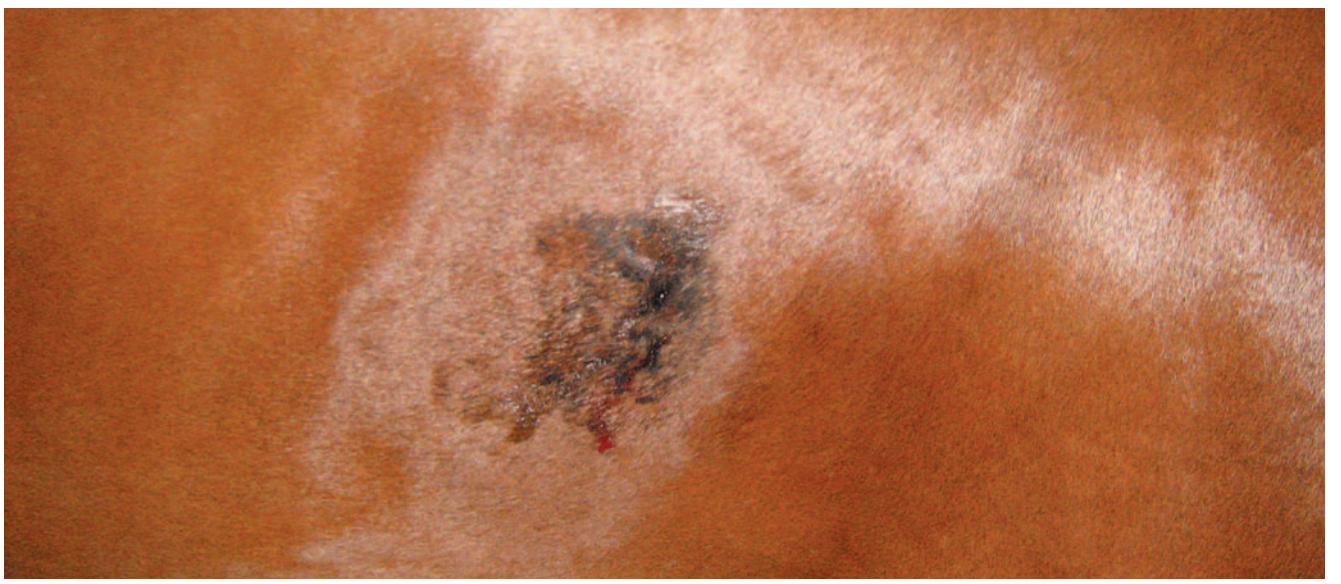
Horses often get opportunistic secondary infections with itchy skin, especially horses with allergic skin conditions (Figure 3). "In an allergic individual, we don't think the barrier function of the skin is exactly the same as with a normal individual," says Rees. "When they are having an allergic flare-up, they may be more predisposed to picking up bacteria or fungus that are out in the environment than a normal animal would be."

An owner can try to minimize an inhalant (mold, pollen, dust) allergy by reducing exposure. Strategies include ensuring good-quality clean bedding, changing it often and wetting the bedding down to reduce dust. However, owners should be cautious of excessive wetting, which may encourage mold growth and exacerbate the situation.

With an inhalant-sensitive animal, the hay must be mold-free, and a confined horse must have sufficient air exposure. "Bathing them often to reduce the pollen to skin exposure is useful also," says Rees. "Unfortunately, some are so allergic that they need antihistamines, allergy shots or corticosteroids such as dexamethasone," Rees says. "But in horses, one has to be careful with excessive use of steroids due to the concern for hoof issues and laminitis."

Allergen specifics. Some horses are allergic to alfalfa, so Rees suggests sweet feed, Omolene (Purina) or rolled oats as an alternative to feed pellets containing alfalfa. She says in one unusual case, a horse owner had Guinea hens. As her horse was severely allergic to feathers, it was imperative to keep the horses separated from the hens. Rees says many of her cases respond to immunotherapy better if the allergen load is decreased in the horse's environment.

