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October 2017 | Volume 48 | Number 10 | dvm360.com

Don't make these OR mistakes

A surgeon and anesthetist say these 8 things impact outcomes

page M1

Vets aid Harvey victims, battle personal effects themselves

Practitioners providing relief and rescue services say the needs will continue for months to come. *By Jessica Vogelsang, DVM, CVJ*

They call them the garbage can pups, because that's how they arrived at the emergency shelter.

"The garbage can idea turned out to be pretty ingenious," says Katie Eick, DVM, pointing out the resourcefulness of a pet owner in an emergency situation. Three dogs, not enough crates, rising water, little time: put them in the can and head for the shelter.

The pups were among the thousands—some estimates say close to a million—animals affected by the record-breaking fury of Hurricane Harvey. Dr. Eick, who owns South by South Mobile Veterinary Service in Houston, says that like many others, she was not expecting the severity of the storm. "I did not realize until Sunday [Aug. 27] when I saw pictures of the flooding downtown that this was serious," she says. "I didn't even go to the grocery store before the storm hit, thinking it was going to be a false alarm."

She and her family escaped unscathed, and without waiting to catch her breath Dr. Eick

See page 19 >

Where have all the technicians gone?

Many practices are finding it difficult to hire—and keep—credentialed veterinary technicians. Learn what's going on with these elusive creatures. *By Julie Carlson, CVT*

Until recently, I was the hospital manager at a small clinic in Phoenix. Part of my job was interviewing and hiring veterinary technicians. When I advertised for a full-time veterinary technician position, I only received three resumes in a month. Only one of these applicants was credentialed. The other two had no veterinary experience beyond owning pets. Conversely, when I placed an ad for a receptionist, I got more than 100 resumes in a week and ended up canceling the ad because of the overwhelming response.

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fetch dvm360 CONFERENCE™

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Big protests lead to bigger consequences
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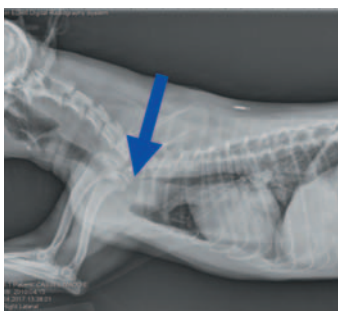

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[1] Data on file at Merial.
[2] Freedom of Information: NADA140-971 (January 15, 1993).

MERIAL

Please see brief summary on page 03

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Volume 48, Issue 10

ON THE COVER

Where have all the technicians gone?

PLUS: Hurricane coverage

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UBM

The Banfield summit: A report

When the largest corporate practice speaks, everyone else listens.

This year's Pet Health Industry Summit hosted by Banfield was once again an interesting convergence of ideas and influencers. The invitees to this annual event are drawn from industry, organized veterinary medicine, the nonprofit arena, academia and veterinary practice—and a few veterinary media observers are thrown in for good measure.

In the six years I've attended, I've discovered that when Banfield says, "These are important topics the veterinary profession needs to address," they're right—and they're often ahead of the curve. For instance, Banfield was talking about the crisis of well-being among veterinarians and the impact of millennials in the marketplace long before others identified these as important topics. Of course, it shouldn't be lost on anyone that these issues affect Banfield disproportionately, with its 1,000-plus hospitals, and its leaders get some awfully good input by assembling the top brains in the profession to discuss potential solutions.

Be that as it may, Banfield also shares its own insights fairly freely with the group in a way that seems open-handed, with the good of the profession in mind. Here are a couple of things they talked about this year:

> Veterinarians' well-being. Unfortunately, this issue is not going away. Banfield sees the emotional and mental health challenges that continue to plague the profession as intertwined with the financial struggles that accompany enormous student debt loads. In light of that, Banfield is working to build a stronger culture of health and well-being across its practices, and it is providing its associates with resources to help manage student debt, such as counseling, contribution and refinancing programs.

> Patient safety tracking. According to chief medical officer Dan Aja, DVM, Banfield has begun tracking "patient safety events"—occurrences that may have or did lead to patient harm—across its hospitals. The initiative is not about assigning blame but identifying problems in the system, Dr. Aja says. One result? Banfield no longer uses a certain type of muzzle on brachycephalic breeds because the patient safety tracking system identified it as problematic. While this kind of reporting is not mandatory the way it is in human hospitals, Banfield has discovered that DVMs are actually more willing to report safety errors than their human health counterparts.

CVC San Diego named one of 50 fastest-growing shows

fetch dvm360 CONFERENCE

Trade Show Executive magazine lists veterinary conference on its Fastest 50 Awards and Summit list.

Trade Show Executive magazine, creator of the Fastest 50 Awards and Summit, has recognized CVC (now Fetch) in San Diego as one of the 50 fastest growing shows of 2016.

"*Trade Show Executive* honors the fastest-growing shows held in the United States during the previous year," the company's website explains. "Fifty winners are selected based on the percentage of growth in each of the following categories: net square feet (nsf), number of exhibiting companies and number of attendees."

CVC San Diego was a conference that grew in all three categories, one of two veterinary-specific shows to do so. "Two conferences for veterinarians seemed to be immune from the overall sluggish performance of events for people medicine," the *Trade Show Executive* website states. "CVC San Diego, one of a three-conference series by UBM Life Sciences, … grew 1.8% to 17,000 nsf, but attendance shot up to 14.5% to 3,461."

Trade Show Executive's FASTEST 50 AWARDS & SUMMIT

The other conference to grow in all three categories was the AVMA annual convention, which took place in Boston in 2016.

Fetch will take place in San Diego Dec. 7-10 with a new name, a new look and a reimagined educational experience. Visit **fetchdvm360.com/sd** to learn more.

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CVC renamed, reinvented as Fetch, a dvm360 conference

Conference presented by dvm360 team will focus on all facets of veterinary life and amp up the engagement.

By Katie James, Associate Content Specialist

Before a crowd of veterinary professionals poised to eat, drink and make merry late into the mild summer evening, UBM leaders took to the stage August 27 to unveil a new identity for the conference known until now as CVC. "I have the honor of letting you in on some very big news," said Christie McFall, vice president and general manager of UBM Animal Care, at the annual CVC Block Party in Kansas City's Power and Light District. "We have a new name. CVC is now Fetch, a dvm360 conference."

Fetch will provide the same high-quality CE veterinarians and team members expect, but it will also deliver a completely reimagined learning experience, McFall told *dvm360* in an interview.

"I'm really excited for the folks who attend our show for the continuing education—which is imperative to their business, their way of life, their income and their career—to know that we are doing more than just checking the box they need for CE," McFall says. "We are going to bring more to their lives."

McFall and the UBM Animal Care team are positioning Fetch as an "innovative 360-degree educational engagement experience" that focuses on every facet of a veterinary professional's life, providing not only industry-leading CE but also inspiration, wellness, community and solutions to veterinary professionals' most pressing problems.

"Not only is it a new name, new branding and new colors—which is exciting—but Fetch is going to take a 360-degree approach to training and supporting veterinarians, technicians and practice managers," McFall says. "We're caring for veterinary professionals as whole people."

As part of the announcement, McFall also unveiled a new design for dvm360. "dvm360 is the veterinary market's full-circle resource," she says. "Our team cares. And we develop the resources veterinary professionals need to be successful in every area of their lives."

Fetch is part of the dvm360 family of brands that also includes *Vetted*, *Firstline* and *dvm360* magazines along with the dvm360.com website. The parent company is UBM, a global events-first company, of which UBM Animal Care is a division.

While many in the veterinary world recognize dvm360 as the leading media-content provider in the profession, not everyone realizes that the content at CVC events has always been produced by the dvm360 team, McFall says. "Bringing those brands closer together makes each stronger—and creates a better experience for veterinarians and team members, as well as the industry that serves them," she says.

The Fetch dvm360 conference experience will become a reality beginning with Fetch in San Diego, Dec. 7 to Dec. 10, 2017, and continues in 2018 and beyond. "We are excited to introduce this newly unified brand family to the market," McFall says.

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STAY CONNECTED

FTC requires Mars to divest 12 veterinary clinics nationwide

Corporation required to sell emergency, specialty practices as a condition of acquiring VCA; FTC concerned about lack of competition.

In order to settle Federal Trade Commission (FTC) charges that Mars' $9.1 billion acquisition of VCA would violate antitrust laws, Mars has agreed to divest 12 veterinary clinics around the United States that provide specialty and emergency services, according to a recent FTC release.

Mars is required to divest each of the 12 clinics no later than 10 business days after the acquisition is complete to one of three buyers: National Veterinary Associates, Pathway Partners Vet Management Co. and PetVet Care Centers, the release states.

According to the FTC's complaint, if Mars' acquisition of VCA takes place as proposed, it may substantially lessen competition for certain specialty and emergency veterinary services in 10 United States localities by eliminating head-to-head competition between Mars specialists in the area and those of VCA.

The complaint continues that the acquisition would likely lead to higher prices for pet owners and lower quality in the specialty and emergency veterinary services they receive. Because launching a specialty or emergency clinic presents some unique challenges, including the need to recruit specialist veterinarians with more training than general practice veterinarians, the FTC does not anticipate that its concerns about anticompetitive effects would be alleviated by new practices starting in target areas.

Here are the veterinary clinics to be divested and their buyers, according to the FTC:

> One clinic each in Kansas City, New York and Phoenix will be divested to National Veterinary Associates.

> One clinic each in Chicago, Corpus Christi and San Antonio, and two clinics in Seattle will be divested to Pathway.

> Two clinics serving the Portland area and two clinics in the greater Washington, D.C., area will be divested to PetVet.

According to the release, Mars and VCA must secure all third-party consents, assignments, releases and waivers required to permit the buyers to conduct business at the divested clinics under the terms of the consent order. They must also provide reasonable financial incentives to key employees to continue in their positions.

Along with this, Mars is prohibited from entering into contracts with any specialty or emergency veterinarian affiliated with a divested clinic for a year after the order takes effect, the release states. Mars is also required for 10 years to notify the FTC if it plans to acquire any additional specialty or emergency veterinary clinics in certain geographic areas.

Thomas A. Carpenter, DVM, has been approved by the FTC as interim monitor to oversee the divestiture process, the FTC says. More information about the divestiture and consent agreement can be found here.

The commission's vote to issue the complaint and accept the proposed consent order for public comment was two to zero, according to the release. The FTC will publish the consent agreement package in the Federal Register shortly. The agreement will be subject to public comment for 30 days beginning Sept. 1 and will continue through Sept. 29. After that, the FTC will decide whether to make the proposed consent order final.

Comments can be filed electronically at ftcpublic.commentworks.com/ftc/marsvcaconsent/ or in paper form by following the instructions in the "Supplementary Information" section of the Federal Register notice once it's published.

VIN Foundation launches pre-veterinary school website

A comprehensive website providing pre-veterinary students with tips and tools for the veterinary school application process is live according to a recent release. The free website, Vet School Bound (vetschoolbound.org), was created by the Veterinary Information Network (VIN) Foundation, a nonprofit organization that supports veterinary students and veterinarians throughout their careers by providing tools and resources.

According to the VIN Foundation, Vet School Bound provides up-to-date information on veterinary school costs, class sizes and prerequisites for all United States and Caribbean veterinary schools. The mobile-friendly website is designed to be intuitive, pairing interactive maps with videos.

In order to build the website to best fit a student's perspective, the VIN Foundation collaborated with University of Missouri veterinary student Rachel Courville, founder of the YouTube channel "Bella Vet," the release states.

"I am honored to be involved in Vet School Bound because it is everything that I wish I had when I was applying to vet school," Courville says in the release.

The site addresses such questions as:

> What will my veterinary education cost?

> What prerequisites do I need for veterinary school?

> What veterinary school class size best fits me?

Organizers say more subjects will be added soon.

BluePearl-Louisville opens mobile medical unit for treating canine influenza

10 confirmed cases of the highly contagious H3N2 virus and four deaths were reported during the first month of operation.

BluePearl-Louisville's mobile canine influenza treatment unit provides patients with antibiotics, fluids and oxygen support. (Photo courtesy of BluePearl Veterinary Partners.)

Canine influenza can be tough to tackle in veterinary hospitals without doing more harm than good, but the BluePearl Veterinary Partners hospital in Louisville, Kentucky—one of eight states with confirmed cases of the H3N2 virus—may have come up with a solution.

On June 29, the staff opened a temporary medical unit for treating canine influenza that is separate—but not far from—its main facility, according to a BluePearl release. The mobile clinic operates out of a trailer in BluePearl-Louisville's parking lot, and it has been getting a lot of use.

Within the first two weeks, the Louisville team treated over 50 patients suspected of having the virus. As of July 31, the auxiliary unit had reported 10 confirmed cases of the H3N2 strain, and four patients had died of the highly contagious virus.

The temporary treatment trailer has been favorably received by both pet owners and primary care veterinarians.

"We've had a great response from the entire veterinary community and pet parents as well," said Scott Rizzo, DVM, MS, DACVIM, medical director of BluePearl-Louisville, in the release. "Together, we're attacking this disease as efficiently as possible."

Veterinary school deans take on new leadership roles

Dr. Phillip Nelson of Western University of Health Sciences is the incoming president of AAVMC, while Dr. Calvin M. Johnson is the new president-elect.

New leadership was installed at the American Association of Veterinary Medical Colleges (AAVMC) summer meeting. Phillip Nelson, DVM, PhD, dean of Western University of Health Sciences College of Veterinary Medicine, assumed the role of AAVMC president, while Calvin M. Johnson, DVM, PhD, DACVP, dean of the Auburn University College of Veterinary Medicine, became the president-elect, according to an association release.

Douglas A. Freeman, DVM, PhD, dean of the Western College of Veterinary Medicine at the University of Saskatchewan, transitioned to the immediate past-president position. Mark Markel, DVM, PhD, DACVS, dean of the University of Wisconsin School of Veterinary Medicine, will remain treasurer, and Paul Lunn, BVSc, PhD, MRCVS, DACVIM, dean of the North Carolina State University College of Veterinary Medicine, was named secretary, the release states.

Dr. Nelson earned his DVM from the Tuskegee Institute in 1979 and his PhD in immunology and biotechnology from North Carolina State University in 1993. He earned his bachelor's degree from Jackson State University. Before he became dean at Western University's veterinary school, he served as executive associate dean for the preclinical program. Prior to that he was the head of the department of small animal medicine and surgery at Tuskegee University's College of Veterinary Medicine, and he also served as associate dean at the Mississippi State University College of Veterinary Medicine for 11 years.

Education updates

Sheila Allen, DVM, MS, DACVS—AAVMC's Senior Accreditation Director—presented an update on Council on Education (COE) activities for members during the meeting that included recent and proposed revisions in the COE standards, data harmonization, a new Accreditation Management System and COE financial support, the AAVMC says.

The group also discussed veterinary specialty colleges that have decided to impose residency program registration fees on academic institutions that operate residency training programs. The AAVMC is opposed to the imposition of these fees, the release states, and talked over AAVMC policy development regarding states that enact discriminatory legislation and policies.

From left: Past-President Dr. Douglas Freeman, dean of the Western College of Veterinary Medicine at the University of Saskatchewan; President Dr. Phillip Nelson, dean of the Western University of Health Sciences College of Veterinary Medicine; and President-Elect Dr Calvin M. Johnson, dean of the Auburn University College of Veterinary Medicine.

PHOTO COURTESY OF AAVMC

New at-large board members include Oregon State University College of Veterinary Medicine Dean Susan Tornquist, DVM, PhD, DACVP, who represents Region 1 (U.S.); Ted Whittem, BVSc, PhD, FANZCVS, DACVCP, head of the University of Melbourne School of Veterinary Medicine, who represents Region 3 (Australia, New Zealand and Asia); and Tiffany Whitcomb, DVM, DACLAM, Pennsylvania State University assistant professor of comparative medicine, who represents departments of comparative medicine, the release states.

New board liaisons (nonvoting) include Bryan Slinker, DVM, PhD, dean of the Washington State University College of Veterinary Medicine, representing the Association of Public and Land Grant Universities, and Aaron Colwell, representing the Student American Veterinary Medical Association.

These appointments will be slightly truncated during this transition year as the AAVMC formally moves its annual assembly from the former summer meeting to the annual meeting, which is typically held in early March, the release states.

USDA veterinary training modules available for free CE credit

Agency allows more professionals to complete training in hopes of preventing the spread of zoonotic disease, among other goals.

The USDA's National Veterinary Accreditation Program (NVAP) training modules are now open to licensed veterinarians and veterinary technicians because of a partnership between the NVAP and Iowa State University, according to the AVMA.

There are 20 modules available for CE credit for accreditation renewal for USDA-accredited veterinarians who complete the training. All veterinarians and technicians can earn no-cost, RACE-approved CE credits, by completing an optional seven-question quiz with at least five correct answers, the AVMA announcement notes.

The USDA hopes to better prevent the spread of foreign animal diseases, zoonotic diseases and animicrobial-resistant bacteria by opening the modules to more veterinary professionals. These modules, which are available on the USDA's Animal and Plant Health Inspection Service website, are also open to the general public.

dvm360 product review: Dognition testing

dvm360 staffers—and their pooches—put this cognition testing platform through its paces.

The long-suffering family dog sits by the window all day long, ears angled to catch the sounds of the family car finally pulling up the drive. The caregiver walks in the door, tired from a long day, and hurries the ever-patient pooch through a quick walk and a few minutes of distracted play.

This is more than just a heartbreaking image. It's a reality for many of your patients.

About 68 percent of respondents to the 2017 dvm360 clinical updates: Pet enrichment study say at least half of their canine patients suffer from a lack of enrichment. Oy.

A whopping 99 percent of respondents say they think increased enrichment at home could help pets' overall health. We think that's a compelling reason to take a closer look at the enrichment opportunities your clients might entertain.

To wit, we at dvm360 performed a little product testing on our own. Using eight of our own pooches, we tested the online program, Dognition. (For transparency, we paid for the experience, so these opinions are completely our own.) Below you'll find a little more about Dognition—and our precious pooches, who performed the activities to bring you these honest assessments.

What's Dognition?

Dognition is a program developed by cognitive scientists, dog trainers and a veterinarian that purports to "find your dog's unique genius" though playing games with your dog and completing a pre-testing assessment. Here's how it works:

Pre-test. After you register and complete the profile information for your dog (things like age, breed, coloring and sex), you fill out a pre-testing assessment. It asks how your dog reacts in certain situations. For example, "When you (the owner) laugh, does your dog wag its tail?" Or "How does your dog react when it sees another dog outside?"

Play the games. There are 20 games in the Dognition program that you complete with your dog. Each game is prefaced with instructions in both text and video format, and a description of why this game was chosen and what aspect of cognition is being tested. There are only a few, readily at-hand props needed to complete the testing. The games fall into five categories: empathy, communication, cunning, memory and reasoning.

