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Donlin becomes first woman to lead AVMA as CEO
Takes over position as association's top administrator from Ron DeHaven
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New research cited in support of change to heartworm protocol

Study examines effects of topical repellent-insecticide plus oral heartworm preventive on development of heartworm disease.

New research conducted by John McCall, MS, PhD, professor emeritus at the University of Georgia College of Veterinary Medicine, shows that topical application of dinotefuran-permethrin-pyriproxyfen (DPP), the active ingredients in Ceva Animal Health's Vectra 3D, can help block the transmission of *Dirofilaria immitis* from mosquitoes to dogs. The research was presented during a press conference organized by Ceva promoting a multimodal approach to canine heartworm prevention Aug. 6 during the American Veterinary Medical Association (AVMA) Convention in San Antonio.

"In veterinary medicine and in parasitology research, we're always on the lookout for a paradigm shift," said Byron Blagburn, PhD, parasitol-

continued on page 14 >

>>> Can drugs such as rapamycin be a way to ensure much frolicking and play continues even as dogs age?

Rapamycin: A real fountain of youth?

Not so fast, says a leader of the Dog Aging Project who is researching this new compound touted as extending life. *By Jessica Vogelsang, DVM*

Throughout the ages, man has been fascinated with the idea of cheating time, slowing the clock and edging ever more closely toward immortality. Ponce de Leon sought out the Fountain of Youth in what is now Florida. While munching on popcorn at the movies, we watched Indiana Jones find the Holy Grail in the form of a battered cup in Turkey. If you've been fol-

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kristi.reimer@ubm.com

Content Manager | **Adrienne Wagner**
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Sales

Sales Director | **David Doherty**
(913) 871-3870 | david.doherty@ubm.com
Account Manager | **Angie Homann**
(913) 871-3917 | angie.homann@ubm.com
Account Manager | **Angela Paulovcin**
(440) 891-2629 | angela.paulovcin@ubm.com
Account Manager | **Terry Reilly**
(913) 871-3871 | terry.reilly@ubm.com
Account Manager | **Heather Townsend**
(913) 871-3874 | heather.townsend@ubm.com
Digital Data Analyst | **Jenny Shaffstall**
913-871-3854 | jenny.shaffstall@ubm.com
Sales/Projects Coordinator | **Anne Belcher**
(913) 871-3876 | anne.belcher@ubm.com
Books/Resource Guide Sales | **Maureen Cannon**
(440) 891-2742 | maureen.cannon@ubm.com

Marketing

Marketing Director | **Brenda Andresen**
brenda.andresen@ubm.com
Marketing Designer | **Andrew Brown**
Marketing Copywriter | **Tim English**

UBM Americas, Veterinary

Vice President & Managing Director | **Becky Turner Chapman**
913-871-3810 | becky.turnerchapman@ubm.com
Vice President, Digital Product Management | **Mark Eisler**
Group Content Director | **Marnette Falley**
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Suspend Kristen Lindsey's license, judges recommend

Veterinarian in bow-killing case will also complete continuing ed, community service if Texas board accepts judges' proposal. *By Katie James*

Administrative law judges have recommended license suspension for Kristen Lindsey, DVM, the controversial veterinarian at the center of a bow-killing case, according to court documents filed on August 15.

In addition to a five-year license suspension, the judges recommend that four years of that suspension be fully probated with quarterly reporting, required continuing education in the areas of veterinary jurisprudence and animal welfare, or other such classes the board deems fit. The judges are also recommending at least 100 hours of community service at a feline rescue, free spay-neuter clinic or similar facility.

The judges found that the Texas Board of Veterinary Medical Examiners (TBVME) established that Lindsey did kill an owned cat without the permission of its owner, her conduct was "reckless," and the defenses of "deprecation and justification are unavailable," the judges' proposal for decision reads. It also notes that Lindsey's actions were connected with the practice of veterinary medicine through her Facebook post and therefore she may be sanctioned under appropriate board rules.

The judges conclude that Lindsey's actions are "mitigated by the fact that Tiger died instantaneously and did not suffer and the opinion of Tiger's owners that [Lindsey] should be allowed to learn and build her character from this experience." A lack of prior misconduct or crimes, strong academic and work record prior to the incident, and split opinions among the veterinary profession in regard to the treatment of feral cat populations also led to the recommendation for suspension vs. revocation of Lindsey's license, the decision states.

This decision comes after Lindsey's motion for a partial new trial was denied in July. From here the TBVME and Lindsey's lawyer will have an opportunity to file a response to the judge's decision, which the judges will then review and make any changes, if necessary. That finalized decision will then be presented to the full TBVME at its next meeting, which could be as early as October 18, according to a statement on the TBVME website.

Elsewhere in dvm360

A group of concerned veterinarians offer compassion in their open letter to Kristen Lindsey. **See page 18.**

The case involving Lindsey began in April 2015 and centers on a graphic photo she posted on her Facebook account with a caption that bragged about shooting a cat with a bow and arrow.

"My first bow kill ... lol," the post read, accompanying the photo of the veterinarian smiling and holding the cat by an arrow that appeared to be shot through its head. "The only good feral tomcat is one with an arrow through it's [sic] head! Vet of the year award ... gladly accepted."

A grand jury didn't find sufficient evidence to charge Lindsey with animal cruelty, but the TBVME found her in violation of the Veterinary Practice Act and started the process to revoke her license. **dvm360**

Donlin becomes first woman to lead the AVMA as CEO

Takes over position as association's top administrator from Ron DeHaven.

Janet Donlin, DVM, CAE, has been named executive vice president/CEO of the American Veterinary Medical Association (AVMA). Donlin succeeds Ron DeHaven, DVM, MBA, who is retiring after nine years with the AVMA, according to an association release. She is the first woman to be named to the position and will begin on September 12.

Donlin has served as the CEO of the AVMA Professional Liability Insurance Trust (AVMA PLIT) since 2013. Newly instated AVMA President Tom Meyer, DVM, says Donlin's long service to the profession and her extensive professional achievements were key factors in her being named to the position.

"Dr. Donlin is one of the true champions of veterinary medicine and all it stands for," Meyer says in the release. "She has an outstanding record of success in both the veterinary association arena and in the animal health industry. She is a skilled strategist with a proven background of diverse AVMA experience and a known reputation for working with leaders from all segments of the veterinary profession, key stakeholders and staff members to drive innovation, growth and success."

Donlin began working with the association in 1991 as an assistant director in the division that was called the AVMA Scientific Activities Division at the time. In the 17 years that followed she served as interim division director, associate executive vice president and assistant executive vice president. Donlin also served as the interim CEO of the National Commission on Veterinary Economic Issues from 2000-2001, where she oversaw the establishment of the commission as a nonprofit organization.


Dr. Janet Donlin

"My time at the AVMA and my experiences across the profession have reinforced for me time and again that our membership is very diverse, our needs are constantly evolving and our profession continues to face new challenges and opportunities," Donlin says. "That's why I'm committed to making certain we continue to build on the AVMA's core strengths so that we are even more responsive to the needs of our members, and that we advocate with a strong, clear voice on behalf of our entire profession."

Prior to her work with AVMA PLIT Donlin served as chief veterinary officer for the global veterinary business channel of Hill's Pet Nutrition. She received both her DVM and BS degrees from the University of Minnesota and is also a graduate of the veterinary technician program at the Medical Institute of Minnesota. Besides the AVMA, Donlin is a member of the American Animal Hospital Association, the American Association of Bovine Practitioners, the American Association of Equine Practitioners, the American Association of Swine Veterinarians, the Illinois State Veterinary Medical Association, the American Society of Association Executives, and the American Association of Corporate and Public Practice Veterinarians.