"I do a lot skin testing, though



>>> Figure 4. *Pseudomonas* species infection on the side of a horse's chest from bacteria being trapped in the neoprene saddle pad.

horses are somewhat different from other species in that they can have both delayed as well as immediate hypersensitivity reactions," says Rees. Thus, she does readings at 15 minutes and 30 minutes and then a delayed reaction reading four to six hours afterward. "I think it does make a difference to do so," she says.

For both small animals and horses, storage mites are a larger potential cause than previously thought. "I've begun to add them to my diagnostic panel and to my immunotherapy based on the allergy test results," says Rees.

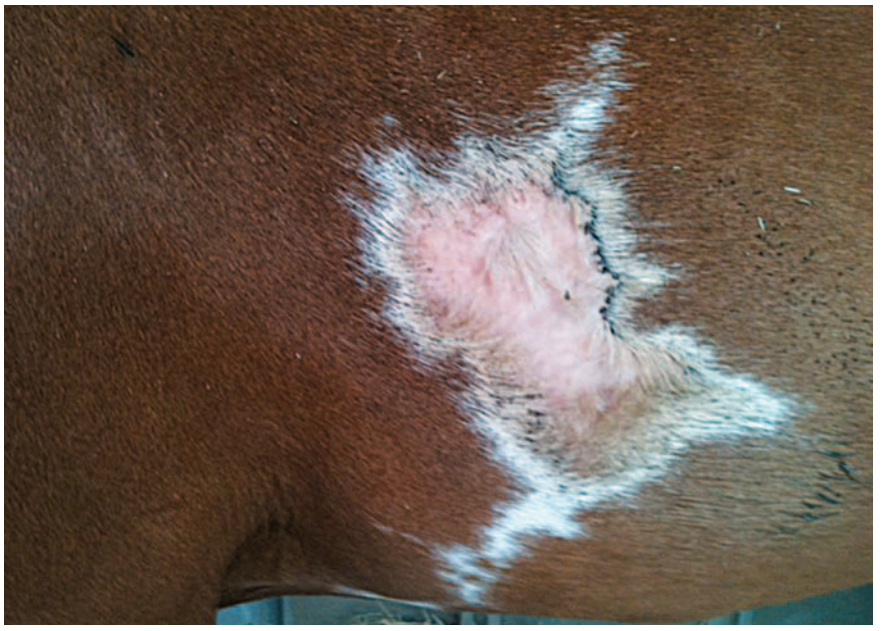
Product picks. Rees says sublingual immunotherapy, a newer treatment form, appears to have helped in several of her allergy cases. "The problem with the sublingual treatment is that one has to do it daily, so it's a matter of compliance regarding client usage and interest. Most horse owners will accept the allergy vaccine. The injection versus sublingual treatment due to compliance issues makes more sense for horse application."

Platinum Performance makes a skin and allergy supplement for horses. Adding the powder to the feed seems to be beneficial to reduce itching and the allergy, Rees says.

Common skin cancers: squamous cell carcinoma and melanoma

Squamous cell carcinoma is a malignant tumor of the outmost layer of the skin. It is typified by reddened, roughened or ulcerated skin and is associated with exposure to the sun in horses (unlike melanoma). It's often seen in sunny areas like Florida, Texas and Arizona on horses' eyelids, nose, genital region, poorly pigmented areas or areas of lightly haired skin. It's usually preceded by actinic dermatitis characterized by erosions or ulcers. Most clinicians are familiar with this condition and readily perform a biopsy. It's important to protect susceptible horses from sun, Rees says—lighter-coated horses such as palominos and gray- or white-coated horses are particularly at risk.

With melanoma, surgical removal is the best form of treatment, Rees says. Some breeds, such as Appaloosas, get these tumors at the tail and they tend to be benign. Other lesions are locally aggressive. "Some veterinarians will biopsy them to determine their mitotic rate or only remove them if they are located in a bad spot, such as the penis, the rectum or an area affecting a bodily function," Rees says. "They are a little different than those seen in people in that there are some horses in which they are not as aggressive a cancer, especially grays. Some have tried a melanoma vaccine or use Tagamet (cimetidine) to try to shrink them. Some claim that it helps, though I have not seen that it does. The only way to properly treat it is surgically."