See the results. After completing the games you'll receive your dog's profile report. The report "gives you individualized insight into the cognitive strategies your dog employs, and in-depth breakdowns of the results of each game," the site says. It also includes graphs that show where your dog falls on the scale for the five categories.

After testing and receiving results, users may continue with a subscription for personalized activities they can perform with their pooch, based on their dog's results. The one-time assessment is $19. Users can also subscribe monthy for the one-time fee of $19 and a $9-a-month recurring fee or yearly for $79. Read on to learn more about the profiles, and find the complete results for all the dogs at **dvm360.com/dognition**.

STARGAZER

Janeway

Age: 1 year
Breed: Unknown
dvm360 staffer: Mindy Valcarcel, Medicine Channel Director

Janeway is a Stargazer! She's right down the middle for self-reliance versus collaborative, trustworthy versus wily and impulsive versus logical. But she's individualistic versus bonded and retrospective versus present-minded.

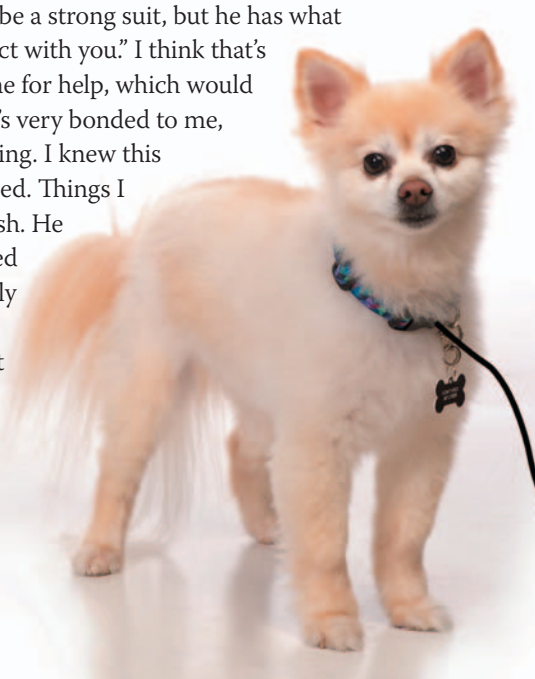
As for the testing itself, we did it all at once and she was completely over it by the end. Eventually it took much coaxing to get her to approach the test area to find the treat. In general, when asked to find a treat on the right or left side, she tended to just go to the right first no matter what. It became a habit, which she did overcome on a few tests. I don't think she cared where the food was.

Max

PROTODOG

Age: 6 years
Breed: Pomeranian
dvm360 staffer: Hannah Wagle, Assistant Content Specialist

Max is a Protodog. According to dognition, "Max is reminiscent of these first dogs. Independent problem solving may not be a strong suit, but he has what counts—a desire to communicate and connect with you." I think that's very true. During testing, he would look to me for help, which would lead to staring contests until I could help. He's very bonded to me, but he's dependent on me for almost everything. I knew this beforehand, but it was sweet to have confirmed. Things I think skewed testing: Max is incredibly skittish. He came from a puppy mill before he was rescued and because of this he's always been incredibly wary of everything around him, which made the tests involving cups a struggle. He doesn't like cups. Another is the fact that he's a very, very picky eater. I had to break testing up over a few days for fear that eating nothing but treats would make him sick.



PHOTOS BY GREG KINDRED

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[2] Data on file at Merial.

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CHARMER

Blitz Patrick James

Age: 6
Breed: Australian Cattle Dog mix
dvm360 staffer: Katie James, Associate Content Specialist

Blitz is a Charmer, as I predicted. Charmers are known for reading body language and using that information to get what they want, which is exactly what he does. Blitz loves the puzzle feeders he already had, so I was curious to see how he'd perform on these tests. We completed all the games in one evening with a break in the middle. Blitz was engaged in all the tests, and he's very food motivated, so I didn't have trouble getting through them all, but it is *a lot* of treats or food to give all in one sitting. It's something to keep in mind if you're trying to watch your pet's weight.

Alvin

SOCIALITE

Age: 9 years
Breed: Australian/German shepherd mix
dvm360 staffer: Kristi Reimer Fender, News Channel Director

Alvin is a Socialite. At first I was surprised and skeptical, because he doesn't like to hang out with us when we're relaxing—he'd much rather be out in the yard keeping an eye on things. But I realized he absolutely loves people. He gets super-excited anytime someone new shows up. I'm really not sure the empathy tests are measuring empathy—they're measuring your dog's ability to focus on a treat. Beyond that, the tests seem like they'll yield a positive warm-fuzzy result even if the dog is only getting the right answer randomly because he has a 50-50 chance. And many of the results were determined by Alvin's ability to focus for the 30 seconds or so required rather than his cognitive abilities regarding the task at hand. But it was fun to watch his brain work and have a new way to interact with him.

Sebastian Tiberius Stewart

Age: 17
Breed: Samoyed (Sammie) mix
dvm360 staffer: Portia Stewart, Team Channel Director

SOCIALITE

Sebastian has nerve damage that gives him a stiff gait and makes it difficult for him to enjoy walks, stairs and energetic physical activity. What Dognition taught me about my dog is … that I became severely invested in my dog's results and what they would tell me. What did Dognition give me? I'd hazard to say he was enriched by the games and attention. And while his waistline didn't appreciate the treats, he performed some pretty cool mental gymnastics to earn them. (Note: It's easily a 2-½ hour process, and my older pooch needed breaks of a day or so between some activities.) What did I learn? Some fun activities Sebastian can enjoy that don't require physical activity.

dvm360 Find it all here.

Eyes on enrichment

This fun package is just a sneak peek of what's to come in our pet enrichment Leadership Challenge, coming in November. See it all at dvm360.com/petenrichment.

The profiles

ACE

An accomplished problem solver with great communication skills, an Ace has everything that makes dogs special, and a little more besides. Aces are the dogs with it all—pros at reading and understanding social information, and just as good at solving problems on their own. The only downside to having a dog as gifted as an Ace is that sometimes they may be too smart for their own good.

CHARMER

Charmers have exceptional social skills, meaning they can read human body language like a book. Seeing as these social skills are paired with just the right amount of independent problem solving skills, it's no surprise that Charmers can be quite mischievous! Indeed, this combination of cognitive skills sets means that many Charmers are not above using their owner's social information to get their own way.

SOCIALITE

Social graces are the keys to the Socialite's success. Although they rely less on independent problem solving skills than other dogs, don't jump to any conclusions about the Socalite's intelligence. They rely on a very specific strategy—using the humans in their pack to get what they want.

EXPERT

Dogs with the Expert profile have all of the cognitive tools they need to solve most of their daily problems on their own. They have a relatively strong memory along with the ability to solve many types of problems they've never seen before. Due to these cognitive abilities, Experts tend to be less reliant on humans than other dogs.

RENAISSANCE DOG

The Renaissance Dog is good at a little bit of everything. Rather than being completely dependent on individual cognitive strategies, Renaissance Dogs show impressive flexibility across all 5 cognitive dimensions. While others focus on the proverbial tree, the Renaissance Dog can see the entire forest.

PROTODOG

Thousands of years ago, when our human and canine ancestors first began their extraordinary relationship, there was something about certain wolves that distinguished them from the rest of the pack. Rather than a traditional wolf form of intelligence, these pioneer dogs, or protodogs, had budding social skills enabling them to approach and interact with humans in a whole new way. Protodogs are akin to these first dogs; flexible when it comes to solving problems on their own, but with sufficient social acumen to turn to humans for help when needed.

EINSTEIN

Einsteins are the rocket scientists of the dog world. While many dogs struggle when it comes to cause and effect, Einsteins have an excellent comprehension of the physical world. They also show one of the key qualities of genius: the ability to make inferences. It is only by making inferences that we can flexibly solve a problem we have never encountered before. While, like many brilliant minds, Einsteins occasionally struggle with social situations, their avid grasp of the physical world more than compensates.

MAVERICK

A cheeky wolfishness and a strong independent streak are what make a Maverick so successful. With cognitive characteristics closer to their wolf ancestors than most other dogs, Mavericks are relatively unique in the dog world. These dogs definitely prefer to tackle problems independently, and when it comes to understanding the physical world, hold their own compared to other dogs. In the end, if you can't solve it on your own, is it really worth solving?

STARGAZER

Stargazers, usually considered to be aloof by their owners, have their own often misunderstood type of genius. Generally their cognition is geared towards self-reliant and present-minded strategies, rather than being overly concerned with past events and human collaboration. They have a wild, wolf-like side which can be a great compliment to the lifestyle of a rugged individual. Due to this, Stargazers may have to work a little harder than other dogs in social situations, and their owners may have to work a little harder than other owners in training.

PHOTOS BY GREG KINDRED

Ike

Age: 6 years
Breed: Border collie/pit bull
dvm360 staffer: Adrienne Wagner, Content Marketing Director
Ike got test anxiety, so we stopped the testing process when he began to seem anxious. Note: He's not the only dog on our staff to say "no way" to the testing, so warn your clients that not all dogs find the fun and games so fun.

Zoey

Age: 3 years
Breed: Australian Shepherd/Blue Heeler mix
dvm360 staffer: Jennifer Vossman, RVT, CMP, Clinical Program Specialist
Zoey's Dognition profile revealed that she's an Expert. Dognition defines the Expert as one who is "a specialist in independent problem solving, which requires a good memory and the ability to solve problems she's never seen before." In the five categories tested, Zoey scored high on empathy, in the middle on communication and cunning, topped the chart on memory and leaned towards the logical side of reasoning. We initially guessed Zoey as an Einstein because of her ability to solve problems by making inferences and her struggles in social situations. About the Dognition testing itself: They claim it isn't a test, just games to play with your dog. I however felt that it was a test of patience on all parties. Zoey got bored playing the games and became very vocal when being timed or held back—which tested our patience in dealing with her impatience. I can't blame her—it's like taking a kid to a candy store and telling them they get candy only after being completely quiet for five minutes.

EXPERT

Agnes

Age: 1 year
Breed: Mama is a golden retriever, Papa is a mystery
dvm360 staffer: Sarah Mouton Dowdy, Associate Content Specialist
Agnes is a Renaissance Dog. The results say: "Overall Agnes showed accomplished social skills and solid independent problem solving. Rather than being a specialist with a single expertise, Agnes is a generalist." I say: It's hard to argue with results that say your dog is "good at a little bit of everything"—not exactly a hardline designation. Still, I'm a bit skeptical. For example, in the empathy section, one of the games involved holding a treat under my eye to see how long Agnes would maintain eye contact. Results say: "Judging by the extraordinary length of time Agnes spent gazing soulfully into your eyes, you probably often find her staring at you for no reason… Agnes may not want or need anything [when she stares at you]—she may just be hugging you with her eyes." I say: Agnes was staring soulfully at the treat, not my eyes, and would like treats to be the endpoint of all gazing. She does her most soulful gazing when I'm attempting to eat dinner. See the complete results and reviews at **dvm360.com/dognition.**

RENAISSANCE DOG

> Continued from the cover

What gives? Where are all the credentialed technicians?

According to the Arizona State Veterinary Medical Examining Board, there are a little more than 1,000 credentialed technicians in Arizona. That sounds like a lot until you consider that there are about 1,000 licensed veterinary premises in the state. Sixty-six certified veterinary technician licenses were issued in Arizona at the end of June 2017, which is down from the 79 that were issued at the same time last year.

Credentialed technician vs. veterinary assistant

To get a handle on this, let's first talk about what a credentialed technician is. I live in Arizona, and according to the Arizona State Medical Examining Board Arizona Revised Statutes (commonly referred to as the "veterinary practice act"), a certified veterinary technician is either a graduate of a two-year veterinary technology program who has passed a veterinary technician examination or a person who was certified on or before December 31, 2010. A veterinary assistant is an individual who provides care under the direct or indirect supervision of a veterinarian or certified veterinary technician.

So, it's fair to say that in Arizona you are either a certified veterinary technician or a veterinary assistant. There is no such thing as a noncredentialed veterinary technician. But every hospital where I've worked in my more than 12 years in practice uses the term "veterinary technician" for both credentialed and noncredentialed. Huh?

Kelly Smith, hospital manager at Arrowhead Ranch Animal Hospital in Glendale, Arizona, says, "When we talk about technicians, we don't differentiate between any of them. Even in training, they are all basically required to learn the same thing. There is no 'get one of the assistants or techs to do that.' We're working to get them all up to the same level, and we don't differentiate between them."

That seems to be a common theme among veterinary clinics. Tammy Sweet (name has been changed for anonymity), a CVT in Phoenix, says, "I worked hard to earn my title, and it bothers me to see someone who just walked in off the street getting the same title with the same pay. Part of the reason I'm thinking about leaving my clinic is a lack of respect and recognition for the credentialed techs here."

The National Association for Veterinary Technicians in America has introduced a national credential initiative to create a standard credentialing requirement, title, and scope of practice for technicians in all 50 states (in addition to changing the term "veterinary technician" to "veterinary nurse"). The goal is to help pet owners understand what patient-care-credentialed technicians provide. Sweet says of this initiative, "It's a good place to start."

Do credentials = more professional respect?

Desiree Jordan, DVM, clinical director and attending veterinarian for Pima Medical Institute's veterinary assistant and veterinary technician programs, says she feels more comfortable working with credentialed technicians than with veterinary assistants because she's "able to trust them to make decisions and judgment calls, to ask me the right questions in order for me to make those calls, or to notice things that an assistant might not." When asked how other veterinarians at her previous hospital felt, she stated that they also preferred working with technicians who had attended school.

Stephanie Huss, program director for the veterinary assistant and veterinary technician programs at Pima Medical Institute, says she's seen a huge shift in her students' ideas about credentialing. She says that practices are starting to realize the value of having credentialed technicians, "especially these young, new vets," and says area hospitals have been calling the school looking for educated technicians.

"I feel like I have an opportunity to impact the industry with our graduates and raise the bar on what veterinarians think we can do," Huss says.

Huss is leading the way for this program, as her campus is new and has only had one small class of graduates so far. However, all of those graduates secured jobs in the field and half of them will receive raises immediately upon becoming credentialed. On the topic of hospitals hiring more credentialed technicians, Huss says, "If we have more people banding together saying the same thing, they [hospitals] are not going to have a choice."

But not all credentialed technicians are as hopeful. One of my classmates from veterinary technician school who requested anonymity says, "I have worked in the same practice for almost 11 years, despite poor management and less-than-desirable coworkers. But I'm thinking of a career change. I'm burning out, losing my compassion for the animals and my drive to help. I love that I'm good at my job. I feel I'm great at it, and I still enjoy the variety and skills involved. I'm nervous to go from something I'm good at and have some seniority in to something brand new, but I'm starting to think it might be worth it."

Kayla Goldberg, CVT, of Phoenix Dog Cat Bird Hospital, says, "Some techs wonder, why become credentialed when they're only going to make a tiny

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1. Kirkby Shaw, K., Rausch-Derra, L., and Rhodes, L. 2016. "Grapiprant: an EP4 prostaglandin receptor antagonist and novel therapy for pain and inflammation." Vet. Med. Sci. 2: 3-9.
2. Rausch-Derra, L., Huebner, M., and Rhodes, L. 2015. "Evaluation of the safety of long-term, daily oral administration of grapiprant, a novel drug for treatment of osteoarthritis pain and inflammation, in healthy dogs." Am. J. Vet. Res. 76.10: 853-859.

ARATANA THERAPEUTICS

Elanco

bit more than they were before? Or they feel like someone else can do a nine-month vet assisting program and be called the same thing as someone who has a degree and has passed the boards."

Josh Esquivel, medical career specialist at the Pima Medical Institute, says only about 40 percent of veterinary assistant students move into the veterinary technician program. "They find out the pay isn't much different, if at all, for a vet tech versus a vet assistant and they see no incentive to take on the extra school debt."

Rachel Schultz, CVT, scheduling coordinator at the College of Veterinary Medicine Companion Animal Clinic at Midwestern University in Glendale, Arizona, says, "I could have done everything I have done in all my jobs except for teaching and spared myself the $30,000 in student loans. We have a long way to go before CVTs will get the recognition with the pay. Even at Midwestern, we have techs that are not CVTs and they can still do everything a credentialed tech can do."

Leaving the profession

Diana Brown graduated from a veterinary technician school and became credentialed in 2006. Three and a half years later she left the field and let her license expire.

"After daycare, driving expenses, lunches, et cetera, I was making $35 a week," she says, "and I was not able to attend my kids' events and was always worrying about arranging childcare around my weird hours. I loved my job, but it wasn't worth the stress it was putting on my family. And there were no other jobs that paid better or had better hours."

Although Brown had a two-year degree, national and state certification, a few years of experience, and was helping the clinic with marketing, she was only making $11 hour. Unsurprisingly, when I asked a group of veterinary professionals why they or their technicians left their jobs, low pay was the most frequent reason given.

Stefanie Perry, CVT, works at the Animal Health Institute Companion Animal Clinic at Midwestern University. She has 13 years of experience but almost left the veterinary field. She says, "Loving medicine and animals makes it [veterinary medicine] a no-brainer for me. But I couldn't find a private practice that offered the benefits I get at Midwestern." Perry's husband is chronically ill, so health insurance is a major deciding factor in where Perry works. If it weren't for the benefits she receives at Midwestern, "I might have had to leave the industry to find better insurance just to stay above water in medical bills."

"I could have done everything I have done in all my jobs except for teaching and spared myself the $30,000 in student loans."
—Rachel Schultz, CVT

Bridget Heilsberg, DVM, owner of Crown 3 Equine Veterinary Services in Whitesboro, Texas, says "not being able to pay them what they're worth" keeps her from hiring credentialed technicians. She says, "I have one credentialed tech that is waiting for me to be able to hire her, but she needs full time with benefits and I can't do that."

In addition to low wages, credentialed technicians often leave the field because they feel there is no opportunity to expand their knowledge base and skill set. Karen Marcus, CVT, instructor at Ridgewater College's Veterinary Technology Program in central Minnesota, solved this problem by becoming an instructor. She says, "I worked 20 years in emergency but love teaching. I like the challenge of learning new things."

Working in an academic environment has given Perry the opportunity to learn new skills. She says, "Working in a teaching hospital affords me the opportunity to get my VTS in dentistry. It has shaped my career path. I'm pretty sure I'm a lifer now."

Boosting our profile—and earnings

Esquivel says most of the people he speaks with about a career in veterinary technology think the job entails only about half of what a technician actually does. "They don't know about doing labs, taking x-rays or assisting in surgery," he says.