Donlin is the first veterinarian to earn the certified association executive credential from the American Society of Association Executives. She is a former trustee of the AVMA's Group Health Life Insurance Trust (now known as AVMA Life), and she is a former board member of the American Association of Corporate and Public Service Veterinarians, according to the AVMA. **dvm360**

Council on Education affirmed as accreditor

Controversy delays U.S. Department of Education approval for 3.5 years.

The National Advisory Committee on Institutional Quality and Integrity (NACIQI), a committee of the U.S. Department of Education (USDE), has recommended continued recognition of the American Veterinary Medical Association Council on Education (AVMA COE) as the accrediting body of veterinary medical colleges through next year, according to a release from the AVMA.

The COE's last five-year recognition was granted in 2007. In 2012, amid criticism from a group of veterinarians focused largely on the accreditation of schools with a distributive model of clinical education and "cronyism" among members of the council and AVMA leadership, the USDE staff identified several compliance issues that needed to be addressed. The agency subsequently provided several extensions of recognition pending appropriate responses from the COE.

In June, the USDE Staff provided a report to NACIQI stating that the previously identified issues had been satisfactorily resolved and recommended continuation of the COE's recognition through the end of this five-year cycle (2017), according to the release. The next step is for the U.S. Secretary of Education to formally accept the recommendation.

"This is great news for the hard-working members of the COE, who have diligently listened to criticisms and responded where appropriate with new policies and procedures to further reduce the potential for conflicts of interest between the COE and AVMA leadership," says Andrew T. Maccabe, DVM, MPH, JD, executive director of the Association of American Veterinary Medical Colleges (AAVMC), in an association release.

In its attempts to listen to and answer its critics, the COE has worked with the University of Illinois to formally query 15,000 stakeholders, engaged in large-scale digital outreach, and held a series of listening sessions at major veterinary conferences, the AAVMC states. As a result, the council has developed new policies and procedures to strengthen the firewall between the COE and AVMA leadership, among other changes.

In its listening session Aug. 7 in San Antonio, COE leaders reported that a working group was examining the distributive model of clinical education and would report on its findings in September. "Even a college with a teaching hospital sends students out for certain aspects of their education," said incoming COE chair John Scamahorn, DVM. "We are looking to ensure parity across the system."

Other groups are examining diversity in the profession and financial literacy among graduates, Scamahorn said. **dvm360**

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Plans for new vet school in Arizona grind to a halt

AVMA Council on Education tells University of Arizona it needs more details; interim dean says the info is already there, school will appeal.

By Brendan Howard,
Business Channel Director

>>> An architect's rendering of the facility for the proposed veterinary school at the University of Arizona.

The University of Arizona is appealing a decision by the American Veterinary Medical Association (AVMA) Council on Education (COE) to deny a "letter of reasonable assurance" giving the go-ahead to a second veterinary college in Arizona.

The new veterinary program, which is is modeled after international schools that graduate students within a total of five or six years (vs. four years of undergraduate and four years of graduate schooling) had been scheduled to open as early as August of this year.


Dr. Shane Burgess

Shane Burgess, BVSc, PhD, the interim dean for the prospective school, says the evidence that the COE asked for already exists in the school's self study, the COE site team's preliminary report and the school's response to that report.

"I don't want to second-guess what the COE members' thought processes were or affect the integrity of the appeal process," Burgess says. "The AVMA sets standards, we fully understand the need for those, and we believe we've demonstrated that we met the standards and to a level of reasonable assurance."

Burgess and the university staff are seeking to create a less expensive, year-round program to graduate veterinarians on an accelerated schedule. The program would put to use new and existing faculty and give students practical learning opportunities in an envisioned Oro Valley Veterinary Clinical Skills Training Facility as well as as practice opportunities in nearby areas.

"We believe a leading public-research, land-grant university needs to step up and lead on the issue of [graduates' debt-to-income crisis]," Burgess says. "In our view, academia bears much of the responsibility to fix this issue." However, in an AVMA letter Burgess provided to dvm360, the COE outlines several reasons it believes the school's current plan falls short:

> Financial details. The letter says the COE needs more details about "all sources of income" and major sources of funds for the school, including specifics on revenue from clinical practice partnerships as well as the exact size of awards from the state of Arizona.

> Access to sick animals. The university "appears to provide exposure to adequate numbers of healthy animals" for students' clinical experience, according to the letter, but "fails to provide the details for the number and species of diseased animals," especially in specialty practices.

> Full access to medical records. The COE wants more information on how veterinary students will have access to the prospective school's new medical records system while working in private practices.

> Number of faculty. The letter asks for more evidence that faculty will have "the appropriate time to develop and deliver the new curriculum, and concurrently fulfill requirements for scholarly activity."

> Opportunities for specialty practice. For students pursuing fourth-year specialty work, the school plans to contract with off-campus specialty practices, according to the letter, but "how students will participate ... is not defined."

> Time for faculty research. Veterinary colleges are required to "establish a substantial, high-quality research program," according to the letter, and the current plan leaves unclear precisely how students and faculty will participate in the University of Arizona's existing research program. "The plan fails to describe how [veterinary school] faculty will demonstrate continuing scholarly productivity when the majority of research will be performed in other colleges" at the university.

The University of Arizona has until mid-September to submit documentation supporting its appeal. The new school in Tucson, Arizona, would be the state's first public veterinary school but its second total, joining private Midwestern University in Glendale, Arizona, 130 miles away from the University of Arizona. dvm360

Elsewhere in dvm360
How many veterinary schools is too many? A couple of AVMA economists tackle this question on **page 23.**

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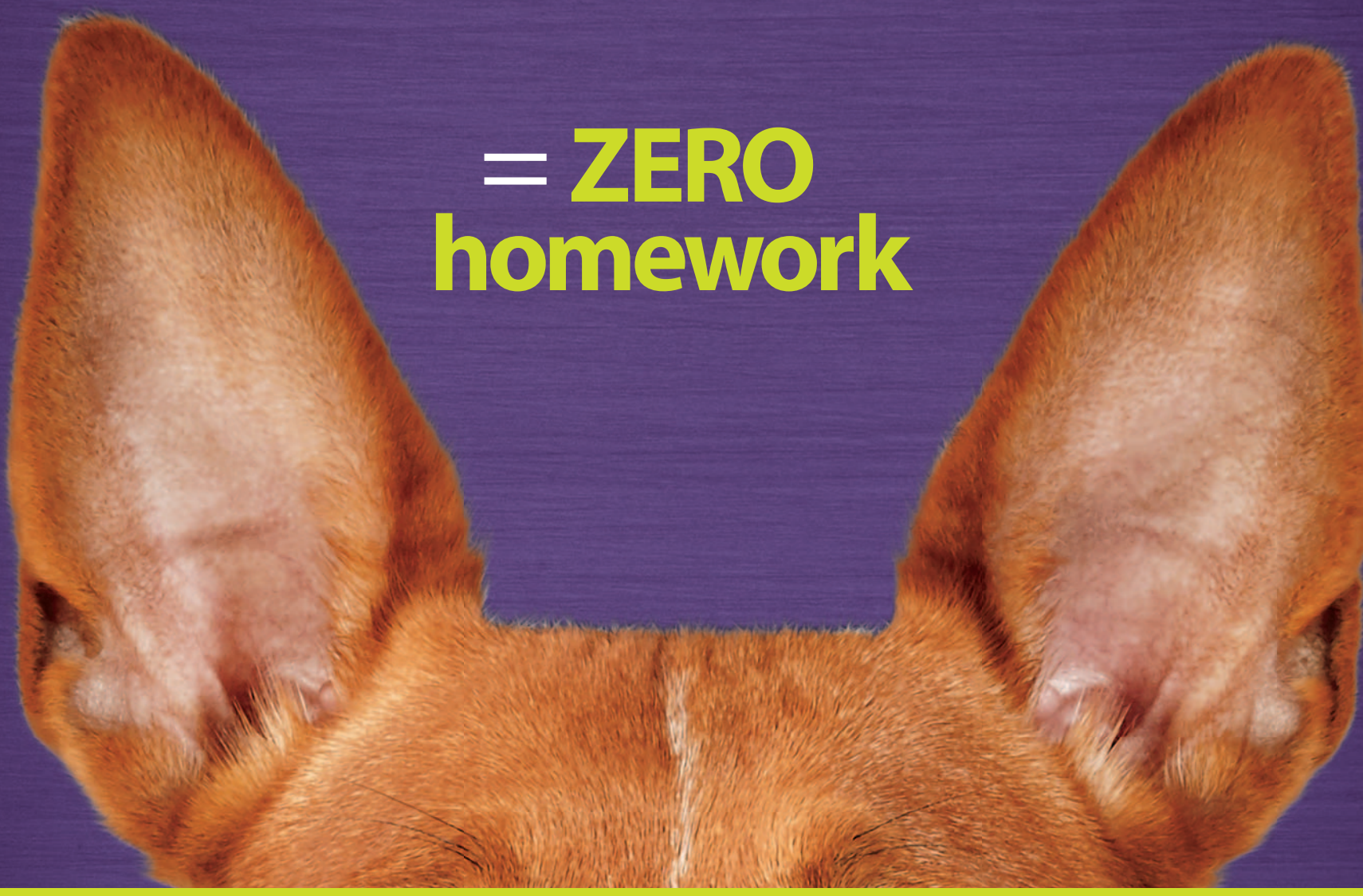