>>> Figure 5. Photosensitization in a paint horse. Note that the skin lesions are limited to the white-haired areas.

Miscellaneous skin diseases

Keep an eye out for these possible causes of dermatologic issues as well:

***Pseudomonas* species infection**. "I commonly see horses that have hair loss and are itchy," says Rees—infections are a concern in these cases. "I had one horse with *Pseudomonas* species infection [in which the bacteria] was getting trapped in the neoprene of the saddle pad blanket (Figure 4). It wasn't until we started giving the right antibiotic and got more aggressive with cleaning the saddle pad that it resolved."

Sarcoids. Sarcoids, which frequently occur in areas subject to trauma, are associated with bovine papillomavirus. Some speculate that the virus may be spread by biting flies or fomites. Sarcoids appear as wartlike, ulcerated nodular areas or flat plaque surfaces, usually on the ears, lips, neck and ventral abdomen or around the eyes.

Fungal infections. "Sometimes we see opportunistic fungal infections when a horse gets a small puncture wound with resultant localized fungal infection," says Rees.

Dermatophilosis. Rees says dermatophilosis, or rain rot, occurs if a horse has been out in the rain frequently during a particularly rainy season. Also known as rain scald or mud fever, dermatophilosis is a bacterial infection aggravated by prolonged exposure to moisture coupled with injured skin. Chronically infected animals are usually the source of the infection. Transmission may occur via flies, ticks, grooming equipment or tack. The lower layer of hair is firmly matted in small scabs, which leave a raw surface when removed. The roots of the hair can be seen protruding from the crust and may have a covering of yellowish-orange pus. The affected areas are sore to the touch but are not itchy to the horse.

Photosensitization. This condition is an abnormal inflammatory skin reaction to the sun's ultraviolet rays that occurs in areas of white hair or pink skin (Figure 5).

The big picture

A theme echoing in many of these common skin conditions that can develop in horses is the importance of taking in a horse's environment. Are known allergens prevalent? Is too much sun exposure causing damage? Are irritating bugs buzzing about too readily? Knowing the dangers of what this vital protective layer must fight off each day can help you prevent or reduce the potential for serious skin issues. dvm360

Ed Kane, PhD, is a researcher and consultant in animal nutrition. He is an author and editor on nutrition, physiology and veterinary medicine with a background in horses, pets and livestock. Kane is based in Seattle.

Clustering visits to clients in close proximity can't prevent those days when what you really need is a practice helicopter. One solution: the midlevel veterinary practitioner designation.

Rural equine docs: **Get to the chopper!**

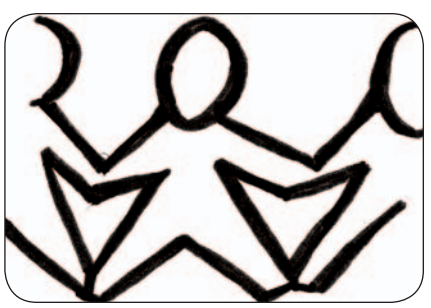
Oh that's right. You don't have a helicopter. But there is someone who could chop away at your duties and increase efficiency—a midlevel practitioner. Is it time to consider an answer out of human healthcare's playbook? *By Kyle Palmer, CVT*

While the economy in the veterinary industry has largely rebounded—at least in my neck of the woods—it's still an open question as to whether the ambulatory equine-only practitioner will be able to survive outside more densely populated areas.

Why? Because travel time—between large pieces of property and far-flung pockets of development—eats into profitability. If veterinarians charged the same rate for travel time that they did for professional time, many clients might decide that the closest veterinarian was the best veterinarian.

Of course, proper scheduling is a big help—clustering visits to clients in close proximity on the same day. Unfortunately, even the best efforts can't prevent those days when what you really need is a practice helicopter. Furthermore, as the quality of medicine we provide continues to rise, so does the cost of equipment necessary to offer that level of care. In many cases, the only way this equipment can pay for itself is if it's used more frequently than a rural practitioner could ever manage.

What's the solution? Maybe it's time for veterinary medicine to explore a midlevel practitioner designation.