Esquivel points out that he has never personally witnessed a technician performing medical duties. When he takes his dogs to the veterinarian, team members take the dogs out of the room for diagnostic testing. Then the veterinarian comes in and gives the diagnosis. If owners like Esquivel don't see what a technician does, how can they know how valuable a technician is? That feeds into an incomplete or incorrect perception when people consider a career in veterinary technology.

Veterinarians can help educate the public on their techs' expertise by using phrases such as "Carrie is going to scrub in on Fluffy's surgery today." Veterinarians and credentialed technicians spreading awareness of the vast skills that a technician has may help educate the public.

In my experience, most veterinarians would like to have credentialed technicians who can calculate drug doses, induce anesthesia and intubate patients, but they don't want to pay for it or feel they can't afford it. But several analyses have found that credentialed technicians will pay for themselves if allowed to work to their maximum potential. Allowing credentialed technicians to work to their fullest ability will not only increase the technicians' level of satisfaction in their jobs, it will free up veterinarians to do what only they are licensed to do: diagnose conditions, prescribe drugs and perform surgery.

Julie Carlson, CVT, is the winner of the 2015 Hero Veterinary Technician Award from the American Humane Association and is the Founder of Vets for Vets' Pets.

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OVERVIEW

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ULTRA™ Duramune® DAP	M	M	M									
ULTRA™ Duramune® DAP + 4L	M	M	M			I	I	I	I			
ULTRA™ Duramune® DAP + C	M	M	M		I							
ULTRA™ Duramune® DAP + C4L	M	M	M		I	I	I	I	I			
ULTRA™ Duramune® 4L						I	I	I	I			
ULTRA™ Duramune Lyme®										I		
Bronchi-Shield® ORAL											M	
Bronchi-Shield® III		M		M							M	
Duramune® CvK					I							
Duramune® Max 5	M	M	M	M								
Duramune® Max 5-CvK	M	M	M	M	I							
Duramune® Max 5/4L	M	M	M	M		I	I	I	I			
Duramune® Max 5-CvK/4L	M	M	M	M	I	I	I	I	I			
Duramune® Max Pv			M									
Duramune® Max PC			M		I							
Duramune® LeptoVax® 4						I	I	I	I			
Duramune Lyme®										I		
Duramune Lyme® + Max 5-CvK/4L	M	M	M	M	I	I	I	I	I	I		
Duramune Lyme® + Max 5/4L	M	M	M	M		I	I	I	I	I		
Duramune Lyme® + LeptoVax® 4						I	I	I	I	I		
Rabvac® 1												I
Rabvac® 3												I

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	herpesvirus (FVR)	calicivirus (NOVEL)	calicivirus (TRADITIONAL)	panleukopenia	*Chlamydia felis*	feline leukemia virus	rabies
ULTRA™ Fel-O-Vax® FVRCP	I	I	I	I			
ULTRA™ Fel-O-Vax® FVRCP + FeLV	I	I	I	I		I	
ULTRA™ Fel-O-Vax® FeLV						I	
ULTRA™ Fel-O-Vax® Dual FCV		I	I				
ULTRA™ Hybrid™ FVRCP (non-adjuvanted)	M	I	I	M			
Fel-O-Vax® IV + CaliciVax®	I	I	I	I	I		
Fel-O-Vax Lv-K®						I	
Fel-O-Vax Lv-K® III + CaliciVax®	I	I	I	I		I	
Fel-O-Vax Lv-K® IV + CaliciVax®	I	I	I	I	I	I	
Fel-O-Vax® PCT + CaliciVax®	I	I	I	I			
Fel-O-Guard® Plus 3 + Lv-K	M		M	M		I	
Fel-O-Guard® Plus 4 + Lv-K	M		M	M	I	I	
Fel-O-Guard® Plus 3	M		M	M			
Fel-O-Guard® Plus 4	M		M	M	I		
UltraNasal™ FVRCP	M		M	M			
UltraNasal™ FVRC	M		M				
Rabvac® 1							I
Rabvac® 3							I

M - modified-live
I - inactivated/killed

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[1]Levy S. 2002. "Use of 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., 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." The Journal of Applied Research in Veterinary Medicine. 1;8(3):123

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> Continued from the cover

began looking for ways to help. She arrived at the George R. Brown Convention Center in downtown Houston, where the impact really began to sink in.

On the first night, as waterlogged families arrived with pets in tow, some of them were turned away. Unwilling to leave their pets outside alone, families remained in the parking lot as the rain continued. The Pets Evacuation and Transportation Standards (PETS) act, passed in 2005 after Hurricane Katrina, mandates that states provide emergency shelter for evacuated pets, but in the confusion of a large-scale disaster the plans aren't always immediately implemented. City officials quickly reversed course, and the next day the convention center designated one large entire area for pets.

It filled quickly. "We had 9,000 people show up overnight," Dr. Eick says, marveling at the cavernous room behind her.

During natural disasters, overburdened animal control officials often rely on private organizations to help with rescue and shelter services. At the convention center, Dr. Eick and six other veterinary volunteers working in shifts assisted Houston's municipal shelter organization BARC, Friends for Life, and Austin Pets Alive with the daunting job of triaging hundreds of pets, some suffering stress-related gastrointestinal (GI) distress, many with severe injuries.

"The hardest case was a dog fight case that happened on Friday just as the rains were starting, so they weren't able to get vet care before being evacuated out on Sunday," says Dr. Eick. "We saw him on Monday and he was already so sick with a body temp of 95 degrees. The wounds were severely necrotic, and I assume he had penetrating wounds into his abdomen. Sadly, even after aggressive IV fluids and antibiotics and supportive care, he did not make it. My heart just broke for these people who lost their home and now their pet."

To streamline the volunteer process, Dr. Eick created the website harveyvolunteervets.com for veterinarians, technicians and assistants who wanted to offer their time and expertise. "I am asking that people who do sign up check the site regularly as the shifts may change if the shelters are consolidated and as we get calls for help from local animal shelters," Dr. Eick says. "The shifts are just the bare minimum! If a shift looks full we will not turn anyone away! They should email, call or text me to let me know that they would like to work."

A pet displaced by Hurricane Harvey taking shelter at the George R. Brown Convention Center in downtown Houston. *(Photo courtesy of Dr. Katie Eick.)*

Another pet at the George R. Brown Convention Center takes a break on its owner's cot. *(Photo courtesy of Dr. Eick.)*

In San Diego, Sarah LaMere, DVM, PhD, watched the news with a growing sense of sadness and fear. As a native Texan, she has family members in the Houston area, and so does her husband. "My parents grew up there. My roots are there. I think it's impossible for me to go about my daily life without doing something tangible to help," she says. Not long after the storm hit, Texas began granting emergency licenses for out-of-state veterinary professionals to provide immediate and relief help while the state assessed the long-term consequences. LaMere applied for and received an emergency license within 24 hours. She joined Dr. Eick in Houston on September 1.

While the veterinary community raced to provide assistance to storm victims, many veterinarians faced the double whammy of helping while themselves suffering loss.

Miles from the downtown convention center, Christie Cornelius, DVM, was feeding her dogs in the Air BnB she had been staying in since Aug. 28. On Sunday, Aug. 27, she worriedly

A pet and its owner sheltering in the convention center in downtown Houston. *(Photo courtesy of Dr. Eick.)*

A view of Dr. Mancill's property. A week after the storm, she still wasn't sure how badly her property had been damaged. *(Photo courtesy of Dr. Mancill.)*

watched as a creek near her home started to overflow its banks. The next day, as the inches of water turned to feet, she and her partner had to evacuate their four dogs and four cats with whatever they could gather in 15 minutes. "We drove back to our place for the first time a couple days ago," she told *dvm360* soon after the storm. "There were a couple feet of standing water in the house." Her house was uninhabitable, but she didn't have time to process the next steps.

Instead, she spent most of her time managing the staff at Last Wishes, her mobile hospice and end-of-life care veterinary practice. With some of Houston's largest emergency practices such as Gulf Coast Veterinary Specialists badly damaged, the wait at the few remaining ER practices was extremely long. "Those ER clinicians are working two to three days in a row" without a break, Dr. Cornelius says. A long list of pets in need of euthanasia couldn't access it. So her practice went to them.

Medical supplies, especially GI meds, fluids and pain meds, were quickly in short supply. "Veterinarians as a whole—this is what we do," says Dr. Cornelius. "We burn through our own supplies and resources." Even after many of the roads had reopened, UPS waited to resume deliveries over security concerns. Until that ended, hospitals and distribution centers relied on private individuals and companies to bring in supplies.

The need to do what she could kept Dr. Cornelius from thinking too much about what the future held for her. "You're in survival mode," she says. "All you do is the best you can, and you rest when you can. Sometimes you just have to stop what you're doing and go cry." She notes how large animal veterinary practitioners were so overwhelmed they didn't have a chance to stop and give updates. "They were running themelves ragged trying to get to horses who needed a rescue," she says.

Outside of Houston in Cleveland, Texas, equine veterinarian Semira Mancill, MS, DVM, DACT, wasn't sure how badly her property had been damaged. "Thankfully my family and I are safe," she said after the storm, but "the floodwaters have not receded enough to get a full damage assessment. We have many colleagues who that have lost everything, both at home and at their hospitals. It's going to be a marathon of putting the pieces back together."

Having weathered two previous hurricanes, Dr. Mancill evacuated 12 hours before the rains arrived. "I'll never regret that decision," she says. "I will always be shocked with the devastation this storm has caused to the Houston and Southeast Texas communities." For her clients, she says, the greatest needs were animal feed, medicine and medical supplies. She suggests that people organize donations through the AVMA, the Texas Veterinary Medical Association, the Texas Equine Veterinary Association, and the American Association of Equine Practitioners.

Despite an end to the rain, the struggle in Texas is just beginning. Insurance adjusters and emergency housing and grant disbursement take time. "What you see on TV—that's just scratching the surface," Dr. Cornelius says. "In order to understand what's going on, you have to be there. I've had people all over the country asking what can I do to help, but we don't even know yet."

As the community has leaned on its veterinarians in time of crisis, our colleagues in Texas will be leaning on us in the weeks and months to come. "We don't want this to be a blip on the news," says Dr. Mancill. "This will be a long run of picking up the pieces and rebuilding. Don't forget about the people here who have lost so much and will need help for months to come."

Dr. Jessica Vogelsang is a certified veterinary journalist, author of the memoir All Dogs Go to Kevin*, and creator of the blog Pawcurious.com.*

Help for Harvey

Though far from exhaustive, here's a list of industry and nonprofit organizations that donated funds and resources to those affected by Hurricane Harvey:

- **AVMA:** $100,000 in grants administered through the American Veterinary Medical Foundation.
- **Henry Schein:** $500,000 in cash and healthcare products to relief organizations working in animal health, human medicine and human dentistry relief efforts.
- **Maddie's Fund:** $1 million in donations to animal welfare organizations.
- **Petplan:** $55,000 in donations to Best Friends Animal Society, North Shore Animal League America, and The Humane Society of the United States in cooperation with Cleveland Browns defensive tackle and Petplan policyholder Danny Shelton.
- **Purina:** $25,000 donation to Greater Good, along with food and litter for area shelters.

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One more *fright*, one less heartbeat

This cardiologist wants to prove that the intense effects of the fight-or-flight "sympathetic storm" in pets from scary veterinary visits can wear out their hearts before their time.

By John Lofflin

The feelings are familiar to anyone who has ever been caught in the crosshairs of danger: Palms bleed sweat. Muscles twitch. Heart rate soars. If the danger is real, this fight-or-flight reaction may save your life.

If this is just another stress-induced false alarm, however, the experience known as the "sympathetic storm" may actually be stealing valuable heartbeats from your life.

The human animal isn't the only animal hardwired for fight or flight. What happens when those storm clouds come rolling toward the Chihuahua on your exam table?

That's what Professor Emeritus Robert Hamlin, DVM, PhD, DACVIM, wants to know. As one of the world's premier cardiology researchers, Dr. Hamlin has spent his career studying the heartbeats of animals. He arrived at The Ohio State University in 1958, and he's still there today, teaching, practicing in the clinic and researching. In what he calls his last research phase, fight-or-flight heartbeats have become his compelling interest.

A finite number of heartbeats

Start with this widely accepted idea, he says: Each of us, including our pets and clients, are endowed at birth with a certain finite number of heartbeats. Any time stress makes our hearts charge hard, it's stealing from that number. Anything that unnecessarily triggers

the sympathetic storm—a veterinarian approaching a dog with a rectal thermometer, for instance—contributes, he thinks, to both morbidity and mortality.

If the research supports this theorem, the implications for veterinary practice could be revolutionary. This is Dr. Hamlin's research mission.

"If we can show through these studies that stress leads to both morbidity and mortality, then from a scientific perspective, the profession will know the importance of reducing stress in a pet's life, or, to whatever extent is possible, in the life of a service dog," Dr. Hamlin says. "Of course, we sense it now, and we have a good deal of evidence. But knowing scientifically will bolster the notion of removing as much stress as possible from situations where stress is unavoidable, like the clinic or hospital visit."

The damage of a sympathetic storm

Dr. Hamlin thinks the evidence that stress during a sympathetic storm is injurious to the cardiovascular system is clear:

"One of the most serious situations for the heart is when it suffers an oxygen debt, when it consumes more oxygen than is delivered to it by the coronary circulation. This creates an energetic imbalance that may result in reduced force of contraction. So, the heart pumps less blood, stiffens and does not fill well, which creates a disturbance in rhythm that may result in sudden death.

"When the heart rate speeds, then it consumes more oxygen; it spends less time relaxed. And because most oxygen is delivered when the heart is relaxed, the increase in heart rate aggravates energetic imbalance by increasing oxygen demands and decreasing oxygen delivery—a double whammy! Heart rate is accelerated during a sympathetic storm, manifested by elevated circulating adrenalin and by increased stimulation of cardiac acceleratory nerves. Not only does this result in energetic imbalance, but the storm is also deleterious because it increases oxygen demand by increasing contractility and hindrance to ejection—a quadruple whammy!"

If stress for both the human animal and the animals they love is an enemy of the healthy heart, it makes sense, Dr. Hamlin says, to eliminate as much unnecessary stress as possible.

"When it comes on in a sustained manner, I don't think it does anybody any good," he says. "If we love our animals, why would we put them in a situation that produces stress and increases morbidity and mortality? Can I quantify it yet? I cannot. This question can only be answered by a long-term epidemiological study, which has not yet been commissioned."

When the storm is in your practice

Stressful clinic visits create a second serious problem, he contends. Think of it as white-coat syndrome for animals. Just as physicians have learned to factor exam room stress into their human data, veterinarians who don't may be making unrealistic diagnoses from exam table data.

"You're going to get an elevated heart rate that's going to affect the animal and give you a wrong impression about the state of the animal," he says.

Stress in the clinic does two things, he argues: "It injures the animal, and it gives you a false impression of what the physiological state is."

Dr. Hamlin's current study, which is being conducted by a former student of his in Brazil, seeks to measure the heart rates of animals at home when they aren't stressed, in the hospital cage and on the exam table.

"So far," he says, "we've seen that when they're on the exam table, their heart rates are significantly higher. So, if our mission is to improve the duration and quality of life of our patients, I think we've got to modify our veterinary hospitals and modify our approach to practice."

That means, he says, doing everything possible to calm the sympathetic storm before its dramatic physiological effects are unleashed.

"The only time a sympathetic storm is good for you," Dr. Hamlin says, "is when you need to to fight or flee."

John Lofflin is a journalism professor and freelance writer based in Parkville, Missouri.

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Dr. Robert Miller: Get defensive with equine veterinary patients

When it comes to working with horses, every offensive move you commit from a horse's point of view needs a preplanned defense on your part. *By Mindy Valcarcel, Medicine Channel Director*

At the CVC in Kansas City—now Fetch—renowned equine veterinarian Robert M. Miller, DVM, said a recent survey in the U.K. reported that the equine profession is the most dangerous of civilian professions. You can be severely injured or even killed if you make a misstep. Dr. Miller has definitely taken very careful steps throughout his career as he has recently entered his ninth decade and is still going strong.

During his presentation on safe horse handling, Dr. Miller recounted the sad tales of veterinarians and horse owners who meant to do the right thing yet faced tragic ends. Dr. Miller has lost two colleagues because of working with horses—one was floating a horse's teeth and was struck in the chest, which hemorrhaged her pericardial sac. In fact, Dr. Miller himself was once hospitalized after a 3-month-old colt ran into him full speed when he was trying to rope the colt and it got scared. "I always wondered what it would feel like to be hit by a 300-lb football lineman—I found out," he said. This incident resulted in a ruptured cruciate ligament.

Several years ago Dr. Miller was approached about making a video on safer horsemanship, which he prefers to call "defensive horsemanship"—just like when you're driving a car, always prepare for the worst to happen. After seeing some equine practitioners and owners handle horses in what he considered a potentially dangerous manner, he decided it was a good idea.

Start with the right approach

Dr. Miller says the safest place to stand by a horse is the shoulder; he always starts there. "You never know when they're going to misinterpret who you are or what your intentions are," he says. "Everything a veterinarian does to a horse either frightens them or hurts them." This results in their flight or fight mechanism kicking in, and most horses go right to flight.

He tries to find three points of contact when working on any area of a horse, since a triangle is a strong physical defense. For example, you can brace your body against the side of the horse, slide your foot out as a second base, and place your nondominant hand firmly near the area in which you are working.

A lesson in temperature taking

One example Dr. Miller discussed was how he takes a horse's temperature, which can be a sensitive issue for our equine friends to be sure. Dr. Miller says to stand to the side of the horse and lock your hip against the horse's stifle. Then you can pick up the tail, and he recommends desensitizing the anus by lightly touching around the area so they know what you're going to do. Finally, place the thermometer and don't push it but rotate it, which makes the sphincter automatically open and lets the thermometer go right on in.

At this point, since you are to the side of the horse, if the horse kicks back, you're not on the receiving end. And if it kicks forward, as Dr. Miller says you'll remember from vet school, the hock and stifle can't operate independently—they flex together. If the horse does kick forward, because you're by the stifle it may push you forward, but you're safe.

The serendipity of loose boots

Dr. Miller's dad once gave him a pair of Western boots that were too big for him. They were hard to walk in, but he didn't want to hurt his dad's feelings so decided he could ride horses with them. This turned out to be a fortuitous turn of events.

At one point when Dr. Miller was roping calves with these overly large boots on, he was dismounting after he thought he had successfully roped a calf, and his foot caught in the stirrup. The calf bolted off, upsetting the horse. The next thing Dr. Miller knew he was down on the ground going around the arena at 40 mph.

Luckily, the ground was soft and his boot quickly fell off, saving him from prolonged dragging. "I learned my lesson. Don't wear tight boots," says Dr. Miller. In fact, he recommends getting boots that are one size too large for riding. He has heard from at least two people that this bit of advice saved their lives.