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See brief summary on page 08

Study shows there's no cure for the English bulldog blues

UC Davis researchers say the lack of genetic diversity in English bulldogs is concerning for the future of the breed.

They can't fit through their mothers' birth canals. They're plagued by serious respiratory problems because they are brachycephalic. They die at a median age of a little over 8 years of age. Won't someone help the hapless English bulldog?

In a recent study from the University of California, Davis, researchers examined the DNA of 102 registered English bulldogs predominantly from the United States and 37 English bulldogs seen at UC Davis for various health issues and found there is no going back to a healthier conformation.

"We were taken back by how little 'wiggle room' still exists in the breed for making additional genetic changes," says the lead researcher of the study, Niels Pedersen, DVM, PhD, of the UC Davis Center for Companion Animal Health, in a release.

English bulldogs are plagued not only by brachycephalic syndrome, which has been bred into them for five centuries to create their characteristic smushed faces. In addition, English bulldogs are prone to flat chests, splayed legs, cleft palates, chondrodysplasia (causing hip and elbow dysplasia and other joint and spinal problems), and dental, skin, heart, ocular and immune system problems.

Pedersen says breeders have been trying to alleviate this situation, but the DNA analysis shows that matching an English bulldog with any another English bulldog is likely to result in these same health problems. Possibly the only way to make them healthier is to introduce a different breed to bring in some genetic diversity.

"We definitely would question whether further attempts to physically diversify the English bulldog—for example, by rapidly introducing new, rare coat colors, making the body smaller and more compact, or adding further wrinkles in the coat—are going to improve the already tenuous genetic diversity of the breed," Pedersen says. **dvm360**

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Rainbow bridge OR BUST: Pets and the afterlife

According to a study by NC State, your veterinary clients' beliefs in an afterlife for their pets could shape how well you interact with them in your practice.

A personal belief in an afterlife for humans is likely to shape belief in an animal afterlife, according to a study by three North Carolina State University College of Veterinary Medicine professors.

NC State's Department of Clinical Science professors Kenneth D. Royal, PhD, MSEd, April A. Kedrowicz, PhD, MS, and Amy M. Snyder, DVM, MBA, found that of the 800 participants in the study—titled "Do All Dogs Go to Heaven?"—who believed in human afterlife, 73 percent also believed in animal afterlife.

Of the research participants, the groups more likely to believe in the existence of an afterlife for animals were females (51 percent), American Indian/Alaska natives (71 percent), African-Americans (59 percent), Buddhists (77 percent), people living in the South (50 percent) and pet owners (45 percent).

The study, set to be published this month in the journal *Anthrozoös*, is believed to be the first to systematically explore American's beliefs about the animal afterlife using a national sample of participants, according to a release from NC State.

"The notion of the human-animal bond is pervasive in the United States," says Royal in the release. "Yet Americans are incredibly diverse in terms of their backgrounds, experiences and views. We wanted to explore this issue further by investigating the role that one's religious views might have in understanding this relationship and the value of pets."

Of the 12 animals presented to the research participants, dogs, cats and horses were rated the most likely to experience an afterlife. Those rated least likely? Insects, fish and reptiles.

While the study found widespread belief in an animal afterlife, participants were less certain when asked whether animals had souls: 16 percent stated "definitely no," 17 percent stated "probably no" and 20 percent were "unsure," compared with 26 who stated "probably yes" and 22 percent who said "definitely yes."

Such findings could help guide veterinarians in their interactions with pet owners.

"Spirituality and beliefs about animals, including animal afterlife, undoubtedly impact what clients think, how clients feel and what decisions they make. So veterinarians should explore and acknowledge client perspectives to build trust and actively engage them in the process of animal care," says Kedrowicz. "This requires an open approach to communication where the veterinarian asks clients to provide their perspectives with a focused attention to listening and exploring client meanings." **dvm360**

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Heartworm research

> Continued from the cover

ogy professor and researcher at Auburn University, during the press conference. "This research by my friend and mentor John McCall represents just such a paradigm shift."

McCall's research was the second phase of a study that, according to Ceva, supports a "double defense" protocol that protects dogs against the heartworm vector—the mosquito—as well as the heartworm itself. This protocol involves use of a topical repellent-insecticide product (DPP, which is indicated for prevention of flea and tick infestations) plus an oral heartworm preventive such as milbemycin oxime. The first phase of the study, presented in March at the Western Veterinary Conference, demonstrated that DPP helped prevent the transmission of heartworms from infected dogs to mosquitoes.

In the most recent study, according to McCall, 32 uninfected dogs were divided into four groups of eight: one group treated with DPP only, one with DPP plus milbemycin oxime, one with milbemycin oxime only, and one with nothing. The dogs were then put into contact with mosquitoes infected with *D. immitis* strains resistant to milbemycin oxime, which are known to be infecting dogs in the Mississippi Delta region of the United States. Results can be found in Table 1.

"This is a new area to explore in veterinary medicine, and I am very excited about the results," McCall said in a release from Ceva. "After fighting heartworm the same way for decades, it's time for a new approach, and that includes fighting the mosquito as well as the heartworm."

Christopher Rehm, DVM, incoming president of the American Heartworm Society and a practice owner in Mobile, Alabama, said during the AVMA press conference that the new research was a "protocol changer." "Multimodal therapy is nothing new to veterinary medicine," Rehm said, "and it's about time heartworm caught up with that."

Rehm says that even though it's "easy" for veterinarians to kill heartworms in infected animals, doing so makes animals sicker in the short term, and necropsies of animals years after treatment can reveal petrified worms in "unbelievable places—around the valve of the heart, in major arteries and so on," Rehm says. Therefore prevention is vastly preferable to treatment.

According to data from the Companion Animal Parasite Council (CAPC), the incidence of heartworm disease continues to increase nationally. From 2013-2015, there was a 166 percent increase in reported positive heartworm cases, CAPC reports. In addition, the American Heartworm Society has tracked the geographic spread of heartworm disease to all 50 states and its increased prevalence in several regions of the country.

On a more micro level, the eggs laid by a single female mosquito that lives two weeks and takes four blood meals in that period can produce more than 800,000 mosquitoes in the next three months, according to calculations performed by McCall—"and those are conservative figures," he says.