Bring in the middleman (or middlewoman)

Human medicine has nurse practitioners and physician assistants, both designed to take some of the burden off physicians. Veterinary medicine may be served by some-

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thing similar yet different.

Currently, veterinary technicians (who may soon be known as veterinary nurses) can perform many tasks only under various levels of veterinary supervision. An obstacle in sending out a technician alone on a farm call is the very real possibility that the horse owner will think of other needs on the spot—tasks that require a doctor by law but could be handled by a midlevel practitioner with a little more schooling and experience. Maybe the horse scheduled for vaccination or deworming is showing signs of a complication that was previously unknown—a midlevel practitioner could manage these situations if law allowed.

There's no reason why our industry can't create a new distinction, expand the existing technician role or, better yet, embrace the growing veterinary technician speciality (VTS) distinctions with some expanded responsibilities. More education, different education or specific training could help equine veterinary professionals build a model more similar to human healthcare.

Think of the efficiency!

Many state practice acts draw a fine line between the technician's ability to measure and record findings and the ability to diagnose. In many, many conditions, that line exists as an administrative distinction only. Either a veterinarian or a technician can measure elevated breathing, nasal discharge and ocular discharge and observe the cough the client has been seeing for days. Deciding what to prescribe is another matter, but that could be done remotely by a conversation between the technician and the veterinarian.

I'm not advocating for the existing technician guidelines to be expanded to that of a midlevel practitioner—though that argument could be made. But a new designation that required more initial education and continuing education could enhance equine practices' efficiency, profitability and medical care offerings.

Think about a day when there are six challenging visits already scheduled, and suddenly Mrs. Jones (who lives in the opposite direction) needs someone to vaccinate her horse and look at a skin mass. Is the industry better served by making that veterinarian cover an entire county in one day, or could a midlevel practitioner visit Mrs. Jones, administer the vaccine, examine the mass, take a detailed history and perhaps take an aspirate? When we talk about the shrinking pool of equine-only veterinarians graduating, or worse, the rising number of equine-only associates who move on to mixed-animal or companion-animal-only practice because of time and money problems, this is one small option that could help.

Do we all need one of everything?

To take the concept a step further, when 10 different veterinarians cover a huge rural area, is it plausible for each of them to own a top-level ultrasound unit and digital radiography system? Many of the practitioners I talk to would love to be able to refer clients to a practitioner solely focused on imaging without risking the loss of a client.

A midlevel practitioner could help fill this need.

After one of those 10 veterinarians saw a horse that required radiographs, he or she could simply refer to that midlevel practitioner for imaging. The veterinarian would be free to move on to her next call, while the imaging midlevel practitioner would schedule the horse—along with referrals from any of the other nine veterinarians in the area. It's a much more efficient use of time and money. The radiographs would be sent electronically to the referring veterinarian, who would then make a diagnosis and prescribe treatment. The same scenario could work for ultrasounds, although those require more interpretation in the moment. In either situation, sedation could be called for, which means the midlevel practitioner would need the ability to administer those medications.

Let's start bulldozing these roadblocks

In some ways, human healthcare is way ahead of us—and this is one of them. If human doctors can coexist with a medical staff that occupies various levels of training and authority, why can't we?

Should a midlevel practitioner have the ability to prescribe? That's a complicated issue and needs more discussion—but I don't believe it's out of the question. After all, those responsibilities are an integral part of the human nurse practitioner and physician assistant positions.

I don't doubt that this concept of the midlevel practitioner is potentially divisive (as seems to be the case with any big change), but that doesn't mean it's without merit. Many good ideas start to evolve and grow once the first few roadblocks are overcome. It may be time to start this conversation and evolution toward a new structure that can add value to an already amazing industry. **dvm360**

Kyle Palmer, CVT, is a Firstline *Editorial Advisory Board member and a practice manager at Silver Creek Animal Clinic in Silverton, Ore. Please send your questions or comments to dvmnews@ubm.com.*

Brakke Consulting, Inc.