Parting advice

What if a client insists that their horse is gentle? "Never assume a horse is safe," says Dr. Miller. A friend of Dr. Miller's who is a human emergency doctor told him most injuries he had seen caused by horses were from horses considered gentle. In addition, most injuries occurred when people were on the ground, not when they were riding.

So don't be afraid to defend your defensiveness. "If somebody thinks you're being overly cautious, that's fine. At least you'll be alive to contradict them," says Dr. Miller.

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Don't let an internet comment like this be your legacy as a veterinary employer.

Grumpy ex-employees in the age of the internet

A nondisparagement clause might be able to keep that toxic team member you fired from badmouthing you and your veterinary practice all over social media—but only if it's legally enforceable.

When we were kids and faced with a bully, we used the phrase, "Sticks and stones may break my bones, but words will never hurt me." But when we were kids, none of us owned veterinary clinics—and there was no Facebook.

In life before the internet, defamatory words uttered by former employees rarely did us or our practices much harm. Today, however, social media and its underlying technology are developing at a rate far greater than the government's ability to police it as slander or libel. So hurtful and damaging commentary, regardless of its truth or accuracy, is published with relative impunity (and often anonymity).

For example, when I bought my first clinic, an unhappy employee who felt either underpaid or unappreciated—or both—would quit and then tell her friends, her hairstylist and maybe a bartender or two just how awful I was to work for. Today, that same employee has a virtual one-person TV station from which to broadcast negative and damaging commentary online. Then the veterinary practice is faced with a tough decision—to engage with the employee in a time-consuming war of back-and-forth posts or to leave the disparaging comments "out there" interminably available for viewing by any potential new client (or new hire).

For veterinarians, both practice owners and associates, the economic damage caused by such negative comments from a former employee

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can be dramatic. It costs both time and money to cultivate new workers and replace clients when social media activity results in reputation damage. A substantial reduction in gross clinic revenue can result. And as revenue drops, not only does the practice owner get hurt, but jobs (including DVM jobs) can cease to exist.

And frequently, the most serious financial damage is suffered by the associates. Doctors paid on production are hit particularly hard when business drops off due to internet-based damage to their clinic's reputation.

Contract clauses keep associates quiet

How have employers kept former employees from spreading derogatory comments in the past? In ancient times (when I was a kid), clinic employees kept their post-employment opinions to themselves out of something called "professional courtesy." Exiting workers didn't want to hurt former friends and coworkers or impugn the reputation of the clinic's doctors.

Then, in the more recent past, workers were tight-lipped about their prior employers because they feared a negative "recommendation" when they went about searching for a new veterinary clinic position elsewhere. That disincentive effectively collapsed when, due to fear of being sued, most former employers quit providing any opinions at all about a former employee's motivation or skill.

Today, prevention of post-employment disparaging speech is going down two very different roads. While numerous veterinary practices (especially corporate-run practices) include "nondisparagement clauses" in their veterinary associate contracts, very few hospitals do anything to prevent former nonveterinarian employees from publishing defamatory language to the public about a former workplace.

Associates have become accustomed to seeing this language in their proposed employment agreements, along with the usual noncompete and nonsolicitation clauses and other prohibitions. How to avoid trash talk by a former non-DVM employee is much less clear.

So what do I do about the rest of the team?

Ordinarily, veterinary clinics don't have formal contracts with non-DVM staff members, and any published behavior guidelines are usually confined to the employee handbook.

While employee handbooks have their place, they aren't a substitute for a written employment contract, the terms of which are unique and specifically consented to through the signature of both employer and employee. Yes, employees are often required to sign their employee manuals, but the exercise is more to indicate that the employee has "acknowledged receipt" of the document than any agreement to accept personal liability for behaving contrary to the manual's terms. So the employee handbook sets forth what a rank-and-file employee can be reprimanded or fired for doing, but it usually doesn't provide a legal cause of action by the employer against the employee when and if a prohibited behavior by a worker occurs.

The power (and limits) of nondisparagement clauses

Whether nondisparagement clauses will become standard is up in the air, with different judges expressing a wide variety of opinions regarding the appropriateness and enforceability of this sort of written prohibition on post-employment speech.

We know two things for certain. First, the legal community is traditionally hesitant to burden relatively low-paid employees with pre-employment hurdles. When a job seeker is required to sign an agreement limiting his or her speech prior to beginning work, legal authorities are likely to look carefully at the requirement. If the business can't demonstrate a strong need to protect a legitimate business interest in obligating new hires to sign nondisparagement agreements, it's likely not to be enforced.

Second, various state and federal statutes already protect the speech of both current and former employees. Those laws must be taken into careful consideration in the drafting of a lay worker nondisparagement agreement.

How your nondisparagement agreement might pass legal muster

Before jumping in and crafting your own receptionist or office manager nondisparagement document, stop to consider these tips:

> Limit the prohibition. The more limited the prohibition, the more likely it is to be enforceable—say, limiting to electronic means. This leaves chats at the hair salon and complaining to friends alone while possibly offering protection against toxic Facebook groups.

> Keep the damages low. Establish a relatively low "liquidated damages" amount that a departing employee would pay if found by a court to have disparaged your business. If the figure is substantial to the employee but within the jurisdictional limits of your small claims court, it may offer a greater deterrent than if you were required to sue the employee on the agreement in a traditional trial court.

> Keep your house in order. If the employee signs the nondisparagement agreement then says on the internet that you throw your medical waste in the trash, there's not much chance of recovery against that employee—if the negative information is true.

> Remember that the law protects certain potentially disparaging language on the part of an employee. For example, statutes exist both at the federal and state levels to protect employee speech associated with: applications for workers' compensation coverage, certain labor law litigation, applications for unemployment benefits, retaliatory behavior on the part of an employer or former employer, and statutory and common-law "whistleblower" protections.

> Consult an attorney. A competent and knowledgeable lawyer can guide you through compliance with your state's specific laws as they apply to hourly and noncontract salaried employees.

Christopher J. Allen, DVM, JD, is president of the Associates in Veterinary Law PC, which provides legal and consulting services exclusively to veterinarians. He can be reached via e-mail at info@veterinarylaw.com.

Like a boss

Without Dr. Codger breathing down her neck, Dr. Greenskin is able to grow her experience and confidence. But can she convince her stubborn boss that they need to grow their veterinary team?

Over the last few weeks, Dr. Codger has been taking care of some chores that have been piling up at home and has scarcely been seen at the veterinary hospital outside of daylight hours (which is highly unusual). His absence has allowed the budding Dr. Greenskin to spread her veterinary wings and practice medicine in her own way, eliminating some of the fear brought on by the old doctor's constant scrutiny.

Dr. Greenskin has enjoyed so much autonomy, in fact, that the prospect of someday being her very own boss is starting to sound rather pleasant. She's been able to revel in some successful cases and take time to pat herself (and her team) on the back for the veterinary victories—no matter how small.

Take poor Mrs. Keepsemseparated, for example. She was flabbergasted when her intact female Chihuahua appeared to be whelping (again), but Greenskin was able to manually deliver a single large and very alive puppy! Mrs. K, who had been agonizing about what a cesarean section might cost, was impressed and relieved that she didn't have to euthanize her precious pooch. High-fives were given all around.

ILLUSTRATION BY RYAN OSTRANDER

The unfettered doctor also convinced a couple of her boss's longtime clients that they had other options for managing their pups' minor skin flareups besides the usual once-a-year "allergy shot" of triamcinolone. But not all of these attempts were successful. On more than one occasion she was heard to mutter, after a solid 45 minutes of attempted client education, "Screw it. Just give him the steroid shot."

It may be that this independence is helping Dr. Greenskin come into her own as the DVM-in-charge. While being completely on her own remains a terrifying proposition, her confidence is growing—and the team is mostly pleased. A few technicians have even managed not to text Dr. Codger a few times when Dr. Greenskin has made a surprising decision. (Not to worry, though. He still calls the front desk anytime several hours have passed without an update from the office.)

Dr. Greenskin's freedom has given her the space to notice a few issues during the past month—issues that take on a whole new significance when viewed through the lens of potential future owner. One glaring problem: understaffing. Being shorthanded is becoming more of the norm than an exception, and it's becoming harder for the young associate to shrug off these hectic days as just another bit of bad luck. One employee out sick is one thing, but one on maternity leave, one at home with a sick family member and another on vacation is making Greenskin feel like a technireceptionarian a little too often.

What's a prospective business acquirer to do? If Dr. Greenskin pushes hard for Dr. Codger to hire another technician, how will that affect the purchase price and profitability of the practice? Yet she knows that they need another RVT—and soon. She also understands that competent RVTs more than pay for themselves as far as the business is concerned.

With the problem identified, we come to the more challenging issue: How should Dr. Greenskin bring this up with Dr. Codger—a veterinarian who would rather ask his clients to scrub in for surgery than pay for a trained and qualified technician? Would trying to convince the old boss man to hire someone be a waste of energy—like running headlong into a brick wall? Would Dr. Greenskin be better off just waiting until she's in charge to make things run smoothly?

Here's something else Greenskin just can't shake: the anxiety-inducing question of how and why the old man became so stubborn! The business value of a hardworking RVT who would increase production and profitability and contribute to a positive team environment seems painfully clear. So where did all of that Codgeriness come from?

Dr. Jeremy Campfield works in emergency and critical care private practice in Southern California. He is also an avid kiteboarder.

Are you speaking pet owners' language?

You can brush up on slang, dialect, accents and weird vocabulary to reach pet owners in the exam room. But the best way to be understood in veterinary practice is always, first, to listen.

"Seek first to understand, then to be understood." — Steven Covey

Listening is one of the most important, most underused and most underrated interpersonal skills we possess. If we could learn to listen and to understand the perspectives of others—family, coworkers, customers and other stakeholders—we could improve interpersonal relationships, boost the quality of our life experiences and get better results in our lives.

"But I'm a good listener!" you say. Are you?

Listening isn't easy to master. Real listening requires genuine interest. It's not just being quiet while someone else talks; it requires valuing that person and what they think. Too often we're busy focusing on our planned response to what someone else is saying. We may hear their words, but do we really understand what they're trying to say?

In veterinary practice, differences in language, idiom and dialect as well as vocabulary can result in huge communication gaps that lead to misunderstanding, poor compliance and undesired results as well as poor client experiences and satisfaction. It's understandably challenging to communicate when two people speak a different language, but even when we think we speak the same language, do we *really?*

Some years ago I participated in a veterinary conference in Canada attended by leaders from associations scattered across the British Commonwealth. There were attendees from Great Britain, Scotland, Ireland and Wales as well as Australia and New Zealand. Here were a dozen veterinarians who shared a common profession but who, as George Bernard Shaw said, were "separated by a common language." I remember a cocktail party where I listened intently to a number of English-speaking people and asked myself, "What did he say?"

On a recent trip to the British Isles, I heard English spoken with Welsh, Gaelic and Scottish lilts as well as God knows how many dialects in England. These languages are the origins of the English spoken in America, but toss in a few regional accents and colloquialisms and it's hard to tell where English begins and ends. Now think about the United States, where words from every continent have found their way into conversational English, and it's a wonder we Yanks can communicate at all.

After 16 years living in Anguilla, I'm still learning words and phrases that find their way into conversations. If people are judged untrustworthy, they're **scamps**, and if someone's a really bad dude, he or she's a **wicked person**. An outspoken, obnoxious person is **hard**. Referring to someone as **disgusting** is about as insulting as it gets.

Older folks drink a locally picked herbal tea called **bush tea**, and romancing someone is called **talking**. Taking a cutting from a bush is **to catch**. To borrow a match or cigarette is **to catch a fire**. To hitchhike is **to catch a lift** so you can **carry me**.

My personal favorite is **go to come back**—when you leave a place but intend to be back—and when told you'll see someone again soon, they invariably reply, **"God spare life."**

In conversations with veterinary clients, finding the right words can be a challenge. Is it more proper to say **shot** or **injection**? Is it better to say **worms** or **parasites**? Is **feces** more appropriate than **poop**?

The point of all of this is to show that words don't always mean what we think they mean and certainly are not always understood as we intend. Learn to listen. People who are good at understanding tend to be good at reading emotional cues from nonverbal communication, body language and tone of voice. A blank look speaks volumes.

Focus on what people are saying. As Ernest Hemingway admonished us, "When people talk, listen completely. Most people never listen." And as Covey perhaps said it best, "Listen with the intent to understand, not the intent to reply."

Dr. Mike Paul is the former executive director of the Companion Animal Parasite Council and a former president of the American Animal Hospital Association. He is currently the principal of MAGPIE Veterinary Consulting. He lives in Anguilla, British West Indies.

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Big game, big protest, big consequences

While the First Amendment gives the freedom to protest, an at-will employment relationship means it's necessary to tread lightly.

Link Animal Clinic is a small, well-respected veterinary hospital in an upscale suburb. The staff of two veterinarians, three receptionists and five technicians is compassionate, devoted and skilled. The clinic is in a lease-held shopping center with a diverse assortment of tenants.

In addition to offering standard veterinary services, Link Animal Clinic's staff thinks it's important to have a positive footprint in the humane community. They support and assist the local shelters whenever they can.

A new tenant recently moved into the shopping center. It is part of a nationally franchised fast food chain. In addition to serving pretty good food, the chain's founder displays himself in both words and pictures as an accomplished big game hunter. This doesn't sit well with one of the animal clinic's head technicians.

She posts a sign in her car window asking shopping center customers not to patronize the restaurant, and she starts parking her car in the shopping center's common parking lot for all to see. In addition, she starts a protest march to alert shopping center customers of the chain restaurant owner's pride in killing big game. Finally, at every opportunity, she tells the clinic's clients her feelings about the restaurant's big game hunting policy.

Dr. Link, the clinic owner, doesn't agree with his technician's protest methods and meets with her to explain that her protests are creating issues with the other tenants. The landlord asks that the protests stop, and the restaurant's management threatens a hostile tenant-to-tenant relationship unless the harassment ceases.

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Dr. Link's technician says she feels that the restaurant ownership stands for beliefs and behaviors that run counter to her commitment as a pet healthcare advocate. She says that she understands the tenant issues, but her right to free speech and her principles preclude her from stopping her protests.

Dr. Link acknowledges that he too has contempt for big game hunters. But he also explains that displaying disapproval in the manner used by his technician isn't acceptable in his veterinary clinic environment. He understands her feelings but he's obligated to look at the "big picture." Tenant conflicts and potential negative financial impact on his practice require that he insist she stop. Both the veterinarian and his technician are dissatisfied when the meeting comes to and end.

The following week Dr. Link calls his technician into his office and tells her he's making a change—he's terminating her employment. She asks if this is because of her attitude and actions concerning the neighboring restaurant, but he only replies that he's making a change and wishes her well in her future endeavors.

The technician is furious. She was only standing up for what she believes in and feels her boss has acted unprofessionally. The technician files a complaint with the state board charging unprofessional and unethical behavior.

The board determines that Dr. Link did not act in an unprofessional manner, as she was an at-will employee. As long as she was not terminated for reasons related to race, religion or sexual orientation, Dr. Link can terminate any employee at any time. Dr. Link meets with his staff and first explains his negative feelings about his restaurant neighbor's big game hunting advocacy. He goes on to say that there's a time and a place for protest but that this isn't it. Finally, as a cautionary note, Dr. Link tactfully tells his staff that this workplace is not a democracy. Ultimately he decides policy and accepts the successes and failures of his own decisions.

Do you agree with Dr. Link? We would like to know. Send us an email at dvmnews@ubm.com to let us know what you think.

Rosenberg's response:

I agree that Dr. Link has every right to terminate his technician and determine workplace policies concerning employee demeanor. But I disagree with his inflexible "my way or the highway" response. He could've offered alternative protest suggestions that would've satisfied both his technician and his onsite tenant conflict. For example, the clinic could make a contribution to an anti-big-game-hunting charity or provide relevant educational information for client consumption. Veterinarians walk a narrow line around small business success, animal advocacy and maintaining staff morale. Here's hoping we all maintain our balance.

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

Apocalypse meow

The end of the world may mean the beginning of a career pivot for veterinarians. With the right attitude, doomsday could be your lucky day!

In the postapocalyptic world, as society struggles to rebuild from the ashes, physicians will be few and far between. Fortunately, television and movies have laid precedent for this eventuality so we know what to expect. During end times, veterinarians like yourself will be promoted. You'll be considered a "real doctor" and will have to treat the elusive hairless primate—or "people," as we affectionately call them. As we anticipate various doomsday scenarios, allow me to prepare you for your impending career pivot.

First of all, don't panic. This is a good general rule for the end of civilization as a whole and is also applicable when receiving your first human patient. As a wise vet once said, "When dealing with a new animal species, try to focus on what's the same, not what's different."

Wait a minute, you say. Humans are animals? Unfortunately, yes. Scientists have kept this tidbit quiet for about a thousand years. Fortunately, the end of humanity as we know it will provide the opportunity to reshape cultural norms and most likely improve the standing healthcare system. Like they say, if life gives you lemons, make lemonade. Or, make hay while the sun shines because nuclear winter is coming.

Imagine yourself in rags, wandering a wasteland of radioactive fog—but with a nice new business card that says your name, followed by, "DVM, MD." Impressive, right? Plus, you'll be rich. The best thing about the collapse of the modern financial system will be student loan forgiveness. On top of that, you'll finally earn a doctor's salary (albeit in the form of clean drinking water and ammunition).

While the atmosphere may be bleak (and perhaps even unbreathable), there'll be new and exciting medical challenges to discover. And because of severe resource scarcity, you'll be able to tap into your creative side at last!

Let's go over an example scenario:

A 23-year-old Caucasian male presents to your cave dwelling early in the morning. About 72 hours ago, his scavenging party was attacked by a pack of roving mutant superwolves. (Everyone else was eaten.) The patient has multiple puncture wounds in his right forearm. The area is swollen and bruised. He is not actively bleeding, but you observe purulent, malodorous exudate. His temperature is 102.3 F. (This is too high for people.)