More information on McCall's research and Ceva's Double Defense campaign can be found at fightheartwormnow.com. **dvm360**

Table 1

Groups (eight dogs each)	Average number of infective larvae transmitted per dog	Number of dogs that developed adult heartworms	Average number of adult heartworms per dog
Control	76	8	41
DPP only	2	3	1.5
Milbemycin oxime only	78	8	17.1
DPP plus milbemycin oxime	1	0	0

Rapamycin: The fountain of youth?

> Continued from the cover

lowing the news lately, you might have come across a new narrative—that a team of researchers at the University of Washington are hoping to unlock the secret to eternal dog life using rapamycin, a compound discovered under the mysterious looming totems of Easter Island.

But Matt Kaeberlein, PhD, an expert on the biology of aging and one of the primary researchers of the Dog Aging Project, really hopes you don't look at it quite like that. Science, after all, isn't usually that melodramatic.

A brief history of rapamycin

Rapamycin had its humble beginnings as an antifungal metabolite isolated from the bacterium *Streptomyces hygroscopicus*, an organism found on the island of Rapa Nui, also known as Easter Island, a territory in the Pacific Ocean. After a brief period of investigation as an antifungal medication, rapamycin truly came into its own when it was found that the compound had strong immunosuppressive properties. In 1999, the drug was granted approval by the Food and Drug Administration and entered service as a treatment for transplant rejection.

The immune system, as all people in the medical field are well aware, is complex and multifaceted. Drugs that affect one immune function in one area may have different effects up or downstream; such is the case with rapamycin. In 2006, a study published in *Genes and Development* showed a dose-responsive increased lifespan in yeast organisms, an effect repeated on advanced age mice in 2009, adding an average of 9 to 14 percent to their maximum lifespan.

Encouraged by these promising early results and motivated by his own two dogs, Kaeberlein and his colleague Daniel Promislow, PhD, decided to launch the Dog Aging Project to see if the same effects extended to canines. And that's when things got interesting.

The dawn of the Dog Aging Project

The Dog Aging Project has two components: a large-scale, longitudi-

nal study of aging in pet dogs, and a rapamycin intervention trial. Although the media attention has been focused on the rapamycin component of the project, Kaeberlein is equally excited about the longitudinal study of aging. While similar aging studies have taken place in the human population, the canine's shorter lifespan means more information can be obtained in a shorter period, with the potential to benefit both people and dogs.

In this respect it bears some similarities to the Morris Animal Foundation's Golden Retriever Lifetime Study, and Kaeberlein notes the researchers at that group have been generous in offering advice while structuring this project. In other respects, this study will be breaking new ground. Dogs of all breeds and ages will be enrolled, with the goal of identifying environmental as well as genetic factors that contribute to longevity and the onset of age-related disease.

The second arm of the project is the rapamycin intervention trial, which recently wrapped up its first 10-week phase in middle-aged dogs. Of the initial 40 dogs, some were eliminated because of subclinical cardiac disease, resulting in 24 dogs that completed the full 10 weeks. "The goal of the first phase was proof of principle—that we could handle dosing appropriately," says Kaeberlein. "We saw improvements in left ventricular function in mice, and we saw some in dogs as well. That was encouraging."

The second phase of the project intends to enroll a larger group of middle-aged healthy dogs into a long-term, low-dose rapamycin regimen. Kaeberlein is measuring four age-related parameters as indicators of health: immunity, cancer incidence, heart function and cognitive function. While aging is a complicated process and rapamycin's exact mechanisms are not fully understood, we do know that rapamycin targets a protein known as mTOR, which plays a large role in multiple pathways on a cellular level.

A 2013 study published in the journal *Cell* found nine hallmarks of aging that occur as organisms age. "There are three or four hallmarks that mTOR seems to affect," says Kaeberlein. "We know that rapamycin is hitting on a few of those. It improves mitochondrial function." But the real goal, says Kaeberlein, "is to maximize the healthy years of life."

"We're not trying to help people live forever ..."

As one might expect with such compelling headlines as "Meet the senior dogs trying the latest anti-aging pill," the response to the Dog Aging Project was immediate. "It was a little surprising when we first started planning this thing," says Kaeberlein with a laugh. "We had a very small meeting in Seattle, and within a week we had an article in the *Seattle Times*, and another in Britain."

It is both a blessing and a curse, as Kaeberlein found out, when the topic at hand is aging. In a soundbite-ready world of cryogenics, where aging is viewed as either an enemy to be conquered by science or an inevitable consequence of life to be embraced as-is, Kaeberlein treads the middle ground.

"I think there's a lot of fear of the unknown out there," Kaeberlein says. "There's a gut reaction that aging isn't something we should mess around with." Even the phrase "anti-aging" is loaded. "There's an association between anti-aging and some fringe elements," he says, which is why he prefers to think of his work as preventive medicine.

Instead of looking at his research as trying to add years, he emphasizes that his work aims to improve health. Whether a doctor is researching cognitive decline or aging, he says, "the goal is the same. The goal of trying to treat Alzheimer's disease is the same (as mine)—to help people live healthier, longer lives. I think people want biomedical research to try and help accomplish that goal.

"It's a matter of explaining it to people in a way they'll understand," he continues. "We're not trying to help people live forever. One of the things that people don't necessarily realize—the medical community has done a good job of keeping people alive longer, but it's a little unclear as to whether people are *healthier* longer. Quantity of life has improved, but has quality of life?"

The goal in this case is not to help an 80-year-old live to 120, but rather to help that 80-year-old spend a greater portion of his lifespan in good health. If he ends up getting a few more years out of it, that's an added bonus. To Kaeberlein, the benefit to dogs is an excellent endpoint in and of itself, but it's also only the beginning. If his research can help reduce the amount of time a senior dog spends suffering from age-related dementia or cancer or heart disease, by expanding his healthy lifespan by 20 to 30 percent, who knows how that might apply to people?

The goal in this case is not to help an 80-year-old live to 120, but rather to help that 80-year-old spend a greater portion of his lifespan in good health. If he ends up getting a few more years out of it, that's an added bonus.

Some of the misconceptions Kaeberlein faces are long-rooted, but he's optimistic people will be able to differentiate what he's doing from some of the less evidence-based "anti-aging" products out there in the world. "It is frustrating, but I recognize this has been going on forever. People will always try to sell people on miracle cures," he says. "The bigger challenge is that so much of the (research) funding has gone to these disease-specific projects. It's only been in the last five to 10 years that we have potential translational approaches. There's a momentum shift that is occurring."

In the canine world, it already has. After a piece about the Dog Aging Research Project ran in the *New York Times* in May, a good number of letters to the editor said they would not want to take a drug such as rapamycin, even if it adds years to their life. But, they added, they'd gladly give it to their dog. **dvm360**

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

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An open letter from concerned veterinarians to Dr. Kristen Lindsey

These doctors reach out to veterinarian embroiled in cat bow-hunting scandal.

Editor's note: *The following letter was a collective effort from veterinarians via Facebook to send a message to Kristen Lindsey, DVM, the Texas veterinarian infamous for shooting a cat with a bow and arrow. Lindsey filed a motion for a partial new trial that was recently denied.*

Also, a number of veterinarians originally signed this letter with their full names; however, after they received backlash on social media that included death threats, the editors and authors together decided to use initials for all signatories out of concern for personal safety.

Dear Dr. Kristen Lindsey: The most important trait of any veterinarian is compassion, and we extend our compassion to you. As much as we find your behavior unacceptable for a professional in our field, we can still support you as a person.

As veterinarians, we consider life sacred and suffering abhorrent, including yours. Our profession is already fighting to maintain integrity in the public's eye, and the veterinary community is now wrestling with the ethical issues—and clients' subsequent reactions—raised by one of "us" being proud of killing a cat using a method not listed in the AVMA guidelines. Indeed, many supporters of this letter wish to remain anonymous so that they are not associated with these practices. Still, there are larger issues which we hope to address with you in this writing.