Pain management product study

Brakke Consulting's latest study, "Pain Management Products for Dogs and Cats," profiles the veterinary market for analgesics (both veterinary and human products) as well as nutritional supplements, therapeutic diets for joint support, and complementary therapies. The report includes an overview of pain management in veterinary medicine, leading product sales and pricing, and a discussion of new and developing products, including Galliprant and Nocita, as well as a number of novel molecules. The report also includes a survey of 325 small animal veterinarians probing their use of analgesics for both acute and chronic pain.

For fastest response visit brakkeconsulting.com

Heska Corp.

Immunodiagnostic analyzer with bile acids

Heska's Element i Immunodiagnostic Analyzer now tests for bile acids. Useful in the diagnosis of hepatobiliary dysfunction, bile acids is one of four immunodiagnostic parameters now offered, joining TSH solution, total T_4 and cortisol. The test finishes in 10 minutes or less per analyte. In addition, the Element i Immunodiagnostic Analyzer integrates with the HeskaView Integrated Software Program and the Heska Data Capture Utility. Veterinarians can use the software to select multiple test results over various dates to examine trend data from each patient record.

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Henry Schein Animal Health

Website redesign

Henry Schein has redesigned its website henryscheinvet.com. The new site features enhanced educational content, simplified navigation, new search capability, greater product information and a range of offerings to enhance veterinary customers' online experience. Customers also have access to more product information, product comparisons and ratings, and a resource center featuring webinars, white papers and blogs about animal health, industry trends and practice management. Developed using responsive design, the website is compatible with all mobile devices and tablets and is optimized for today's browsers. The update is the latest in a series of planned company website enhancements, following the relaunch of henryschein.com earlier this year.

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Feline Furball Pro contains fatty acids, antioxidants, natural sources of enzymes, and psyllium fiber to support optimal gastrointestinal tract function and to alleviate internal conditions that cause the collection and formation of hairballs. This formula also includes probiotics to maintain proper gut flora and to assist in digestion and absorption of nutrients.

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[1]Data on file at Merial.

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Virginia is for veterinary products

They'll tell you, "Virginia is for lovers," but that's not what I saw in the exhibit hall at CVC Virginia Beach. Well, maybe lovers of veterinary products. *By Brendan Howard, Business Channel Director*

'Your pal cannot have surgery yet still deserves the best'

That's the message from the makers of the Hero Brace to dog owners (and the veterinarians supporting them) when it comes to dogs with torn cruciate ligaments that can't have surgery for medical or financial reasons. Ace Ortho Solutions, headquartered in Benkelman, Nebraska, communicates directly with veterinarians working with a painful dog and fabricates a custom brace for the suffering patient.

Highlights of the braces include under-sleeve suspension and plastic design that "does a better job of applying proper corrective forces to the joint" than fabric.

Braces are $799, with a free casting kit. Casting kits are $30 each for practice owners who want to keep them on hand.

Can you hear me now?

The answer may be, yes you can—even in your veterinary hospital's busy treatment area or action-packed reception area. The sales rep for Jive at CVC Virginia Beach talked up this phone system's "acoustic fencing," which uses an onboard speaker on the phone's base to recognize when you pick up a call. It works to filter out any background noises other than your voice. Sounds handy.

Another cool feature lets you use a Jive smartphone app to send texts from a personal smartphone and have it appear to come from your practice's main phone number—no more fear of texts back to the phone you need for calls from your kid's school.

You can buy or rent the VoIP phones, according to the sales rep. Monthly fees for Jive phone service range from $9.95 to $19.95 per line.

Hold it right there!

This is not a stickup. It's just a reminder that cats and dogs don't like skidding around on your exam room counters and scales. (Hey, those Fear Free folks call for that too!)

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Cool story? The paw print in the

company's logo and all over the mats themselves is from creator Chris Fricke's dog Utley, who made lots of trips to the veterinary practice while facing cancer. Utley hated those slippery tile floors and stainless steel exam tables. Want something different than Utley's paws? Talk to the company about a custom logo (VCA got one).

The smallest mat is $18.95; the two larger sizes are $22.95 each.

You're out!

The French made the bug-removing tool O'Tom and brought it to America

as the Tick Twister. Ticks, begone!