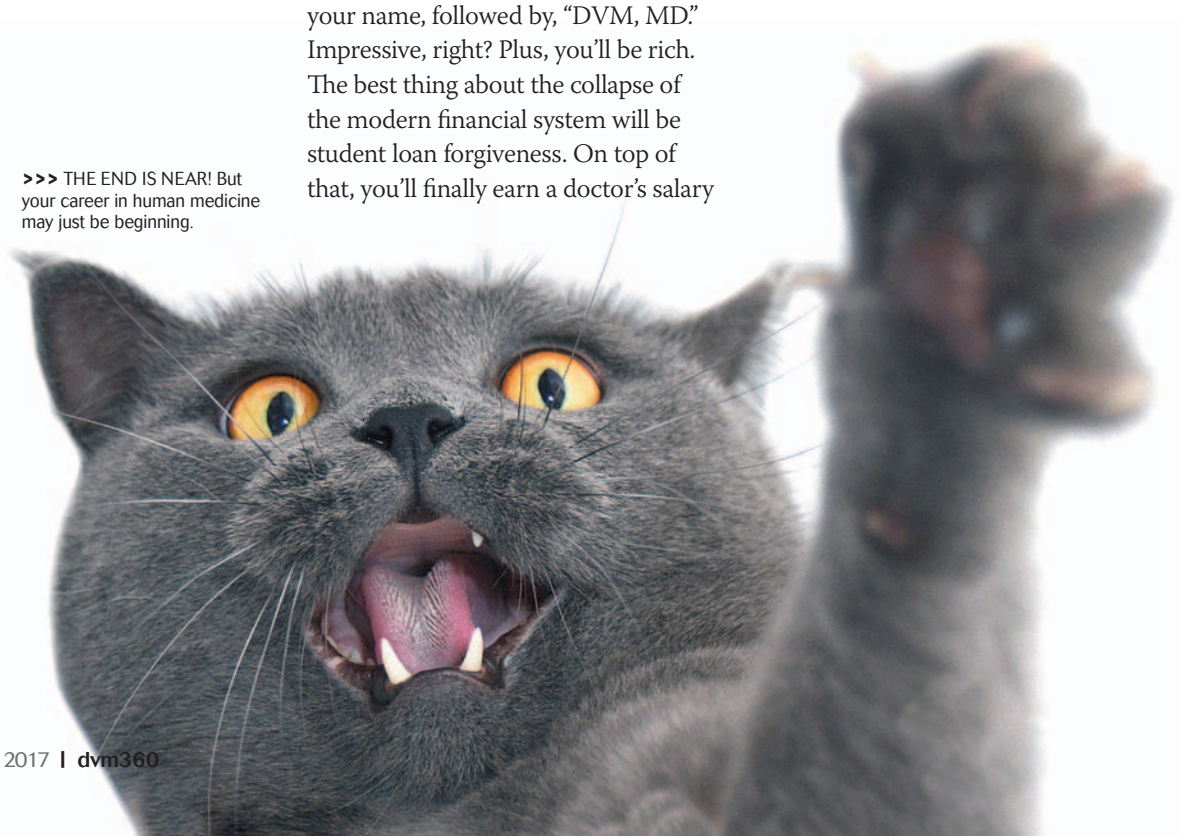
Remember, don't panic. Sure, it's a human arm. And sure, it was a mutant superwolf that got him. But this is ultimately just an abscessed bite wound. Think of your human patient as a big kitty cat instead of a man. But instead of sedating him with dexmedetomidine, flushing the wound, placing a drain and prescribing antibiotics, simply give him a 500-ml bolus of whiskey per os, tie him down and saw off his arm just above the elbow. Remember to cauterize the stump with that shovel you heated up in the fire. No need to prescribe anything—you ran out of antibiotics three moon phases ago.

See how easy the transition can be? It just takes some pluck and a little clinical can-do. If anything, seeing human patients will make our jobs easier. They can talk and enjoy doing so. When an elderly woman says her stomach feels upset, she can also inform you that she's been eating cans of Fancy Feast for the past 10 days in order to survive. Since you know why she's nauseated, you won't even have to run any diagnostics. You can just switch her to a low-fat cat food that'll be more digestible.

Large animal vets will find the transition even more seamless. Rural populations stand a better chance of survival due to slower pandemic velocity, and many country folks are already comfortable taking medical advice from their local vet. Since aseptic conditions were never really a thing, the transition from hospital to field cesarean sections will only be a novelty to the women involved. Also, herd health is dead easy when infected individuals are zombies, and shotgun euthanasias are a no-brainer.

While this all sounds like a lot of fun, be sure to remember the bottom line and keep marketing those practice-builders and routine procedures, like dentistry or neutering husbands who've been out "repopulating the planet" too much. Where others see problems, a good business owner sees opportunities.

Of course, it's impossible to consider all postapocalyptic permutations. Maybe it'll be a nuclear war. Maybe it'll be an alien invasion. Maybe it'll be a weaponized virus that makes people's eyeballs pop right out of their heads. People eyes, pug eyes—they're pretty much the same thing. In the end, you're not just some doctor. You're a veterinarian, so you'll figure it out.



>>> THE END IS NEAR! But your career in human medicine may just be beginning.

JIRI FOLTYN/SHUTTERSTOCK.COM

William Pass, DVM, is a small animal veterinarian in Boulder City, Nevada, who swears he isn't also practicing on people. He can offer advice on growing your own penicillin, backyard bomb shelters and even veterinary medicine.

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ACHIEVE MORE TOGETHER

Does this chart make me look **fat**?

Yes, price and income affect the demand for veterinary services. But in the case of nutrition, education may be just as important.

Clients are much more likely to understand their pet's weight condition if you provide a visual without labels. Consider this: In 2012, the AVMA's Pet Owner Demographics (PDS) survey asked:

Is your pet thin, ideal, overweight or obese?

86%

said their pet was ideal.

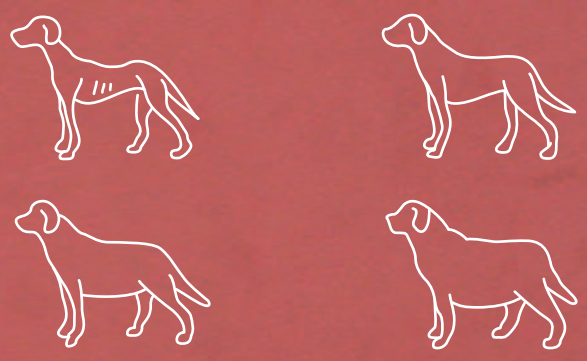
When they viewed a body condition picture and word descriptor (thin, ideal, overweight, obese) in a test sample,

73%

indicated their pet's weight was ideal.

Fast forward to the 2017 PDS survey. When respondents were shown only body condition pictures without the labels and asked:

Is your pet thin, ideal, overweight or obese?



only **51%** of dog owners

said they thought their pet was an ideal weight—

much closer to the **44%** of pets

that are an ideal weight,
according to the 2016 American Pet Obesity Prevention survey.

What does this mean?

A substantial number of dog owners don't know what an ideal weight looks like in their pet, suggesting a need for greater educational effort on pet nutrition and the health problems associated with being overweight.

The new PDS received responses from more than 50,000 households nationwide to estimate the number of pet-owning households, the type and number of pets owned per pet-owning household, and the amount of veterinary service expenditures. Additionally, the PDS sought to collect more specific information on the types of veterinary services purchased and where those services were purchased.

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AVMA EYE ON ECONOMICS | Michael Dicks, PhD

Mine the gap

The results of the AVMA's 2017 PDS provide further support to the idea that veterinarians have a huge opportunity to improve animal healthcare outcomes while increasing their income potential. Over the course of the next year, the AVMA Veterinary Economics Division will focus research and outreach efforts on understanding the factors that affect the demand for veterinary services and on developing actions that veterinary practices can use to improve that demand.

While the number of pet-owning households is rising and the human-animal bond in these households continues to move towards the pet being a family member, the total output of veterinary services is not keeping pace and the number of pets per veterinarian is declining (though it has improved). These trends indicate a need for the profession to seek to both expand and improve the delivery of veterinary services.

Where else are you gapping out?

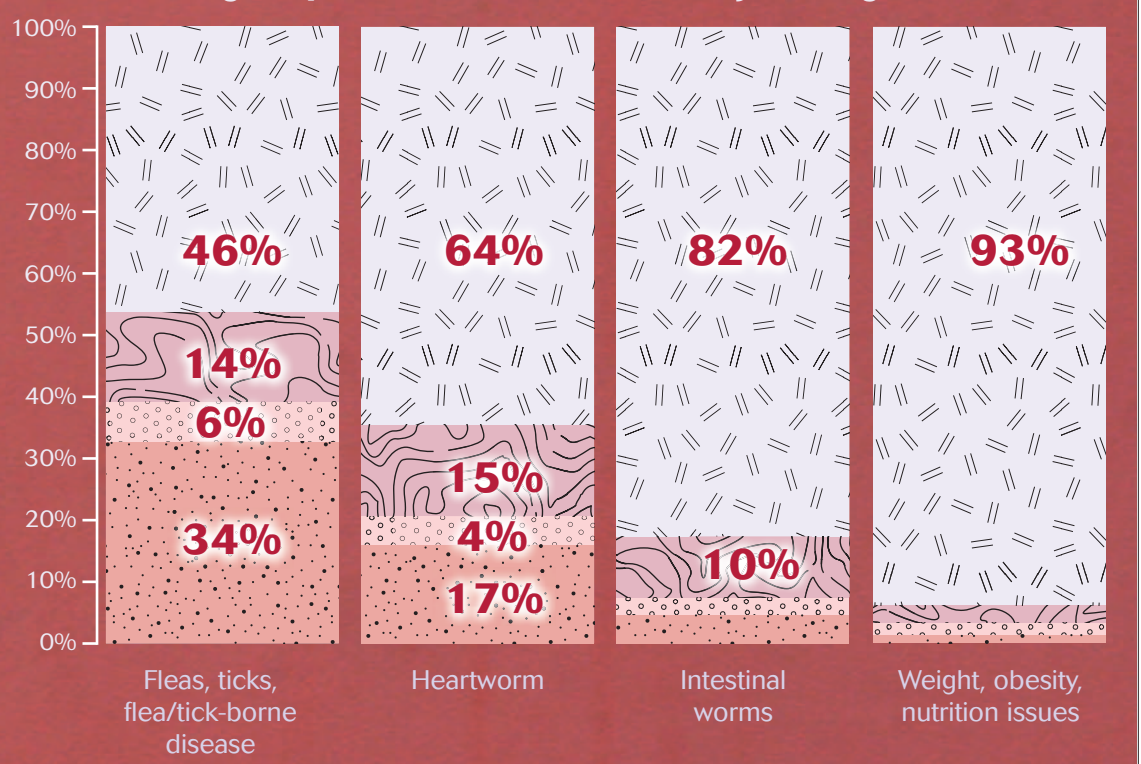
Preliminary results from the 2017 PDS show that a large percentage of pets (canines, felines, equids, birds and others) either aren't receiving healthcare that meets practice guidelines, or they are receiving it but not from a veterinary practice.

According to AAHA standards, the amount of care that a 12-year-old canine needs over the course of its lifetime is five times greater than the care that is actually provided by the average veterinary practice. Read more on this topic at **dvm360.com/AAHAgap**.

Dog-owning household respondents to the PDS provided information on where they received preventive care for their dog(s). Most households indicated that preventive care was not an issue, while a very small percentage (between 1 percent and 15 percent) received the preventive treatment from the veterinarian (see Figure 1 below).

Similar results were seen with horse-owning households. See the exclusive data at **dvm360.com/horsegap.**

Figure 1: **Who gave preventive care or treated your dog(s) for...**



AVMA | Veterinary Economics

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

The 2017 PDS will be available in early 2018, and a summary of the findings will be provided at the 2017 AVMA Economic Summit in Schaumburg, Illinois, October 21-22.

Why 'use it or lose it' works in veterinary wellness plans

When veterinary clients pay an annual fee—or monthly installments—for wellness services over the course of a year, will they be mad if they don't use them? Not if you remind them. (You ARE sending out regular reminders for everything, right?) *By Brendan Howard, Business Channel Director*

Way before the genius veterinarians and businesspeople swept in to build companies to manage wellness plans for veterinary practices, one particular practice owner, evaluator and consultant, Karl Salzsieder, DVM, JD, CVA, saw the opportunity in monthly-payment wellness plans and just did it himself. (*Veterinary Economics* wrote about his efforts numerous times over the years. If you're thinking about getting into wellness plans, you might be inspired by **dvm360.com/sampleplan** or **dvm360.com/wellnessplans**.)

And Dr. Salzsieder has fielded every question under the sun about wellness plans. Tops among them:

1. Should I include free visits for plan members (a la Banfield, where you don't pay for the visit, you pay for the product or service at the visit, as needed)?

2. How do I make sure clients come in to use the services they've paid for by the end of the year?

Dr. Salzsieder will argue any day that for most clients and most pets, you will come out way ahead, and that patient care will come out way ahead, when clients aren't staying away from your hospital ("Let's just wait and see...") because they're afraid of an automatic charge for a visit. Wellness-plan clients come in an average of 5 times a year, he says; clients not on the plan visit an average of 1.1 times.

And that second question, about unused services? Dr. Salzsieder has a solution for that too: Tell them. And tell them again.

"Our solution is to mail them a letter about 90 days before the end of the term of the one-year agreement and include in that letter notice of the items that still need to be checked before the plan expires," Dr. Salzsieder says. That gets some busy clients over the hump and into the exam room.

"We also add them to our compliance calls, so they're called or receive a phone message to remind them to come in for the unused items," he says. That helps some clients.

"The goal is to build the plans around bi-annual exams and preschedule every exam before they leave."
—Jessica Goodman Lee, CVPM

One company managing wellness plans for independent veterinary practices is Veterinary Credit Plans, and their process mirrors Dr. Salzsieder's—except with an email bent. Director of Veterinary Solutions Jessica Goodman Lee, CVPM, says their system sends email reminders 90 days and 60 days out from the end of the plan's automatic renewal date.

But Goodman Lee says she and her team coach veterinary practice managers to make calls and send out customized emails, like Dr. Salzsieder's, that spell out not just the date of the end of the plan, but exactly which services the client hasn't taken advantage of.

"The goal is to build the plans around bi-annual exams and preschedule every exam before they leave the practice," Goodman Lee says. That's twice-a-year visits, at least, as well as forward booking. (Do what dentists do, you won't be sorry.)

Still, Dr. Salzsieder says, after letters and calls (and maybe some emails), some clients still don't make it in.

"We have around 30 percent of clients who don't use all of the medical procedures that are part of the plan," he says. But that doesn't infuriate these

DMITRIJ SKOROBOGATOV/SHUTTERSTOCK.COM

customers. According to Dr. Salzsieder, the vast majority of pet owners feel they were warned but just didn't get around to it. And they still sign up for the plan again.

"We have roughly 85 to 90 percent renewal rate year over year," Dr. Salzsieder says. "Once they're on the plans, they love them and know that their pet gets more veterinary attention and a savings at the hospital for the plan savings and for the extra 5 percent discount for things that are not included with the plan that their pet needs during the wellness plan year."

Note: Don't freak, you antidiscounters. YOU don't have to offer a discount. Plans at some practices do well just with the client convenience of knowing what wellness plan services are needed for a healthy pet and offering monthly installments to pay for it.

Another note: Don't freak, you people pleasers. YOU don't have to cancel services a client didn't use. Want to honor a service they paid for in 2017 first thing in January 2018? The company you work with might have a code for that.

Too hard. Don't wanna.

When some readers used to see Dr. Karl Salzsieder's wellness plans, they would break out in hives. Who's going to set this up? How do we charge for it? Who's going to send out reminders? Who's going to administer this? Today, you are free to rock your own plan ... or you can get help. Here are a handful of companies poised to help make implementing annual wellness plans doable:

> DVM Network offers, not a wellness plan, but the loyalty discount card Pet Assure. It's like Diner's Club, only for veterinary practices. Some practitioners who use it swear by it.

> The big PIMS and diagnostic dog IDEXX has the wellness plan Petly Plans.

> Premier Pet Care Plan promises a real hands-on, coaching take on implementing a wellness plan at your veterinary practice.

> Got a mixed-animal practice? Prevent Plans' Well Pet Plans cover cats, dogs and horses.

> We quote Veterinary Credit Plans' Jessica Goodman Lee here, and the company helps veterinary practices implement, market and manage those pesky credit card payments for annual wellness plans.

The takeaway? You're smart, and you can go it alone on wellness plans with a strong action plan, a great practice manager to help and a team-wide effort. But if you want backup, look around the next Fetch conference exhibit hall, or check out the offerings like those above on Products360 by visiting **marketplace.dvm360.com**

Four types of imaging come to the rescue of Maddie the Yorkie

BluePearl team in Southfield, Michigan, uses radiography, ultrasound, bronchoscopy and fluoroscopy to manage acute respiratory crisis.

When a Yorkshire terrier named Maddie started coughing so badly she could barely breathe, the Cassel family cut their vacation a day short so they could get to their veterinary hospital.

Maddie's severe respiratory distress might have killed her a decade ago. But Maddie's veterinarians at BluePearl Specialty & Emergency Veterinary Care in Southfield, Michigan, used four types of imaging to diagnose and treat her condition: radiographs, ultrasound, bronchoscopy and fluoroscopy.

"It's like a person going in to the hospital," said Maddie's owner Prudy Cassel in a release from BluePearl. "To know that they can give this kind of care to an animal and be just as successful as on a human being, I think that's amazing."

Maddie's story began with a family trip to northern Michigan for kayaking and relaxing.

The dog, age 7, began breathing heavily and could not get to sleep in the cabin at night. Prudy's husband, David Cassel, stayed up with her all night. They drove the next day to the BluePearl hospital in Southfield, cutting their trip short by a day. Maddie had been a heavy breather for years, but this time she was clearly in trouble.