Our profession's suicide and mental illness rates rank among the highest in the United States, and even the world. The fact that public shaming, like that aimed to you, can have serious effects on a person's mental and emotional stability has not escaped our notice, especially given the all too recent links shown between bullying (cyberbullying and other forms) and the preventable loss of our colleagues. Because of this we are concerned for your well-being, and urge you to seek help as necessary. While we cannot speak for you in any legal matter or otherwise—even if that means the veterinary profession may not be in your future—we hope that you find the support you need to emerge from this as a wiser, stronger and more effective member of the community.

You matter. We are here for you should you need a supportive or empathetic ear.

Signed by: Drs. MMK, DD, LB, JM, EA, DLB, CD, SS, AMvH, MK, MSH, RH, EKB, EE, EA, JGNM, LW, LS, BE, RS, CGN, KF, LPO, CR, NL, CR, LCH, SH, MEB, LTG, EA, RV, KWW, AW, DA, JLP, MML, HL, JP, BRP, JS, MvCP, LN, KS, KC, SA, CG, JH, JG, MS, BB, AG, JS, VH, LS, AHW, PG, CS, TKSR, JE, LP, CR, TKK, EKB, MD, JM, AH, NS, LE, ZJ, JT, CMC, MD, KN, MEG, VMG, KAP, KHP, MED, TMD, JMM, CLS, JCK, KPR, MYR, RAV, RO, KK, LAB, MSR, AIN

When the practice owner is the dark shadow

If we're all watching for drug abuse and drug diversion in the veterinary practice, what happens to the associate or team member whose boss is the offender?

The veterinary literature is replete with information and tips on better drug inventory to prevent theft and abuse as well as pre-employment and employee drug testing, establishing controls, locked and limited storage and access to drugs, reconciling daily counts, and employee guidelines and policies. The gist of these articles can be summed up in this quote from Dr. Jon Geller in the July dvm360 article "Dark shadows: Drug abuse and addiction in the veterinary workplace": "Don't believe you could ever have a problem with drug addicts in your hospital? Are you so certain you're so skilled an employer that you would never hire a drug user?"

Drug abuse and addiction by employees is a bona fide issue and a topic affecting this profession, but the other side of the coin is this: What if the diverter of prescription and controlled drugs or the abuser of the drugs or alcohol is your boss ... the practice owner ... the person who hired you? This can be a terrible dilemma for the unsuspecting new graduate and job seeker who moves 1,000 miles and finds out about the boss's problem after a few months on the job. How do you


dvm360 Find it all here.

Veterinarian in Texas bow-killing case files motion for partial retrial
Kristen Lindsey moves to strike feline expert's testimony
page 8

85 OSU veterinary students disciplined for cheating
Incident opens discussion on academic misconduct in the digital age and the increasingly blurred lines between cheating and collaboration. *By Rachael Zimlich*

Eighty-five students are under fire at the Ohio State University (OSU) College of Veterinary Medicine for engaging in "unauthorized collaboration on take-home examinations," according to a statement from OSU. This large-scale violation of the school's honor code may have rippling effects for the rest of the 650-student veterinary college.

The investigation was launched after the veterinary college found inconsistencies in student test-taking practices on take-home examinations completed online through a software application offered by the college.

See page 24>

Dark shadows
Drug abuse and addiction in the veterinary workplace
Whether it's suicidal thoughts or drug addiction haunting our colleagues, are we doing enough to protect them from themselves ... and offering them the resources to get the help they need? *By Jon Geller, DVM, DABVP*
See page 26>

Early neutering poses risks for German shepherds page 6
While Dr. Codger's away, Dr. Greenskin will pay page 38
Feline enrichment: What a cat wants, what a cat needs page 52
Could leptospirosis be headed to a town near you? page 57

vet a boss before agreeing to be hired? Do both of you get a pre-employment drug test at the same time?

A distinguished colleague informed me that treatment programs for substance-dependent practitioners are available in most states, with rehabilitation and return to productive life as the goal. But a new grad may not be capable of stepping up adequately to keep the practice from closing while the boss is in rehab. Mentoring is often crucial at that stage.

There are other problems as well. Could a veterinary associate be out of a job after reporting the boss, presumably anonymously? If an associate doesn't report, will he or she be out of a job when the boss disappears, perhaps in deep trouble with the DEA and who knows who else?

I'd worry about my personal and professional liability and being associated with my employer's unprofessional, possibly malpractice-worthy actions and behaviors. An associate could wind up with a career black mark as a squealer. Retaliation, actual and legal, would be a distinct possibility, and so would repurcussions if you decided to "see no evil, hear no evil, speak no evil" and got caught. It's never easy to be a whistleblower.

Perhaps if this profession begins to remove this issue from the shadows and abolishes the stigma, we can begin to discuss and find answers and stem the brain and skill drain on our wonderful profession.

—Name withheld upon request

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>>> Nestled inside a strip mall, Finan Animal Hospital's space was previously a mattress store. Owner April Finan, DVM, said this was ideal as it gave the team a large, empty area to design from scratch.

Color your **clinic happy**

This solo female pratice owner in Darien, Illinois, will inspire you to design or remodel your veterinary hospital to match your personal style. *By Ashley Griffin*

>>> With bold purple accents ❶ and hanging ball light fixtures ❷, clients are in for a bright and cheery welcome. The large front window ❸, wood grain porcelain floor tile ❹ and chair rails made of reclaimed barn wood give the clinic a natural, homey feeling. Front desk features include a recessed, walk-on pet scale, knobs for dog leashes and interior signage that's impossible to miss.

April Finan, DVM, wasn't afraid to get a little crazy with her new clinic—at least when it came to the color palette.

"My personality is a bit funky and eclectic. I wanted to combine that feel with keeping things very clean and open," Finan says. "I didn't want people or pets to feel like they were in a clinical setting." Her vision of bright red, orange, lime green and "Plum Dandy" (Sherwin Williams code for purple) walls in the conversion of Finan Animal Hospital in Darien, Illinois, paid off. Clients have told her, "Your hospital is so nice, I'd like to live here!" and she took home a Merit Award in the 2016 *Veterinary Economics* Hospital Design Competition.

Now, let's get inside her head and take home some funky tips you could use to make your veterinary hospital stand out.

Bye bye, beige

From the start of the project, Finan knew she wanted to design a modern

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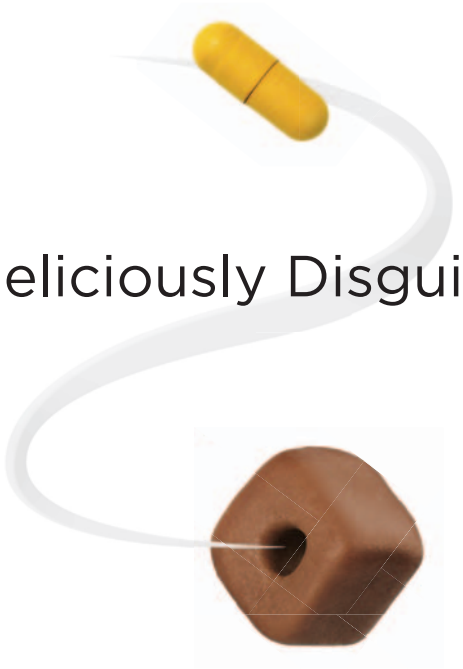

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>>>The colorful accent wall brightens up the surgery room, but that's not Finan's favorite feature: "The new LED surgery lights are great. They're bright and don't heat up the surgery suite."

>>>Two exam rooms exit to the treatment area, and there's a viewing window from the doctor's office into treatment. There's also built-in shelving, plenty of cabinet storage, staff workstations and, best of all, a skylight. Finan calls it a must-have: "I wanted my staff to have lots of sunlight to keep spirits high. Natural light and high ceilings make a small space feel much bigger."