The tick remover comes in two sizes for smaller and larger ticks and uses a simple technique: Sweep the plastic prong between the tick's engorged body and head, then slowly turn until the offending parasite pops out.

Unless you're a big fan of forceps or your fingernails, maybe give it a try? And pitch it to your clients if they're squeamish about getting rid of ticks off their family dogs.

If you're curious, you can see it in action on Youtube.

Scratching an itch in all 50 states

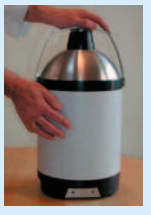
We wrote about Scratch after we saw this new smartphone-friendly payment plan for pet owners at WVC a few months ago. Since then, we've heard quite a few of you buzzing about the new player in helping clients pay. At the time, Scratch was live in a few states.

Now, Neil Stanga, VP of business development, says Scratch is in 10 states (Arizona, California, Florida, Maryland, Missouri, Montana, Oregon, Utah, Washington and Wyoming) and should be in 15 by the end of May. With applications moving in 45 states, the team at Scratch hope to be active in states covering roughly 75 percent of the pet-owning population in 30 to 45 days.

Basically, if Scratch isn't in your neck of the woods yet, it shouldn't be long. **dvm360**

dvm360 Find it all here

Clarification



An article in the May 2017 issue of dvm360 did not identify the manufacturer of the Medical Waste Machine, Medical Innovations. To read the updated article, go to dvm360.com/medicalwaste.

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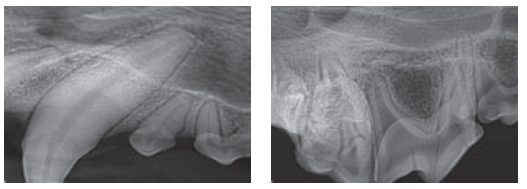

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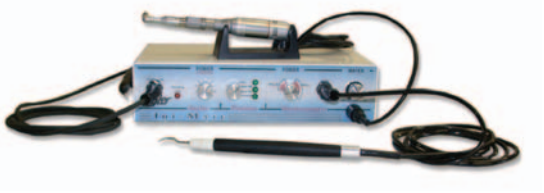

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For a full listing of events in 2017, visit dvm360.com/calendar

August 25-28, 2017
CVC Kansas City
(800) 255-6864, ext. 6
thecvc.com/kc

December 7-10, 2017
CVC San Diego
(800) 255-6864, ext. 6
thecvc.com/sd

Here are the CE opportunities coming in the next few months

August 2-5
2017 Therio Conference
Fort Collins, CO
(334) 395-4666
therio.org/event/2017Therio

August 5-6
Clinical Advantage—Technician's Workshop
Baltimore, MD
(410) 828-1001
AnimalDentalTraining.com

August 6
Comprehensive Canine and Feline Dental Extraction Course
Columbus, OH
(774) 230-4195
securosuniversity.com

August 6
It's What's Up Front That Counts!
Baltimore, MD
(303) 674-8269
vmc-inc.com

August 6
Vet and Tech Dental course—Dentistry CE for Veterinarians and Technicians
Portland, OR
(941) 276-9141
veterinarydentistry.net/vet-tech-dental-course-portland-oregon-2017

August 10
Indispensable Associate: Professional Skills Workshop
Oakdale, MN
(800) 883-6301
aaha.org/associate

August 11-13
Animal Chiropractic Module 6—Parker University
Dallas, TX
(800) 266-4723
ce.parker.edu/courses/animal-chiropractic/animal-chiropractic-program/

August 13
Veterinary Dental Extraction Course
Seattle, WA
(941) 276-9141
veterinarydentistry.net

August 13
It's What's Up Front That Counts!
Spokane, WA
(303) 674-8169
vmc-inc.com

August 13
Vet and Tech Dental Course—Veterinary CE for Veterinarians and Technicians
Seattle, WA
(941) 276-9141
veterinarydentistry.net/vet-tech-dental-course-seattle-washington-2017

August 19-22
AAHA Adventure CE Raft Trip
Vernal, UT
(800) 833-6301
aaha.org/professional/education/aaha_raft_trip.aspx