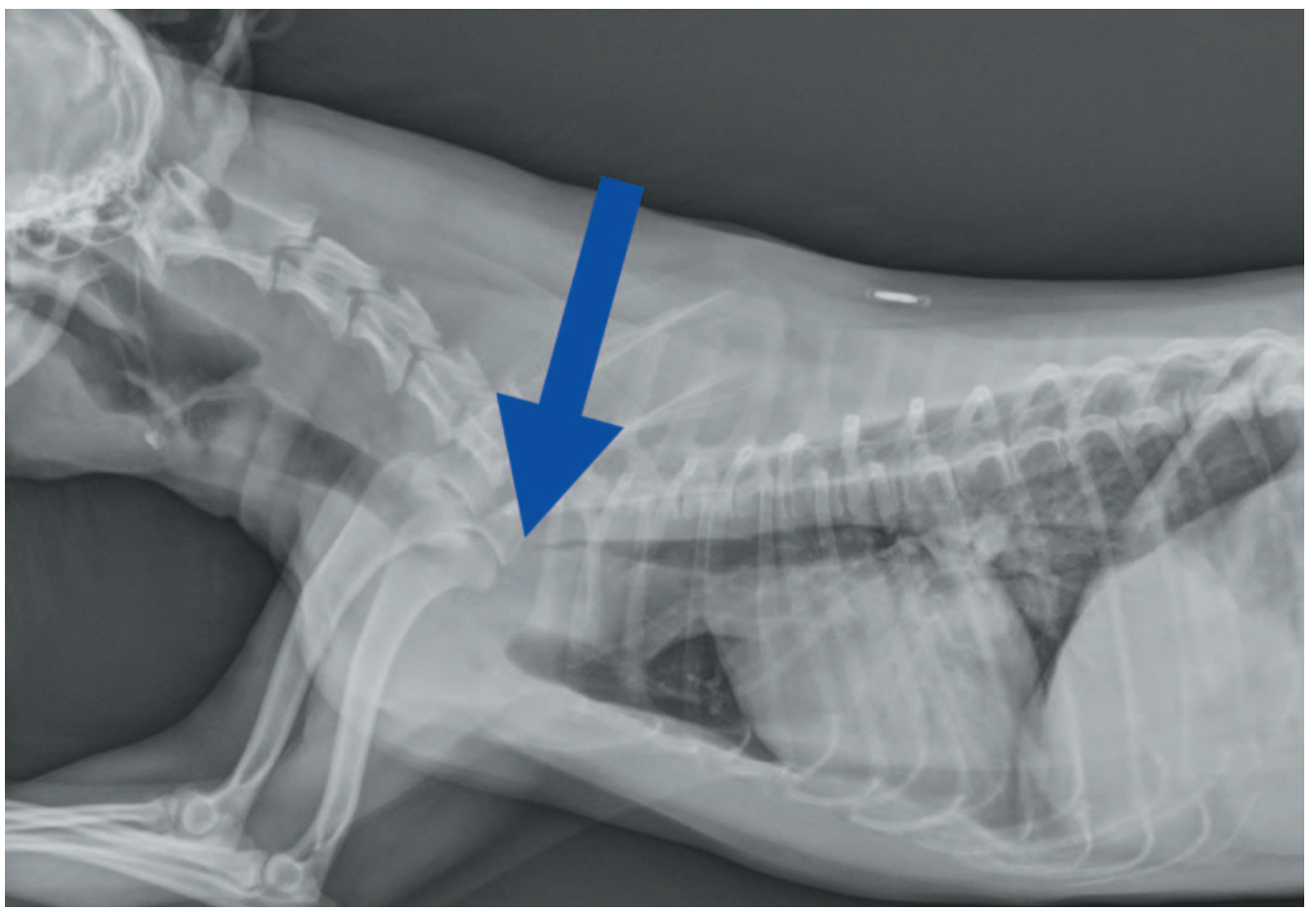
Maddie was in extreme respiratory distress on presentation, requiring immediate sedation and oxygen therapy. Radiographs identified complete consolidation of her left caudal lung lobe, consistent with pneumonia, along with severe tracheal collapse at the thoracic inlet.

Maddie was admitted to BluePearl's intensive care unit, where her treatment included ongoing oxygen therapy, broad-spectrum antibiotics, intravenous fluid therapy, and nebulization. Over the next few days she became less dyspneic and was weaned off oxygen, but she remained lethargic with very loud stridor and a cough easily triggered with the slightest movement.

Jessica Romine, DVM, DACVIM, who recently completed her residency in internal medicine at BluePearl, wanted to investigate the possibility of a collapsed trachea. A collapsed trachea normally is a degenerative condition in older dogs, and Maddie was only 7. But Dr. Romine was aware of new studies identifying a specific subset of Yorkshire terriers with congenital tracheal malformations rather than traditional cartilage degeneration.

Michelle Rose, DVM, MS, DACVR, a BluePearl radiologist, performed an abdominal ultrasound to make sure there wasn't any other obvious reason for the persistent lung consolidation, as well as an extrathoracic tracheal ultrasound to rule out an obvious intraluminal tumor, another possibility based on radiographs. Dr. Romine also performed a bronchoscopy, which confirmed that Maddie's trachea was collapsed, right at the location most often affected by these congenital malformations. "The thoracic inlet was almost completely occluded," she said.

This condition explained why Maddie was in such severe distress. "This pneumonia sent her into a crisis, and it probably wouldn't have without this congenital defect," Dr. Romine said.



A radiograph showing the area of the collapsed trachea (blue arrow).

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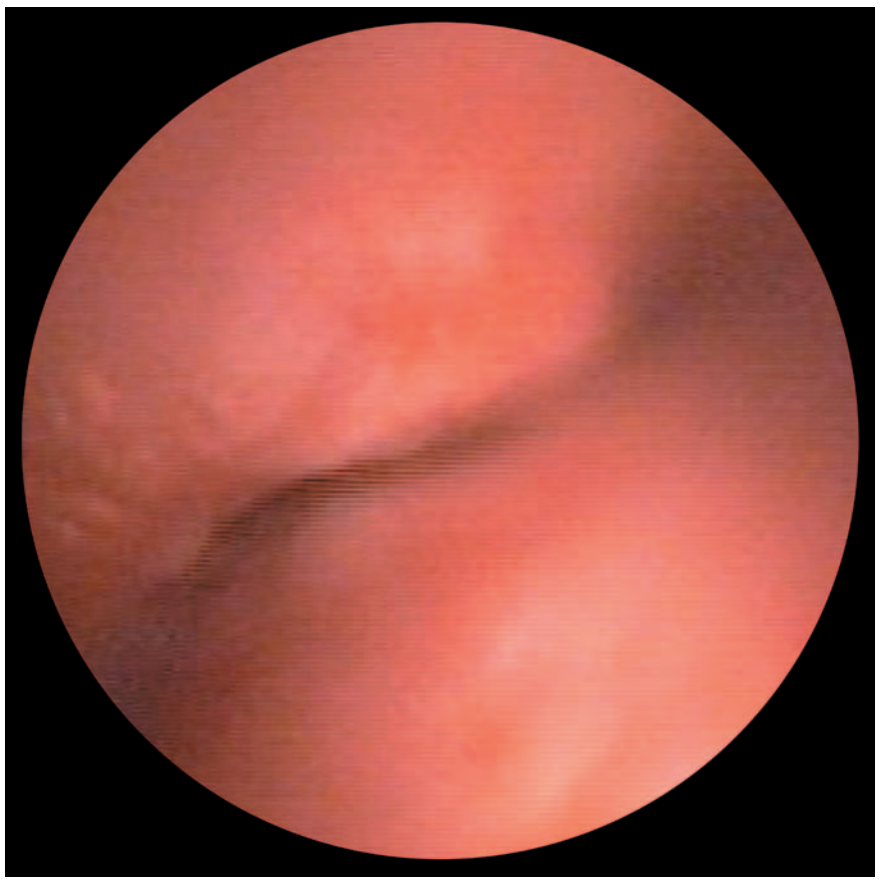
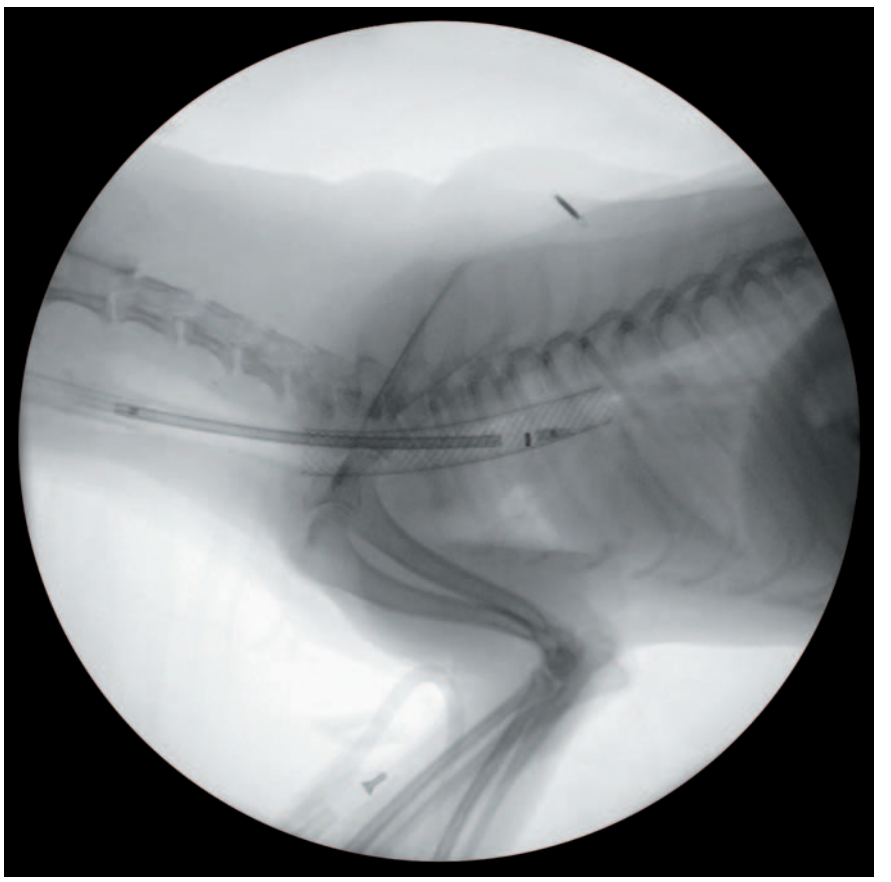
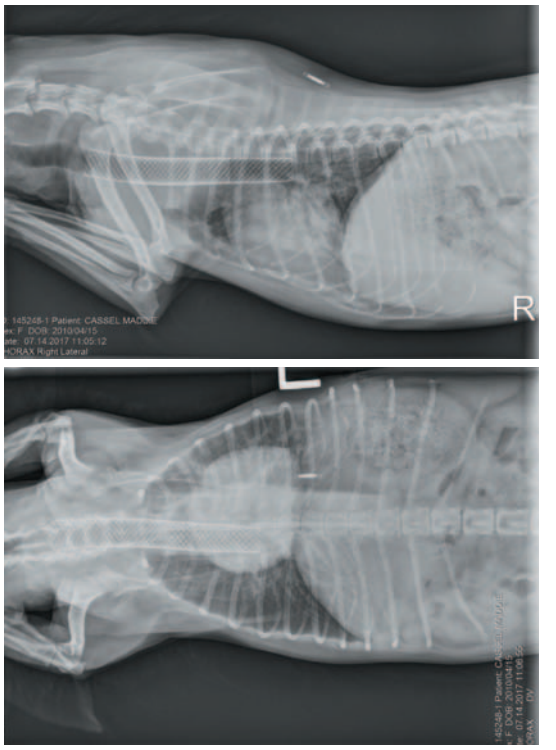


A bronchoscopy image shows that the trachea is almost completely occluded.



Fluoroscopy was used as Dr. Romine placed the stent in the trachea.

The next step was to place a stent in Maddie's trachea to keep her airway open. A variety of lengths and diameters of stents are available and placing the right one is critical. That's one reason Dr. Romine chose to use fluoroscopy in this procedure. By examining her progress through the video images provided by fluoroscopy, she could watch the procedure in real time. She placed two stents to provide extra support at the point of collapse, knowing the congenital cases are more prone to reobstruction over time.



Radiographs showing the stent.

Afterward, Maddie was still recovering from the pneumonia, but her loud, honking cough had gone away. Even under light anesthesia Maddie had been coughing in the fluoroscopy procedure, but as soon as the stents were placed she began breathing deeply and quietly.

"She was immediately doing better and we were able to discharge her the next day," Dr. Romine said. At her first recheck a week later, Maddie's pneumonia had almost completely resolved. She will need to be monitored over time to ensure the stent does not migrate or fracture, but with medical management the BluePearl doctors have high expectations for Maddie long-term.

In fact, Prudy Cassel says the family had gotten so used to Maddie's loud breathing that it took a while to get used to her not doing it. Sometimes she still wonders where Maddie is, only to find that the dog is right next to her.

"To us as a family, it's like a miracle," she said.

MEDICINE | Surgery

8 mistakes you're making in surgical anesthesia

The patient is young and healthy—what could possibly go wrong? Plenty, say Drs. Jennifer Wardlaw and Andrew Claude. *By Sarah J. Wooten, DVM*

Young patients experience anesthesia complications during routine surgery at an alarming rate, with hypothermia being the most common, say Jennifer Wardlaw, DVM, MS, DACVS, and Andrew Claude, DVM, DACVAA. During a recent CVC (now Fetch) veterinary conference, they offered tips for combatting hypothermia as well as other common mistakes in surgical anesthesia. Here are eight pitfalls to avoid—and how.

Mistake 1: Treating young patients as low-risk

While increased age does carry a slightly higher anesthetic risk, the assumption that younger "healthy" patients are practically free of anesthesia risk is dangerous, says Dr. Claude. The real issue is the presence of any comorbidities. Therefore all healthy patients should receive a thorough preoperative workup including a physical exam and minimum database (including hematocrit, total solids and blood glucose concentrations), Dr. Claude says. Geriatric patients, of course, require a more in-depth approach with special attention to cardiovascular, respiratory and vital organ function. Most anesthesia-related deaths occur during recovery, so it's vital to monitor all patients during the entire anesthetic period.[1]

Mistake 2: Not keeping equipment healthy

Vaporizers need to be calibrated every three to five years, Drs. Wardlaw and Claude say. Create a preoperative checklist to reduce the risk of using faulty equipment. Keep your breathing systems clean and check your machine every day for leaks before using it. If you have an undetected leak, you have no way of knowing how much anesthetic or oxygen is going into your patient versus into the environment.

Mistake 3: Not changing CO_2 absorbents regularly

When CO_2 reacts with the absorbent, an irreversible chemical reaction occurs, and the absorbent changes into calcium carbonate. Over time, the purple color will fade from the calcium carbonate, tricking veterinarians and technicians alike. If the granules are soft and squishy, they're still OK, our experts say. If the granules are hard,

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then they're expended. Make a plan to change the absorbents regularly by putting a reminder on your smartphone calendar with an alert, marking it on a paper calendar, adding it to your checklist—whatever works for you.

Mistake 4: Not keeping proper anesthesia records

Anesthesia monitoring records are legal documents. Dr. Claude has been a professional witness in two legal cases involving anesthesia incidents for veterinarians, one of whom did not keep proper records. That was a problem for the veterinarian. Protect yourself and keep proper records—you can download anesthesia monitoring sheets from AAHA online. Record all drugs given in milligrams or micrograms, not milliliters, and record all events, especially adverse events. This is a good task to delegate—consider training a technician to maintain and oversee anesthesia records.

Mistake 5: Not using an anesthesia checklist

Checklists were first utilized by the aviation industry in the early 20th century because pilots kept crashing due to important missed details. A checklist can save your patient's life, so if you don't regularly use an anesthesia checklist, have a technician create one for your practice. Include things like preoperative drugs, induction drugs and other routine steps—applying eye lube, monitoring leads, inflating the cuff, starting fluids, doing sponge counts and so on. You can download an AAHA anesthesia checklist online. Checklists help you focus on the medicine and stop sweating the small (but still critical) stuff.

Mistake 6: Not taking hypothermia seriously

This is a big one, say Drs. Wardlaw and Claude. Hypothermia is the most common complication during general anesthesia and recovery. Anesthesia shuts down processes that control shivering, metabolism and thermoregulation. Hypothermia increases stress for the patient, reduces patient welfare postoperatively, prolongs recovery and decreases the immune response. Have you ever had a dog break out with pyoderma or an ear infection after surgery?

Hypothermia is the most common complication during general anesthesia and recovery ... Patients start losing heat as soon as you premedicate them, and smaller patients, older patients and certain breeds such as dachshunds are more severely affected.

Hypothermia could be the culprit. Patients start losing heat as soon as you premedicate them, and smaller patients, older patients and certain breeds such as dachshunds are more severely affected. Dr. Claude recommends implementing strategies to mitigate hypothermia as soon as you start working with the patient.

Patients lose heat in four ways: radiation, convection, evaporation and conduction. Wrapping the patient in a circulating-warm-water blanket is not enough to raise body temperature. Instead, Dr. Claude recommends attacking hypothermia with a multimodal approach, including limiting anesthesia time where you can, warming lavage fluids, utilizing circulating-warm-water blankets and using heated tables. Dr. Claude particularly likes the Hot Dog patient warming system and the ChillBuster warming blanket from DVM Solutions. If the patient is wet after surgery, use a blow dryer to dry it. If it's hot outside and the patient can walk, take it outside after surgery.

What about warming fluids? Dr. Claude says yes! Fluid line warmers are a bit controversial as to whether they work, but Dr. Claude believes they do. If you're going to use them, make sure you place them as close to the patient as possible or they'll do no good.

Another inexpensive proactive strategy Dr. Wardlaw recommends is using a rescue blanket, which reflects the patient's own body heat back onto it. These metallic disposable blankets should not be used with cautery and won't work well if the patient is already hypothermic. They are better used as prevention to help keep body temperature from plunging.

More tips:

- If you use a Bair Hugger, don't turn it on until after the patient is draped to avoid blowing contaminants into the surgical field.
- Bubble wrap is a good, cheap option.
- Electric heating pads are not a good idea as they can cause burns.

Mistake 7: Letting the operating room (OR) function as a storeroom or high-traffic area

Dr. Wardlaw says that anything higher than a 4% infection rate in young, healthy patients undergoing routine, elective procedures (except for complications secondary to licking or chewing of incisions) is too high. But let's be honest, everyone wants a 0% nosocomial infection rate.

She wants you to ask yourself these questions: How clean is your OR? How clean is the air flow in the OR? Do you keep the door to your OR closed, or is it also a storage area for your laser and the overflow for surgical prep and blood draws? This is one place where the ancient Semitic people had it right: the OR should be the holy of holies—nobody except gowned and gloved technicians and surgeons should be allowed into the room.

Minimize the risk of contamination by closing the door and reducing the number of trips in and out. Try not to store anything in the OR, but if you must use it for storage, keep items in cabinets with closed doors. Keep counters clean and free of dust-collecting objects. Cold trays do not belong in the OR, Dr. Wardlaw says.

Keep a lint roller outside your OR, Dr. Wardlaw suggests, and lint roll your scrub top and pants before entering. Insist that technicians monitoring anesthesia wear a cap and mask. Anyone with a beard must have it covered.

Booties do not reduce infection, Dr. Wardlaw says.[2,3] If you're an AAHA-accredited practice you must wear booties; however, mopping the OR after every procedure, or at the least every day, as well as a deep end-of-the-week cleaning, will do more to reduce infection than booties.