>>> Finan made sure her style was well represented in the new clinic: "We incorporated little touches to add some of my own personality: brightly colored accent walls, eclectic light fixtures and large colorful paintings." These paintings can be spotted throughout the clinic.

clinic with fun, bold colors. However, her expert consultants weren't.

"At first my interior designer was a little worried about my color choices," Finan admits. "But it all turned out beautifully—we're always receiving compliments on our choice of paint colors."

If you want to brighten up your clinic but don't want to overwhelm a room, take a cue from this practice team and add accent wall colors throughout your hospital. At Finan Animal Hospital you can find a purple wall behind the reception desk, a red one in surgery, lime green in the treatment area and so on. "I wanted bright, vibrant accent walls to contrast with the more neutral colors in the rest of the hospital," Finan says. "The color palette and my custom artwork really give the clinic my own signature."

Reuse and repurpose

Finan Animal Hospital's current space, located in a commercial strip mall, used to be a mattress store. Finan says this was ideal, because the building was one large, open space with no walls. More positives came from what previous tenants left behind: a staff bathroom, an HVAC unit and leftover light fixtures were all salvaged and repurposed in the new clinic.

"The flooring in the mattress store was hardwood in great condition, so we removed it carefully and donated it to Habitat for Humanity," she says.

Drive a hard bargain

Taking on your first hospital project can be stressful to say the least. However, Finan quickly learned when to ask for help, when to do her own research and when to stick to her guns. Her No. 1 piece of advice? Hire a construction management team with experience building an animal hospital.

"It made the process so much easier—they knew what brand of cages were the sturdiest, what type of flooring held up best against sharp nails and daily mopping, and what building specifications I'd need for AAHA certification," Finan says.

She also recommends researching veterinary equipment ahead of time so you know what you want and where to get it early in the construction process. That way when your contractor tells you he's ready for the surgery lights, you have them ordered and ready.

"My last piece of advice: Everything is negotiable," Finan says. "As a solo female owner, it was important to me that I was firm in my negotiations and assertive when necessary."

To see a full photo gallery of this hospital, visit **dvm360.com/Finan**. dvm360

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

>>> Finan thought about her patients first in her hospital design, especially when it came to separate dog and cat wards. "The cat and dog wards are located on opposite sides of treatment to keep stress to a minimum," she says. Her big piece of species-friendly advice? Soundproof your wards and install plenty of ventilation to keep the air circulating.

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AVMA EYE ON ECONOMICS

Michael Dicks, PhD

Law or vet school grads: **Who's got it worse?**

Veterinary economists weigh costs and benefits of both degrees to determine how many graduates is too many for these similar industries.

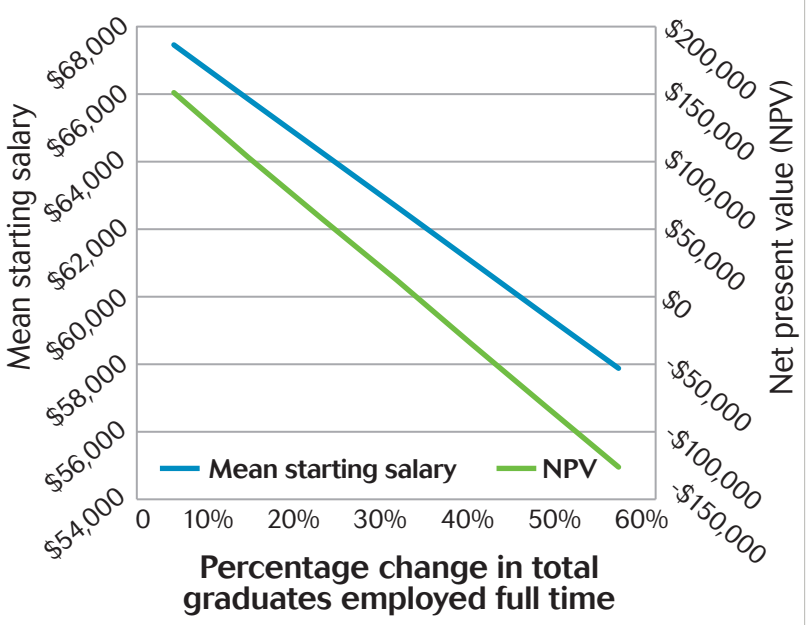
By Sean Barker

A law school graduate and friend of mine called me recently to vent. Even though he was in the top 10 percent of his class, had several internships and had passed the bar in multiple states, he couldn't find a job. So I researched the current U.S. labor market for attorneys using data from the Bureau of Labor Statistics and the National Association for Law Placement (NALP). This research showed the number of law school grads exceeds the number of positions by a ratio of more than two-to-one. The average wage earned by new law school grads is low, and the underemployment rate is high.

We've battled with the perception of "too many" veterinarians in recent years, but do we know how many veterinarians would need to graduate in a single year to be "too many"? To answer this question, we employed the concept of net present value (NPV) for veterinary school graduates, as described in the 2015 AVMA Report on Veterinary Debt and Income. NPV provides a measure of the relative current value of a stream of benefits and costs over a specified period of time. A positive NPV indicates that the financial benefits of obtaining a DVM degree are greater than the costs, whereas a negative NPV indicates the costs exceed the benefits. Using this approach, "too many" veterinarians would be the number of graduates that push starting salaries down to the point that the average NPV is zero—the point where the total benefits of the DVM degree equal the total costs.

FIGURE 1

Effect of increasing veterinary college graduates on mean starting salaries



Source: AVMA Veterinary Economics Division

FIGURE 2

Lawyers vs. veterinarians: A summary

		Lawyers	Veterinarians
Male	NPV discount rate	4%	4%
	Student loan interest rate	6.21%	6.21%
	Mean student debt	$145,000	$136,462
	Age at graduation	25	26
	Age at retirement	67	67
	Net present value	-$299,661	-$79,548
	2015 starting salary	$65,000	$72,527
	Break-even starting salaries	$72,702	$75,368
Female	NPV discount rate	4%	4%
	Student loan interest rate	6.21%	6.21%
	Mean student debt	$145,000	$143,981
	Age at graduation	25	26
	Age at retirement	67	67
	Net present value	$31,207	$318,831
	2015 starting salary	$60,000	$69,879
	Break-even starting salaries	$58,886	$58,924

Source: AVMA Veterinary Economics Division

The mean starting salary of full-time veterinarians in 2015 was $72,527 for males and $69,879 for females, according to the AVMA Senior Survey. Given the current level of debt at graduation and expected earnings paths, the NPV calculation indicated that the break-even starting salary for males is $75,368 and $58,886 for females. The survey's gender distribution of graduates was 22 percent male and 78 percent female. Using these percentages as weights, we determined the weighted break-even salary to be $62,446.

We modeled the mean starting salary in each year as a function of per capita real U.S. gross domestic product (GDP) and the number of veterinary grads finding full-time employment (N) following the methods described in the January article "AVMA veterinary economist warns of education problems ahead." Using the model's parameters, the break-even salary would result from N being 31 percent higher. There would need to be 31 percent more grads finding full-time employment for an NPV of zero, or the equivalent of 10 more colleges of veterinary medicine. (See Figure 1, page 23.)

We collected data from the NALP's Employment Report and Salary Survey (ERSS) for 2014 and estimated the NPV for the legal profession to compare the job market for lawyers to veterinarians. Male law school graduates in 2014 earned a median starting salary of $65,000, and females earned $60,000, with a combined median debt of $145,000, according to the ERSS. We used median salaries for lawyers instead of means because the data is highly skewed: While most law school graduates earn a salary around the median value, about 12 percent of new graduates earn exactly $160,000, making the mean much higher than the median. In contrast, mean and median salaries for veterinarians are nearly identical. We otherwise made the same assumptions for law and veterinary school grads and calculated the NPV for lawyers as being -$299,661 and $31,207 for male and female graduates, respectively. The ERSS's respondents were 53 percent male and 47 percent female, making the weighted average NPV -$144,815. This indicates the current costs of earning a JD degree exceed the benefits. (See Figure 2, above.)