August 20
Vet and Tech Dental Course—Veterinary CE for Veterinarians and Technicians
Providence, RI
(941) 276-9141
veterinarydentistry.net/vet-tech-dental-course-providence-rhode-island-2017/

August 20-22
Comprehensive Small Animal Dentistry
Las Vegas, NV
(866) 800-7326
wvc.org/course/comprehensive-small-animal-dentistry-2/

August 23-25
The Veterinary Economics Hospital Design Conference
Kansas City, MO
(800) 255-6864, ext. 6
thecvc.com

August 25-28
CVC Kansas City
Kansas City, MO
(800) 255-6864, ext. 6
thecvc.com

August 26
Veterinary Dental Extraction Course
Hartford, CT
(941) 276-9141
veterinarydentistry.net

August 26-27
Veterinary Ophthalmic Surgery for the General Practitioner: Surgery of the Eyelids and Orbit
Las Vegas, NV
(866) 800-7326
wvc.org/course/ophthalmic-surgery-for-the-general-practitioner-surgery-of-the-eyelids-orbit-2/

August 27
Comprehensive Extracapsular Stifle Stabilization Course
Boston, MA
(774) 230-4195
securosuniversity.com

August 27
Vet and Tech Dental Course—Veterinary CE for Veterinarians and Technicians
Hartford, CT
(941) 276-9141
veterinarydentistry.net/vet-tech-dental-course-hartford-connecti-vut-2017/

August 27-28
One Health Innovations Research Symposium: Preventing the Next Pandemic
Kansas City, MO
(816) 753-7700
kclifesciences.org

August 28-29
Fracture Repair in Toy Breed Dogs and Cats
Las Vegas, NV
(866) 800-7326
wvc.org/course/fracture-repair-in-toy-breed-dogs-cats-3/

September 8-9
Equine Pre-Purchase Examination—A Discipline-Specific Interactive Approach
Dover, NH
(844) 870-6097
vetpd.com

September 8-10
Fundamentals of Dentistry—3-Day RACE Accredited Series
Baltimore, MD
(410) 828-1001
animaldentaltraining.com

September 9-10
Dermatology for the General Practitioner
San Diego, CA
(619) 640-9583
sdcvma.org

September 9
Veterinary Dental Extraction Course
Charlotte, NC
(941) 276-9141
veterinarydentistry.net

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Veterinary surgery, junior high edition

Wood-n't you know, I credit my capabilities in the veterinary surgical suite to my junior high school woodworking teacher.

In 1978 I walked into a woodworking class at Fannin Junior High School in Amarillo, Texas, with no idea how it would influence my life. The shop was in the northeast corner of the school, far enough away from the rest of the campus that the constant noise of power tools wouldn't interrupt other classes.

The woodworking teacher, George Howle—a big man who'd played college football—was the largest man I'd ever seen as a scrawny eighth-grader. Equipped with a giant mustache and cowboy boots, he spent the entire first class talking tough to us about safety around power tools and the dangers of shop class.

Mr. Howle had developed a thriving industrial arts club at the school and would spend countless hours in the shop almost every night helping students with projects for competitions or for class. Even though he put on a tough cowboy act, he had the heart of a teddy bear and never seemed to quit teaching.

I became very involved with woodworking and, though I probably wasn't very good at it, Mr. Howle made me feel like a master. I built projects and took them to state competitions. For the two years I took shop from Mr. Howle, I kept trying and learning.

What has all this to do with being a veterinarian? Twelve years later I was standing in front of a group of friends and professors at a banquet toward the end of my fourth year of veterinary school. I had been given an award, voted on by the professors, for being the most outstanding student surgeon that year. I knew I was not the most talented surgeon in that class, but I was the most prepared to do surgery, all because of Mr. Howle.

I had to say a few words as I accepted this award, and I spent every word I had praising my junior high shop teacher. I explained that he had already taught me most of the things we did in surgery—lag screw fixation, tapping and drilling, estimating and measuring angles for fixation and applications. He had taught me how to cut with and against the grain and which blade worked best for each. He had taught us plumbing and how to join pipes of different diameters as well as how to suture leather and work with pleats. He had taught me to think like a draftsman and have all of the plans ready in my mind before I started the building.