More low-cost tips:

- If you notice fleas crawling into your surgical field, you can give nytenpyram rectally.
- Use a clipper that's dedicated for surgical prep. You don't want to shave for a tibial plateau leveling osteotomy (TPLO) with the same clipper that was just used to clip an anal gland abscess, right?
- If space allows, dedicate two separate prep areas to minimize cross-contamination—one for sterile surgeries and one for all other procedures.
- Clip against the grain of the hair, and Shop-Vac the patient instead of using a lint roller. Put a bouffant cap over the HEPA filter of the vacuum to keep it from getting clogged with hair.
- Dr. Wardlaw recommends a two-step prep process for the surgical site: The first is a rough prep before entering the OR, and the second is a sterile prep once in the OR. She uses chlorhexidine unless a mucous membrane is involved, in which case she uses povidone-iodine. For her final prep, she paints a 99% alcohol 3:1 chlorhexidine solution onto the patient's skin. Keep in mind that this mixture can ignite if you use cautery too soon—let it dry completely first!

Mistake 8: Scrubbing

Did you know that human doctors don't scrub anymore? When you scrub with the black brushes, you make micro-abrasions on your hands that grow bacteria and increase the rate of surgical infection, Dr. Wardlaw says.

The World Health Organization recommendation is to stop presurgical scrubbing and instead apply alcohol-based surgical hand disinfectant, such as Sterilium or Avagard, to your hands before going into surgery. Yes, old habits die hard, but Dr. Wardlaw says *stop scrubbing*. Use alcohol-based hand disinfectants with the appropriate contact time instead. If you have gross contamination, like fecal material or hair, use a gentle soap to wash with before you get ready to prep for surgery.

From routine equipment maintenance to hypothermia prevention to operating room cleanliness, these tips will help you avoid complications in your routine surgical patients.

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Dr. Sarah J. Wooten is a member of the American Society of Veterinary Journalists and divides her professional time between small animal practice in Greeley, Colorado; public speaking on associate issues, leadership and client communication; and writing. She enjoys camping with her family, skiing, SCUBA and participating in triathlons.

Prevent injury in canine athletes

Special pets need specialized care. Here are six ways you can help keep these hardworking patients fine-tuned and happy.

"Athletes have a special kind of life," says CVC—now Fetch—speaker Laurie McCauley, DVM, DACVSMR, CCRT, CVA, CVC. As such, she says they need special attention too. Dr. McCauley outlines six facets of care and treatment for canine athletes below:

1. Nutrition. Keep the dog's diet in line with the task. For example, sled dogs eat 80 percent fat to be able to keep up their body mass while running the Iditarod, says Dr. McCauley.

2. Warm up and cool down. Use warm up and cool down phases to decrease the chance of muscle injuries and stress and pain after exercise.

3. Skill training review. According to Dr. McCauley, it's important to review skill training after an injury that's kept a dog out of its sport for at least a month to make sure the dog's balance is proficient for returning to its specialty.

4. Proprioception and balance. Make sure the dog knows where its feet are in space. Just like professional gymnasts can do flips and twists and land on their feet, says Dr. McCauley, we need our patients to be able to run up a dog walk, go over a jump and run through a field without injuring themselves.

5. Cross-training. Dr. McCauley says it's important to work on strengthening type 1 and type 2 muscle fibers to maximize performance.

6. Rest and relaxation. Just like humans, canine athletes need to chill and reset. "We need to let these guys rest at least one day a week and one month a year to allow their bodies to heal," says Dr. McCauley. Without rest, perfomance can decrease, and so can the immune system. Overworked canine athletes can also become depressed and are at an increased risk of injury.

Want to hear Dr. McCauley talk about preventing injuries in canine athletes in her own words? Check out the video on this topic here: **dvm360.com/mccauleyvideo**.

ROBERT NYHOLM/SHUTTERSTOCK.COM

Take on Diabetes and Obesity with One Nutritional Solution

Remission is the ultimate goal when managing diabetic cats, and best achieved with concurrent use of insulin therapy and a therapeutic food. When formulating a nutritional recommendation, it's important to consider factors including body weight/condition, concurrent diseases and food preference.

Weight loss and long-term maintenance is a key component of effective diabetes management, helping to improve glycemic control and a cat's overall health and quality of life. Diabetes is the third most common obesity-related condition in cats, and a major concern as approximately 58% of cats in the U.S. are overweight or obese.[1]

Remission Rates and Low-Carbohydrate Foods

Low-carbohydrate foods are often recommended for managing diabetic cats, and results of published studies indicate that a range of dietary carbohydrate amounts (5 to 26% of calories or 1.4 to 7.6 g/100 kcal) are associated with diabetic remission and improved glycemic control.

In one 16-week study of diabetic cats,[2] effects of a moist moderate-carbohydrate/high-fiber food (7.6 g carbohydrate/100 kcal or 26% of calories) were compared with a moist low-carbohydrate/low-fiber food (3.5 g carbohydrate/100 kcal or 12% of calories). Significantly more cats fed the low-carbohydrate food achieved diabetic remission (68% versus 41%) and were considered well-regulated (81% versus 56%) compared with cats fed the moderate-carbohydrate food.

Guidelines for Effective Nutritional Management

Nutritional consistency is important when recommending a food for diabetic cats. There can be extreme variability in nutrient content (e.g., dietary carbohydrate amount) between commercial foods – even between different flavors within the same brand. A lack of day-to-day nutritional consistency can affect glycemic control.

The highest reported remission rates have been associated with exclusively feeding moist low-carbohydrate foods. Additionally, moist foods may enhance success of weight loss as they are meal-fed, making portion control easier. While moist foods are ideal, few diabetic cats are fed moist foods only. A successful transition to a moist food diet can be achieved through a gradual transition over a period of several weeks.

When diabetic cats are fed dry food, it should be meal-fed and not provided free-choice. This is especially important in overweight diabetic cats. Dry low-carbohydrate foods may contain more calories per cup (often twice as many) than typical feline foods. If any food is consumed in excess of caloric needs, this could have a negative impact on the health of cats who are obese and/or diabetic.

Manage Both Diabetes and Obesity with One Nutritional Option

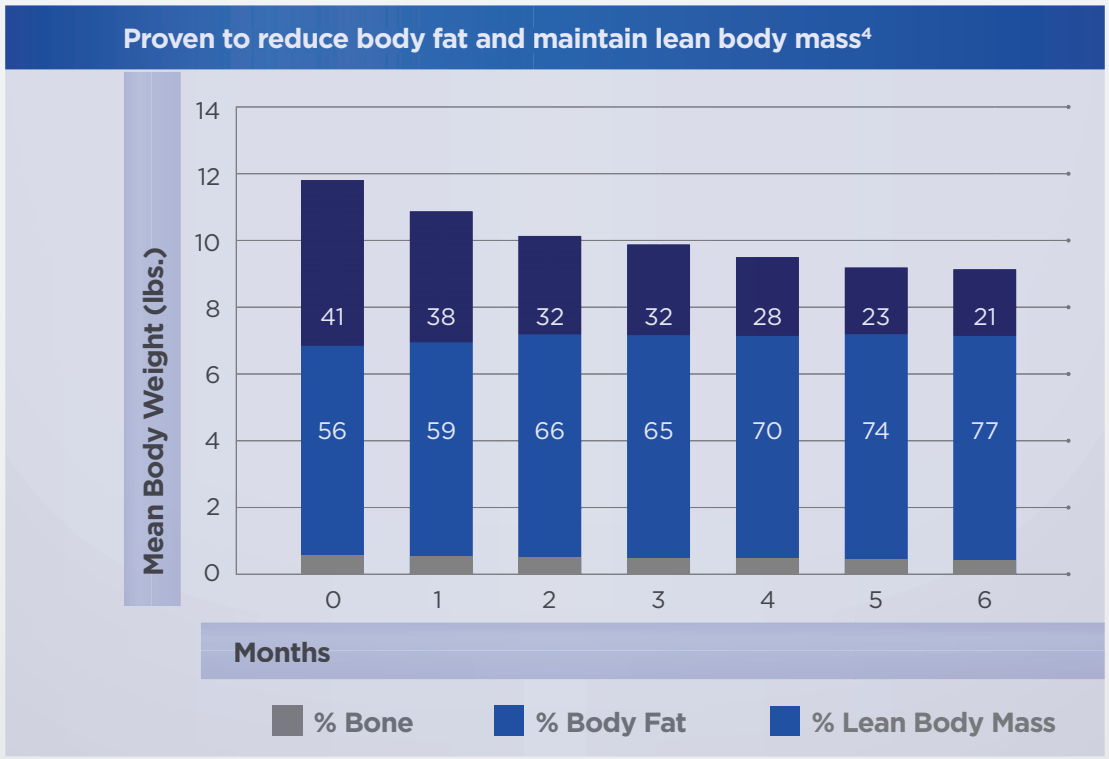
Fortunately, there is a nutritional option for veterinary professionals to help their patients effectively manage obesity and improve glycemic control in diabetic cats.

Prescription Diet® m/d® Feline from Hill's Pet Nutrition helps cats reach diabetic remission in two key ways:

- It's clinically shown to help stabilize blood glucose concentrations and maintain glycemic control.[3]
- It's clinically proven to alter metabolism to address obesity, a risk factor for diabetes. In one study, 75% of cats fed Prescription Diet m/d Feline reached their ideal body weight within 20 weeks.[4]

Hill's Prescription Diet m/d Feline is a low-carbohydrate food that supports glycemic control. It's clinically proven to reduce body fat while maintaining lean muscle mass. This helps cats achieve and maintain a healthy weight, a key step in achieving remission.

HOW A LOW-CARBOHYDRATE, HIGH-PROTEIN FOOD CAN REDUCE BODY FAT AND MAINTAIN LEAN BODY MASS



Prescription Diet m/d Feline is available in both wet and dry formulas, and provides consistent carbohydrate levels between formulas. This is essential to help maintain glycemic control when pet owners choose to feed both wet and dry formulas. In addition, Prescription Diet m/d Feline includes L-carnitine to support lean muscle mass and is formulated to help reduce the risk of struvite and calcium oxalate crystals.

Through nutritional management with Prescription Diet m/d Feline, veterinary professionals can effectively manage obesity, improve glycemic control, and help diabetic cats achieve remission.

For more information visit HillsVet.com.

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[3]Data on file, Hill's Pet Nutrition, Inc.
[4]Data on file, Hill's Pet Nutrition, Inc.

Abnormal liver enzyme activity?

There's an algorithm for that

Whether your canine patient is symptomatic or asymptomatic, use this guide to help you get to a diagnosis.

By David Twedt, DVM, DACVIM

You just got your lab report, which shows abnormal liver enzyme (e.g. alanine transaminase [ALT], aspartate aminotransferase [AST], gamma-glutamyltransferase [GGT] and alkaline phosphatase [ALP]) activity. The frustration begins. How much do you need to worry about it? The patient may have primary liver disease, but a nonhepatic condition resulting in secondary liver problems is more likely. It's important to find the exact cause, but the path to a diagnosis can be tricky to navigate—especially if the dog is asymptomatic.

Use the algorithm on the next page as a guide for working up dogs with abnormal liver enzyme activities.

Symptomatic patients

When I have a sick dog with abnormal liver enzyme activities, the first thing I do is look for a primary, nonhepatic cause. Could it have gastrointestinal (GI) disease, pancreatitis, heart failure, septicemia or some other underlying disease?

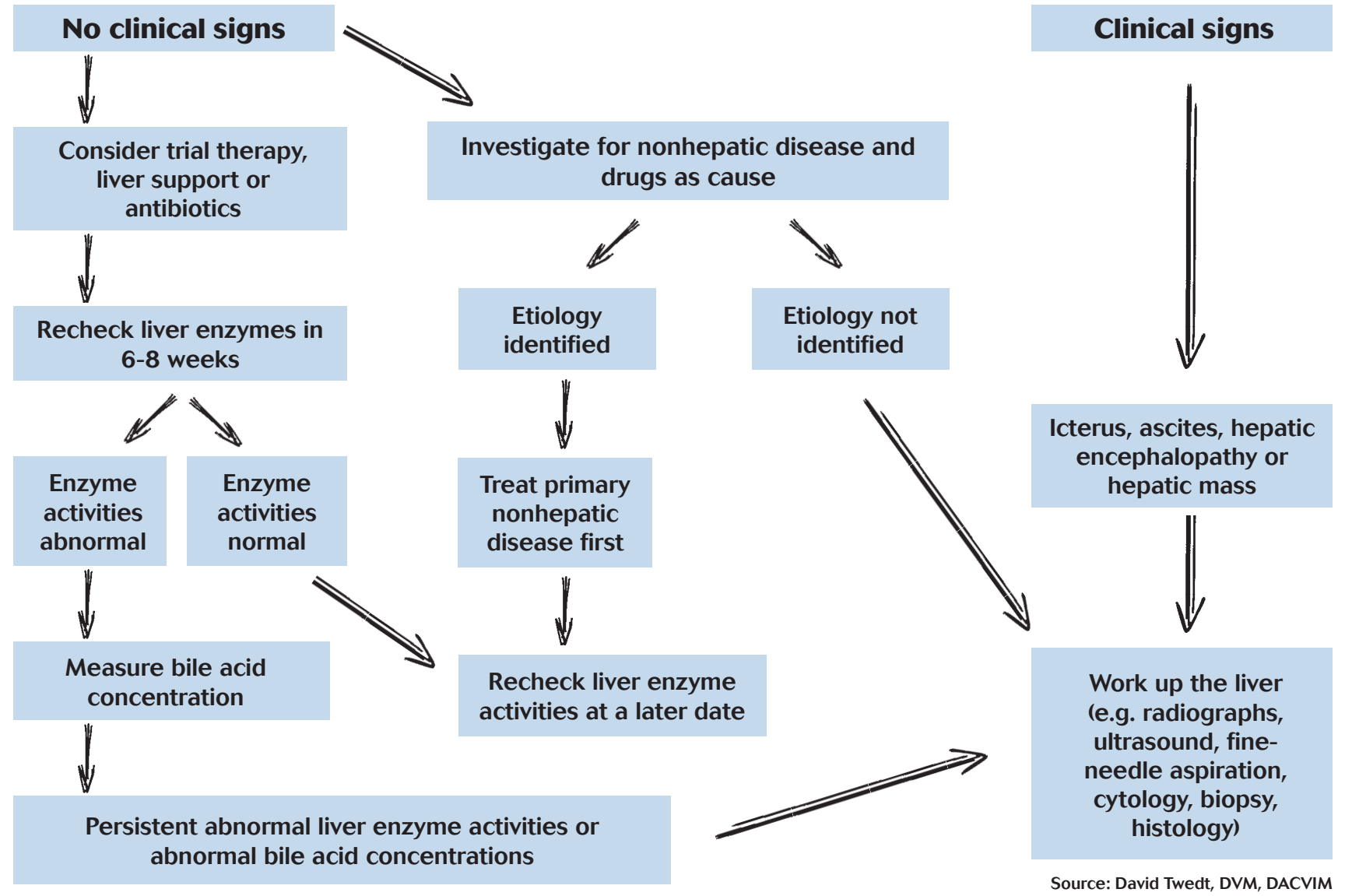
If I identify a nonhepatic disease that could be the cause, I treat that first. If, on the other hand, I can't find anything, I work up the patient's liver.

Here's my list of liver workup considerations:

- Abdominal radiographs
- Serum bile acid concentration (in nonicteric patients)
- Abdominal ultrasound

SUSAN SCHMITZ/SHUTTERSTOCK.COM

How to handle abnormal liver enzyme activity in dogs
(ALT, AST, GGT and ALP)



Source: David Twedt, DVM, DACVIM

- Hepatic fine-needle aspirate and cytology
- Coagulation profile
- Liver biopsy (via ultrasound-guided needle biopsy, surgery or laparoscopic biopsy).

Asymptomatic patients

Determining what to do with an asymptomatic dog is more complex. First, I perform a full physical exam to make sure I'm not missing some occult disease, such as an endocrine or metabolic disease. I then check the patient's drug history, as certain drugs (such as corticosteroids) can cause liver changes. I also check to see whether the patient is being given alternative medications because some herbals can cause liver disease as well.

If I don't find anything and the animal's healthy, I repeat the liver enzyme profile in six to eight weeks. During this interim period, I may consider giving the patient liver support medications (like S-adenosylmethionine, milk thistle, vitamin E or other antioxidants) or a course of antibiotic therapy if I suspect a bacterial infection (such as leptospirosis or bacterial cholangitis).

If the liver enzyme activities are still abnormal and the patient is still asymptomatic at the end of this six- to eight-week waiting period, I recommend further investigating the patient's liver.

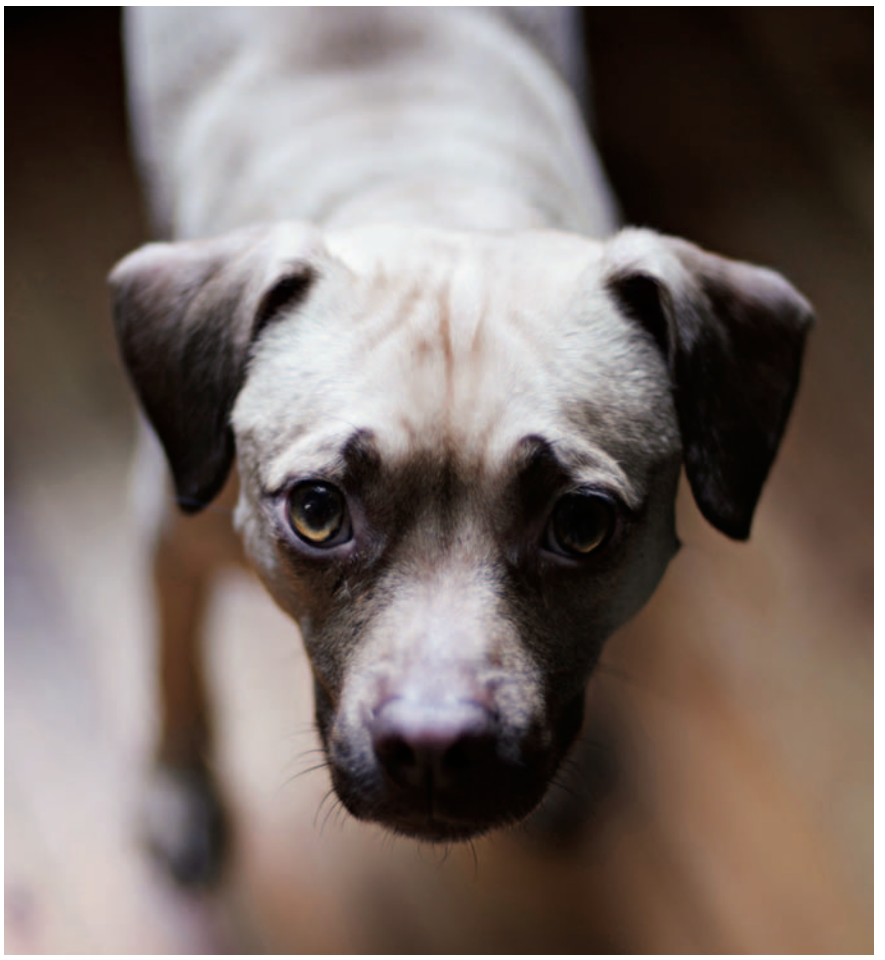
One thing I often do at this point is check the patient's bile acid concentration. If the patient has an abnormal bile concentration and abnormal liver enzyme activities, I have strong evidence for recommending a liver workup because it suggests there is altered liver function of portal vascular shunting.