The veterinary profession is far from reaching a negative or even zero NPV. Because of their negative NPV, the law profession exhibits rising unemployment and underemployment rates and unfilled seats at law schools. For the veterinary industry to reach this point, there would have to be a large increase in veterinary graduates.

In the future, declining GDP growth, increasing student debt and continued veterinary service price increases in excess of inflation will negatively impact NPV and reduce the number of new veterinarians required to reach a zero NPV. And the trend in NPV is declining, bringing down with it the potential for expanding the number of new graduates. So while 10 additional schools today would cause to NPV to fall to zero, in the future it will take fewer. **dvm360**

Sean Barker is an AVMA intern and a recent agricultural economics graduate. Ross Knippenberg, PhD, AVMA's assistant director of economics, contributed to this article.

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The curious conundrum of the **wayward snowbird**

The state of practice is literally the issue with this snowbird veterinarian.

Lee James has been a veterinarian for 38 years. He's respected in his New Hampshire veterinary community. He's built a practice with five veterinarians and 18 team members. Dr. James feels he can work for many more years if he cuts down his load a bit and escapes the New Hampshire winters. He used to love snowboarding and ice skating, but now in his 60s the cold and the ice are difficult to bear. His answer: the warm shores of northern Florida during the winter months. He buys a condo in the Sunshine State and spends more time down south each year. At first it's two weeks, then he transitions to the entire months of January and February.

Dr. James is an outgoing man and makes friends easily. He's a favorite in his Florida condo community. He mixes a mean martini, and everyone likes the congenial veterinarian from New England. People often ask him questions about their pets, and he makes suggestions that are both neighborly and helpful.

A friend in need

On one occasion his neighbor knocks on his door. She's quite upset, because her 9-year-old Labrador Molly has taken ill. She's rushed Molly to the local vet, where they diagnosed a possible brain lesion and recommended an MRI at the local veterinary specialty center.

Dr. James tries to console his neighbor. He offers to examine Molly at his neighbor's house to ease her anxiety. Molly exhibits a marked head tilt with nystagmus present in both eyes. She stumbles and walks in circles. But she's still willing to take a treat. Dr. James auscults her chest, examines her ears and performs a thorough evaluation. He concludes that it's highly unlikely that this is a brain tumor. It's more probable that it's an idiopathic vestibulitis.

He explains that this condition often mimics stroke-like symptoms, but is in fact an inflammation of the inner ear. This inflammation causes these distressing symptoms. The good news is that in most pets it's self-limiting. It generally improves and resolves over the course of several days. He adds that many veterinarians do nothing and let the dogs get better on their own, but he's more comfortable using a low dose of an anti-inflammatory drug for several days. He offers to call a prescription in to the pharmacy for Molly so she can start her medication right away.

The good deed

His neighbor is ecstatic. She goes to the pharmacy and picks up the prescription. Over the next three days Molly recovers, just as Dr. James predicted. To keep the local veterinarian apprised, the neighbor returns for a follow-up exam and brings Molly's medication.

Her veterinarian is quite thrilled at Molly's progress. He mentions that this condition was part of his differential diagnosis, but he wanted the MRI to rule out the chance of a brain lesion. He notes Dr. James' prescription and asks his client where she's seen the other veterinarian. She says he's a snowbird neighbor who lives in her condo community.

Her veterinarian isn't happy that her snowbird neighbor evaluated his patient in a nonmedical setting without the pet's medical records and without a license to practice veterinary medicine in Florida. Fortunately, Dr. James' diagnosis was correct, but if he was wrong it was unfair for the pet, pet owner and the local veterinary community. The veterinarian files a complaint with the Florida and New Hampshire veterinary boards, stating that Dr. James is practicing without a valid Florida license.

Was Dr. James out of line? And did the neighbor's veterinarian respond appropriately?

Rosenberg's response

The letter of the law clearly indicates that Dr. James was practicing veterinary medicine in Florida without a license. This doesn't mean he's not capable. It means if there's a problem with Dr. James' diagnosis, the public has no recourse or ability to sanction him as a licensee in that state.

In reality Dr. James was simply using his expertise to assist a neighbor. He had no intention of practicing in Florida. Nevertheless, a licensee should be aware of the law and play by the rules.

It's perfectly legal for an unlicensed veterinarian to be used as a consultant by a licensed veterinarian in need of a special service. In that situation the pet owner can be assured the licensed doctor is participating in the treatment.

I know the neighbor's veterinarian was aggravated. But this isn't a battle I'd choose to take on. The board will likely advise Dr. James to cease practicing veterinary medicine in any state where he's unlicensed. Lesson learned! **dvm360**

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

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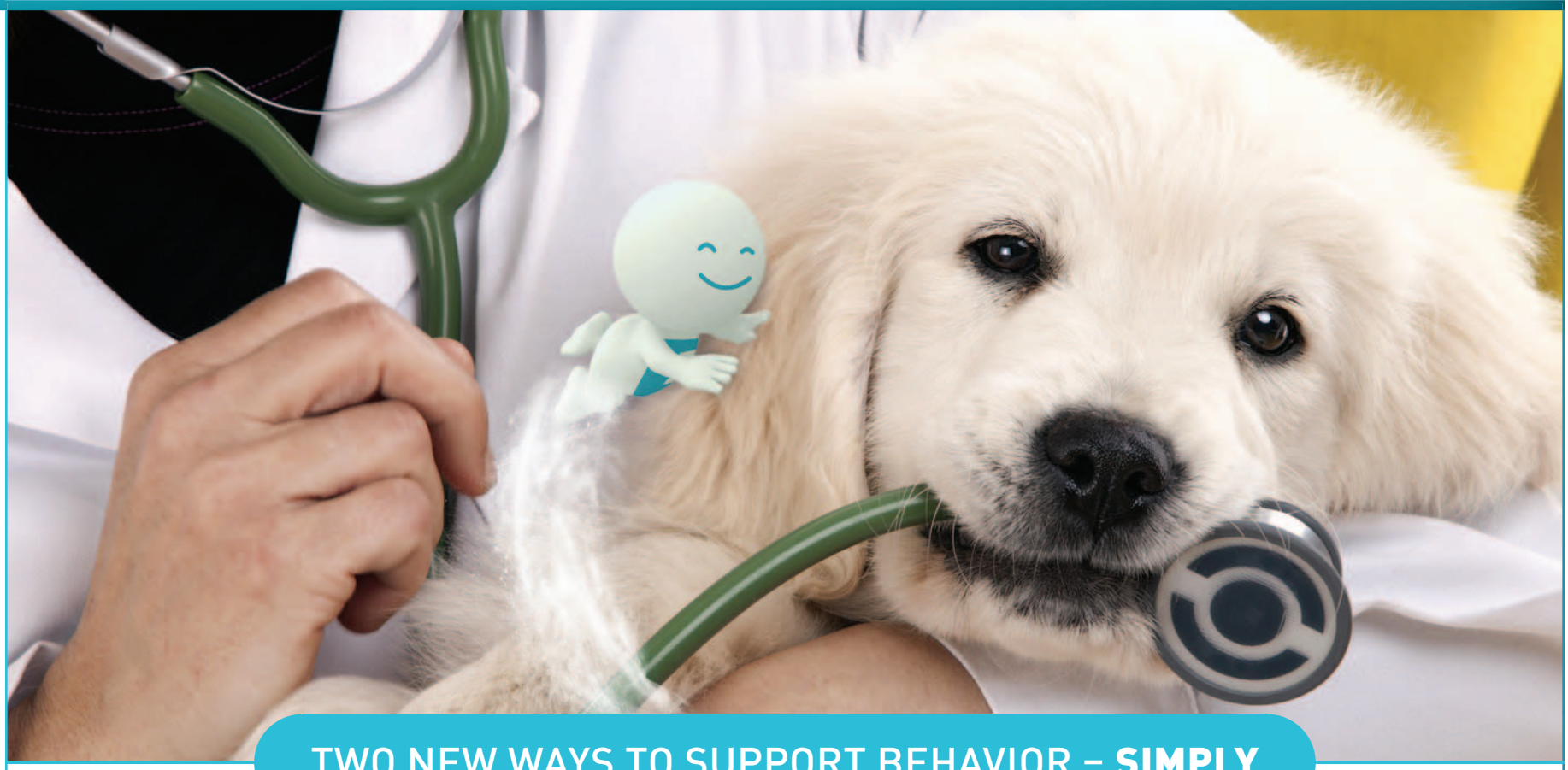

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Long nights and a long road ahead

On a much-needed day off, Drs. Greenskin and Deerin Headlights compare life as new grads in small animal and equine practice.