I didn't realize until near the end of my veterinary training that almost every surgery we performed on animals was borrowed from someone like Mr. Howle who was already doing it on wood or metal or pipes. I was ready to be a builder using wood and steel long before I got a chance to do almost the exact same things on living tissue.

As luck would have it, Mr. Howle retired a few years back and now lives just 30 miles from me. I go to his shop and build projects even to this day. He is still teaching me, and I still learn new ways to be a better surgeon from him. I love bending wood and building rocking chairs with George Howle, and I can't thank him enough for taking me under his wing all those years ago.

A few weeks ago, Mr. Howle was inducted into the Technology Student Association Hall of Honors, the highest award that can be given to someone who's spent their life teaching students in ways that changed them forever.

In recent weeks I've been pondering the effects of a good teacher. Good teachers show us how to think and how to do things, even more than they realize when they're doing it. There's no way Mr. Howle had any idea he was teaching a puny eighth grader named Bo how to be a surgeon someday—but he was. **dvm360**

Bo Brock, DVM, owns Brock Veterinary Clinic in Lamesa, Texas. His latest book is Crowded in the Middle of Nowhere: Tales of Humor and Healing From Rural America.

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Other evidence of kidney disease?

- Inappropriate urine specific gravity (USG) of <1.030 in a dog or <1.035 in a cat
- Active urinary sediment, particularly casts, white blood cells, or bacteria
- Proteinuria or urine protein:creatinine (UPC) ratio >0.5 in a dog or >0.4 in a cat
- History of weight loss, decreased appetite, polydipsia, polyuria
- Physical examination findings, such as palpable kidney abnormalities
- Creatinine, BUN, and/or phosphorus above reference interval
- Creatinine increasing within reference interval
- Anemia
- Other diagnostic findings (abnormal kidney imaging, unexplained hypertension)

YES

NO → **Recheck in 2–4 weeks** → **If SDMA remains increased**

Kidney disease probable—act immediately

Follow IMM protocol

Investigate

To identify an underlying cause, perform:

- Urine culture and MIC susceptibility
- Infectious disease testing (Lyme disease, leptospirosis, ehrlichiosis, FeLV, FIV, FIP, toxoplasmosis)
- Diagnostic imaging (stones, pyelonephritis)
- History/possibility of toxin exposure?
- History/exposure to potentially nephrotoxic drugs?

For confounding conditions, assess:

- Hydration status
- Blood pressure
- Urine protein:creatinine ratio
- Thyroid status

Manage

Treat appropriately

- Underlying disease if identified
- Clinical dehydration
- Persistent hypertension
- Persistent proteinuria
- Hyperthyroidism

Provide kidney support immediately

- Feed kidney-supportive diet
- Provide fresh, clean water sources
- Discontinue all potentially nephrotoxic drugs if possible

Adjust anesthesia protocols

- Provide intravenous fluids, before, during, and upon recovery
- Provide oxygen, before, during, and upon recovery
- Maintain and monitor blood pressure and body temperature
- If needed, use narcotic for pain management

Monitor

Underlying or confounding disease identified

Monitor as indicated

Underlying or confounding disease not identified

Recheck in 2 weeks

SDMA returns to normal

- Kidney function has returned to normal
- Monitor confounding conditions and other underlying disease if present

SDMA remains increased but stable

- If SDMA and creatinine are stable, chronic kidney disease (CKD) is diagnosed
- Initiate appropriate treatment based on International Renal Interest Society (IRIS) CKD staging

SDMA continues to increase

- If SDMA and/or creatinine are increasing, consider ongoing, active kidney injury
- Perform additional diagnostics to determine cause and to guide treatment

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*Symmetric dimethylarginine.

†SDMA reference interval is 0–14 µg/dL. However, in puppies, the SDMA reference interval is 0–16 µg/dL. SDMA reference interval studies are underway for kittens and greyhounds, and results may also be slightly higher and should be interpreted in light of other findings.

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