Dr. David Twedt is a professor at Colorado State University.

3 medications for **triggered pets**

Dr. E'Lise Christensen shares a few of her favorite medication options that provide fast fixes for situational anxiety, panic and phobia.

According to veterinary behaviorist E'Lise Christensen, DVM, DACVB, behavior runs deep beneath the human-animal bond and the tie can be strained or even permanently severed if problems arise. Helping animals with their behavioral issues is rewarding, but getting there can be a slow process. And when it comes to situational anxiety, panic and phobia in pets, you want to see results fast. At a recent CVC (now Fetch), Dr. Christensen shared a list of her favorite medications that can help a dog within 60 to 90 minutes—a short amount of time compared to going without medication. Here are some of the many that she shared from her session.



The benzodiazepines

Use: Common medications in this class include diazepam, clonazepam, clorazepate, alprazolam, lorazepam and oxazepam. These alter gamma-aminobutyric acid (GABA), the most widespread inhibitory neurotransmitter in the brain. According to Dr. Christensen, this neurotransmitter moderates vigilance, anxiety, muscle tension, neuronal excitability and memory (too much GABA can inhibit memory).

Side effects: Sedation, ataxia, increased appetite, muscle relaxation, paradoxical excitation/anxiety, idiopathic hepatic necrosis and impaired learning. (Note: Impaired learning should not be a rational reason to exclude this category of medications from your toolbox because anxiety, panic and fear also impair learning.)

Trazodone

Use: Indicated for patients with anxiety disorders and for calming active patients after surgery. According to Dr. Christensen, veterinary studies have reported improvement in clinical signs around 60 to 90 minutes after administration in most patients.[1-4]

Side effects: Nausea (can be prevented in many patients by starting at the low end of the dose range and titrating up as needed), diarrhea, ataxia, sedation, panting, increased anxiety, agitation and irritability.

Clonidine

Use: Indicated in dogs with fear-related aggression, noise phobia and separation anxiety. According to Dr. Christensen, this alpha2-agonist works by blocking norepinephrine release in the locus ceruleus and is effective in 60 to 90 minutes in many patients. It can be used as a single agent or rationally with selective serotonin reuptake inhibitors, benzodiazepines or trazodone if additional control of panic is required.

Side effects: Sedation, ataxia, increased agitation, anxiety, irritability and nausea.

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products

Vet2Pet

Practice app notification features

Vet2Pet has released two new features for its veterinary app platform. The first, breed-specific notifications, lets veterinarians use their practice-branded mobile app to send notifications to owners of more than 100 canine and 10 feline breeds on such topics as medical conditions, breed-specific risks and recommended diets. Another new feature, custom list notifications, enables practices to send push notifications to specific groups of clients. For example, a practice could create a list of patients that haven't had a heartworm test or a list of geriatric cats that haven't had wellness bloodwork, and send specific notifications to these groups to increase compliance.

For fastest response visit vet2pet.com

Zoetis

15-month DOI claim for Lyme vaccine

The USDA has granted approval for a 15-month duration of immunity (DOI) claim for Vanguard crLyme, the longest DOI claim of any canine Lyme disease vaccine on the market, according to Zoetis. Vanguard crLyme vaccine is a multivalent recombinant Lyme vaccine to aid in the prevention of clinical disease and subclinical arthritis associated with *Borrelia burgdorferi*, the causative agent of Lyme disease in dogs. It contains outer surface protein A (OspA) protein and a single OspC protein composed of antigenic material from seven common types of OspC found in Lyme-infected dogs in the U.S.

For fastest response visit vanguardcrlyme.com

Brakke Consulting

Veterinary oncology market report

A new study from Brakke Consulting examines the No. 1 killer of dogs and cats: cancer. In the past decade, the U.S. has gone from zero cancer therapies approved for veterinary use to more than a half-dozen, with dozens more in development, Brakke experts say. The report, "Cancer in Dogs and Cats," provides information on the incidence of cancer in pets, examines how cancer is diagnosed and treated in veterinary medicine, and offers estimated costs for treatment. It reviews FDA-approved cancer treatments now on the market along with developing veterinary cancer products, including therapies, diagnostics and supportive care. The report estimates the current sales of veterinary-approved cancer therapies and provides estimates of the total number of pets treated with chemotherapy or immunotherapy.

For fastest response, visit BrakkeConsulting.com

Henry Schein

Vaccine resource center

Henry Schein Animal Health has launched its Companion Animal Vaccine Resource Center, a web-based hub that provides veterinarians with the latest data on infectious diseases in cats and dogs and critical information about the role regular vaccinations of pets play in protecting animal and human health. The resource center features updates on the geographic expansion of canine influenza, Lyme disease and leptospirosis; vaccination guidelines from AAHA and the American Association of Feline Practitioners; information from manufacturers such as Merck, Elanco, Merial and Zoetis on product offerings, rebate programs and warranties; an interactive quiz to help veterinarians determine how their vaccination practices stack up against their peers; and a regularly updated calendar of upcoming vaccine-related events.

For fastest response visit henryscheinvet.com/companion-vaccine-education/companion-vaccination-home

Hudson Aquatic Systems

Underwater treadmill

The AquaPaws SS aquatic therapy system offers a low-impact, high-resistance therapy session, optimal training and conditioning, or workout for rehabilitation from injury. AquaPaws SS provides the natural properties of water (buoyancy, resistance and hydrostatic pressure) for a rigorous cardiovascular workout with reduced impact and stress on joints. It features a magnetic door (no handle), has a large running surface and large windows, and holds up to 30 inches of water to accommodate larger breeds. The treadmill also offers adjustable speeds for a more rigorous workout, along with several optional features like resistance jets, an incline adjustment, UV water sanitization, and a technician bench to enhance patient outcomes.

For fastest response visit hudsonaquatic.com

SunTech Medical

Blood pressure monitor

The Vet25 is designed for monitoring blood pressure in either the exam room or operating room. The Vet30 combines SunTech's blood pressure technology with oxygen saturation and temperature capabilities for monitoring before, during and after a procedure. Both monitors are equipped with the ability to program automatic readings at intervals during a monitoring period. The devices use motion-tolerant technology and SunTech's Advantage VET blood pressure measurement, an animal-specific algorithm, to provide accurate readings on both awake and sedated companion animals. The devices help manage nervous animals with extremely quiet operation and the option to turn off alarms and audible indicators. Vet25 and Vet30 are both portable and rechargeable, and use Bluetooth connectivity to transfer data to a PC application for creating reports.

For fastest response visit suntechmed.com

VetBiotek

Dermatologic shampoo

VeterGen C4 is a dermatologic shampoo for the management of conditions responsive to chlorhexidine. VeterGen C4 features a soap-free, paraben-free, antiseptic 4% chlorhexidine gluconate proprietary formulation featuring ceramide III for lipid barrier support in a Lavender Rain fragrance. It is available in 8-oz,16-oz and gallon sizes.

For fastest response visit vetbiotek.com

Addison Biological Laboratory

Oral-cavity-cleansing wipes

Maxi/Guard Oral Wipes are infused with a flavorless zinc formulation designed to neutralize mouth odors, help reduce the deposition of plaque and aid in reducing gingival inflammation. The wipes are textured to assist in the mechanical removal of plaque but won't cause damage to the gum tissue.

For fastest response, visit addisonlabs.com

Nutramax Laboratories

Joint supplement for cats

The Cosequin brand joint health support is now available in a soft chew for cats. Cosequin for Cats soft chews contain proprietary researched specifications FCHG49 glucosamine and TRH122 sodium chondroitin sulfate to help maintain joint mobility, along with omega-3 fatty acids EPA and DHA for skin and coat support. Cosequin for Cats soft chews may also help support bladder health in cats.

For fastest response visit nutramaxlabs.com

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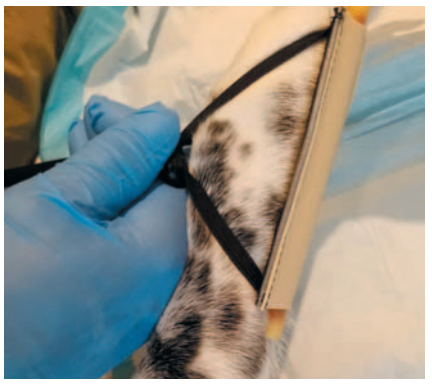

B&G Educational Innovations

VetReaLifeSim

Have no fear of blood draws with VetReaLifeSim. The simulator helps teach and assess clinical and communication skills in a variety of simulated clinical environments through lifelike skin and vein materials. It's designed to provide opportunities to practice drawing blood or starting an IV on a live or simulated animal, taking guesswork or nerves out of the equation. VetReaLifeSim comes in a variety of sizes to fit equine, bovine, ovine, feline and canine patients.

For fastest response visit bgei-educational.com

CPAC Environmental Solutions

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Unlike steam sterilizers, COX RapidHeat Sterilizers rely on rapid air flow in a highly controlled heated environment to sterilize instruments in as little as six minutes for unwrapped instruments and 12 minutes for wrapped or pouched instruments. Since COX RapidHeat does not use water, steam or chemicals, corrosion is reduced and instrument life is enhanced. COX RapidHeat Sterilizers have a history of low maintenance and repair and come with a three-year parts and labor warranty. Independent laboratory testing shows they average 84 percent less energy use per cycle than steam sterilizers.

For fastest response visit cpac.com

GingerLead

A better lead for rehabilitation harness

GingerLead's dog support and rehabilitation harnesses are used for recovery from orthopedic problems and to help senior or disabled dogs with balance and mobility. "Stay on Straps" provides a way to keep the GingerLead in place when the handle is released, offering owners a way to release the GingerLead's handle to open a door or let their dog go potty. The new Stay on Straps are double-sided Velcro strips that cinch the GingerLead straps together above the dog's back, holding the support pad in place. They are included with all medium, large and tall sizes.

For fastest response visit gingerlead.com

Zoetis

New version of antibiotic

Clavamox Chewable (amoxicillin and clavulanate potassium tablets) features a pork-liver flavor and offers a chewable alternative that is effective in treating skin infections in dogs and cats, periodontal infections in dogs and urinary tract infections in cats. This palatable, easy-to-administer formulation features the same broad-spectrum efficacy, dosing, and strengths as the original film-coated Clavamox Tablet. The chewable version, now available to all veterinarians in the United States, is available in four strengths (62.5 mg, 125 mg, 250 mg and 375 mg) and is packaged in boxes of 100 tablets.

For fastest response visit zoetisus.com

Aurora Pharmaceutical

Estrus suppressor for mares

Altren (altrenogest) Solution 0.22% is indicated to suppress estrus in mares. Suppression of estrus allows for a predictable occurrence of estrus following drug withdrawal. Altren is administered orally at 1 mL per 110 lbs' body weight (0.044 mg/kg) once daily for 15 consecutive days. Administer solution directly on the base of the mare's tongue or on the mare's usual grain ration.

For fastest response visit aurorapharmaceutical.com

Jorgensen Laboratories

Tube dressings

Dog Ends tube dressings absorb impact and allow tail tip injuries and wounds to heal naturally. The product consists of a tubular mesh dressing engineered to flex just enough to absorb impact without transmitting the force down to the injured area. The dressing takes the impact force rather than the tail tip so that normal healing can resume. Open mesh construction allows ventilation of the wound area to reduce the risk of infection.

For fastest response visit jorvet.com

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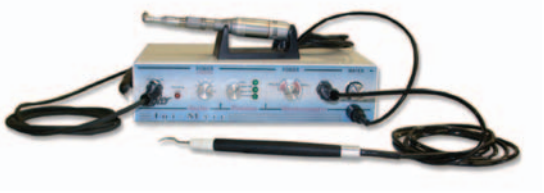

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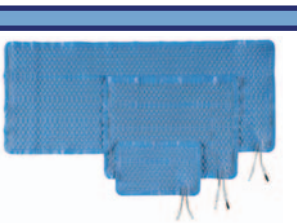

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December 7-10, 2017
Fetch San Diego
(800) 255-6864, ext. 6
fetchdvm360.com/sd

May 18-20, 2018
Fetch Virginia Beach
(800) 255-6864, ext. 6
fetchdvm360.com/vb

August 17-20, 2018
Fetch Kansas City
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Here are the CE opportunities coming in the next few months

October 7
Veterinary Dental Extraction Course
Richmond, VA
(941) 276-9141
veterinarydentistry.net

October 11-14
ACVS Surgery Summit
Indianpolis, IN
(301) 916-0200
surgerysummit.org

October 12
Indispensable Associate: Professional Skills Workshop
Buford, GA
800-883-6301
aaha.org/associate

October 13-14
How to Radiograph and Interpret them in Lame and Non-Lame Horses
Chicago, IL
(844) 870-6097
vetpd.com

October 13-15
California VMA Fall Seminar
Truckee, CA
(916) 649-0599
cvma.net

October 13-15
Fundamentals of Dentistry
Baltimore, MD
(410) 828-1001
AnimalDentalTraining.com

October 14
Abdominal, Thoracic & Soft Tissue Ultrasound
Ringoes, NJ
(844) 870-6097
vetpd.com

October 14
See the Pain, Treat the Pain
Orlando, FL
(937) 642-9813
aimla.org

October 15
Comprehensive Extracapsular Stifle Stabilization Course
Rosemont, IL
(774) 230-4195
securosuniversity.com

October 15
It's What's Up Front That Counts!
Washington, DC
(303) 674-8169
vmc-inc.com

October 17
Principles of Veterinary Practice Management
Tucson, AZ
(303) 674-8169
vmc-inc.com

October 18
2017 MVMA Fall CE Conference
Westborough, MA
(508) 460-9333
massvet.org/event/2017Fall

October 19
Indispensable Associate: Professional Skills Workshop
Dallas, TX
800-883-6301
aaha.org/associate

October 19
Principles of Veterinary Practice Management
San Francisco, CA
(303) 674-8169
vmc-inc.com

October 19-22
2017 AAFP Conference—Feline Infectious Diseases & Pediatrics
Denver, CO
(908) 359-9351
catvets.com/education

October 21-22
Feline Dentistry CE Course and Dental Extraction Wet Lab
Orlando, FL
(941) 276-9141
veterinarydentistry.net/feline-dentistry-ce-course-2

October 21-24
2017 AHVMA Annual Conference
San Diego, CA
(410) 569-0795
ahvma.org

October 22-24
Advanced Spinal Surgery 1
Las Vegas, NV
(866) 800-7326
wvc.org/course/advanced-spinal-surgery-ii

October 24
Roles of Veterinary Professionals in Cases of Animal Abuse, Cruelty, or Neglect
Madison, WI
(608) 265-5206
apps.vetmed.wisc.edu/cereg

October 26
Indispensable Associate: Professional Skills Workshop
Tampa, FL
800-883-6301
aaha.org/associate

October 27-29
Intensive Abdominal Ultrasound
Las Vegas, NV
(702) 675-7805
wvc.org/course/intensive-abdominal-ultrasound-4

October 28-29
Veterinary Dentistry For Technicians
Orlando, FL
(941) 276-9141
veterinarydentistry.net/veterinary-dentistry-for-technicians-fall-weekend-extravaganza/

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I certify that the statements made by me above are correct and complete.

Hanging out with a hero

As a teenager, Dr. Bo Brock heard tell of a giant in the equine lameness field. Decades later, he got to work with him for a week

If a basketball player got the opportunity to be coached by Michael Jordan, or a golfer got to play for days on end with Tiger Woods, that might be a bit how I felt getting to work up lameness cases with Dr. Terry Swanson in Littleton, Colorado, for a week.

Dr. Swanson's clinic had asked me to come and do surgery while waiting for a new full-time surgeon to arrive. In between my duties for the job, I had time to work with Dr. Swanson and see how my method of working up a lame horse compared with that of one of my lifelong heroes.

Let me back up a bit.

When I was 15 years old and growing up with my grandfather, my horse Sadie Jane became lame. When we took her to the local vet, he said she had navicular disease and there was nothing he could do to make her better. I had known this vet all my life and he could see that the news about Sadie broke my heart.

He told me he knew of a veterinarian in Colorado named Dr. Swanson who may be able to do something for her. I looked over at Pappaw, hoping that he'd say, "You bet, let's go," but he had that look on his face that I had seen a hundred times in my life. It was the look of reality that I wasn't going to like.

"That's 10 hours from here, Bo," he started out. "We have too much work to do to take a crippled horse to a vet so far away. And besides, it would cost too much. Vets with a name that big can't be cheap."

So that was that, but I never forgot Dr. Swanson's name or the town he lived in. I wondered what he did that was so much better than anything we had around home. What made him special with horse lameness?

Time passed and Sadie never got any better, just like the local veterinarian had predicted. I grew up and went off to college and then vet school, and still I never forgot about the expert in Littleton, Colorado. He had done something so outstanding with horse lameness that my local vet looked up to him, and I wanted to find out what it was.

Well, I found out just a few weeks ago, and Dr. Swanson never even knew that this snotty-nosed vet from Texas had been watching him from afar for decades. I stood right next to him as the first lame horse trotted off. The horse had his full attention for the next few hours while I observed him piecing together the clues it takes to diagnose and treat a lame horse.

I have always considered myself a keen observer of human nature, and it only took a few minutes for me to figure out why this man is a legend. Yes, he is very smart. Yes, he can really see even a tiny lameness. Yes, he has the most detailed and structured way of working up a horse I have ever seen. And, yes, he is incredibly skilled as a practitioner.

But the reason Terry Swanson is known around the world as a great veterinarian is because he is incredibly humble, amazingly attentive when people speak to him, interested in his clients and students, kind to the animals he is caring for, and loves what he is lucky enough to get to do every day, even at the age of 74.

He would ask me questions about the lame horse we were looking at, and, not only would he ask, he would actually listen to what I said and sometimes even thought it was a good idea. I couldn't have been more flattered than to have the only man who could have fixed my Sadie Jane 38 years ago ask me questions about what I saw on a lame horse.

All of the people at Littleton Equine Clinic were incredibly nice to me. I feel honored to have spent a week there working with some of the best equine practitioners in the world. But spending a week in the shadow of Dr. Swanson was as good as it gets. I just wish Pappaw were still here to see it all unfold. I would've made him drive 10 hours with me and spend a week at the only place that might could have fixed ol' Sadie.

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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