Dr. Greenskin is finally enjoying a day off and planning to meet one of her favorite vet school classmates for lunch to catch up and compare life stories since graduation. She feels that her coveted day off is well-deserved, particularly since Mr. Sketch's lab puppy has recovered quickly and completely after his enterotomy. Another innocent puppy's life plucked from the grasp of the deadly corncob! And who would have guessed—after all that drama, Mr. Sketch even sent a thank you note to Dr. Greenskin for saving the pup. No cookies or gift card, but still a welcome surprise!

Dr. Greenskin pulls up to a small sandwich shop downtown and parks next to a shiny vet truck. She immediately recognizes her buddy sitting on the outside terrace. "Well, if it isn't Dr. Deerin Headlights!"

"Hey, Greenskin! I almost didn't recognize you without a beer in your hand!" A few more jabs about the good old days of scandalous vet school parties and relationships follow.

Catching on, catching up

Dr. Headlights goes on to describe the ups and downs of his new life as an equine veterinarian. His bosses, four business partners who started Lucky and Fellows Equine Hospital in 1979, are the only equine hospital within their adjacent six counties, and business has boomed for them. Having hired two surgeons and an internal medicine specialist, they have created a name for themselves and have worked hard to make it happen. As a successful equine practice, they're bombarded each year with internship applications from eager new graduates looking forward to a long and fulfilling career in equine practice. The group has turned out dozens of interns over the years, the majority of which have moved on to thrive as small or mixed-animal practitioners.

But Dr. Headlights goes on to describe the long working hours, constant on-call duty and sparse support staff that define his life as a new equine associate. He's had to man a full hospital barn by himself on occasion and has little to no backup for problem cases on the overnight shifts. The whole scenario sounds dangerous and difficult to Dr. Greenskin, who begins to think she has it "easy" with her cushy hours and full, experienced support staff at her companion animal hospital.

Variations on a theme

As the two young veterinarians exchange stories and ideas about their budding professional careers, some common themes emerge. To start, they fully acknowledge the sacrifices made by those who built their practices from the ground up, and they're grateful for mentorship and being hired. They consider themselves lucky, but they worry for some of their classmates who haven't been so fortunate. Like Dr. Rock, who moved to Hardplace, California, where the job she was promised turned out to be much less desirable than what was originally advertised. Now she's stuck until she can save enough for moving expenses for her family to find a better situation. Or Dr. Flounder, who has already left two different jobs because of "philosophical differences" and is now facing long-term unemployment.

They also worry about their own long-term opportunities, given increasing competition between clinics in the more sought-after locales for veterinary jobs. And with armies of new veterinarians coming down the pike who are willing to accept lower starting salaries, Drs. Greenskin and Headlights feel some serious pressure to start making their mark somewhere—and soon. They can't help but feel that their current situation is vastly different from the conditions their mentors encountered so many decades ago.

The transition to the real world has been harsh to say the least—but these two young doctors are definitely up to the challenge.

To be continued!

Editor's note

Are you having a tough time adjusting to your old crotchety employer? Is your new inexperienced associate just not fitting in at your practice? Please send stories, ideas and comments to dvmnews@advanstar.com. All emails will be kept confidential, but the scenario may be featured in an upcoming installment of Old School, New School. **dvm360**

Dr. Jeremy Campfield works in emergency and critical care private practice in Southern California. This series originally appeared in Pulse, *the publication of the Southern California Veterinary Medical Association.*

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Belly-up:

What happens when a consolidator's left with a defunct veterinary practice?

A discussion of veterinarians' responsibility regarding medical records, veterinarian-client-patient relationships, and narcotics.

Picture this: A successful entrepreneur veterinarian opens a practice and over several years it grows at a healthy clip to the point where it employs four DVMs. Then the founder quietly sells the whole operation to a big veterinary practice "consolidator," which is MBA-speak for a corporate practice group with non-veterinarian owners.

Not long after the sale, the founder and former owner is indicted on serious vice charges and the story hits the national news. Clients begin abandoning ship, followed by employees (including doctors), and the hospital eventually has to close its doors.

This scenario played out in real life about eight years ago near my veterinary clinics in upstate New York. Sure, businesses go under all the time. So what's the big deal here?

Say a furniture store goes belly-up. It holds a liquidation sale, fires the employees, sells the building and moves on. A veterinary clinic isn't so simple. Consider the plight of the last employed DVM to walk out the door. He or she is charged with much more responsibility than the last guy to abandon the furniture outlet. This veterinarian can't just shut off the lights and head to the next job—not without some possibly serious potential legal repercussions.

Let's take it step by step.

Medical records

When a solo practitioner dies unexpectedly, his or her personal representative (executor, trustee, etc.) is responsible for wrapping up his affairs. Ordinarily that involves going in to the clinic, contacting the clients and determining where they would like their medical records and financial information sent. The clients may opt to take possession of their records personally, since they may contain comments and account numbers they never intended to share with anyone other than the late doctor.

However, with the defunct corporate veterinary practice, the consolidator will want to hold on to those "clients" until it puts together or buys out another practice to maximize the pecuniary value of those records.

Can it legally do this? What does the state practice act say? In most states where non-DVM clinic ownership is still technically illegal, veterinary practices operate under a sort of "management arrangement" where the corporation makes profit while the veterinarians practice medicine "independently."

But what happens when there are no more practitioners and the medical records are sitting in the dark, cold building owned and managed by PetAmigos Inc.? Does the state of Old Jersey permit the management company to own, possess, sell or transact business with those files? What about West Dakota?

Ongoing medical protocols

Let's assume for the moment that state law permits PetAmigos Inc. to own the veterinary medical records long enough to open a new location and hire new doctors. (Not an easy or rapid undertaking, even without the cloud of disgrace that led to the closure of the first clinic.)

The day after that last veterinarian cleans out her desk, the calls will start coming in:

"Can I lower Sophie's steroid dose? I can't take the peeing."

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"I'm on vacation in Florida with Bella and I forgot our phenobarbital. Can you get us a prescription?"

"Bowzer ate another one of those house plants that poisoned him last month!" What was the name of that fern and what did poison control say to do back then?" (Good luck with that one, Mr. Wharton, MBA, sent in by PetAmigos to inventory the scalpel blades and logo cozies.)

The short-term answer is that the consolidator would probably bring in a temporary DVM who works directly for the company to manage these questions. But when and if it does, what's the liability of the last doctor who left the practice—the only veterinarian with whom the owners of Sophie, Bella and Bowzer actually had anything approaching a veterinarian-client-patient relationship?

Remember how important that relationship seems to be with American Veterinary Medical Association, the U.S. Drug Enforcement Administration (DEA) and state veterinary boards? Does the need for that relationship evaporate when a corporate hospital ceases operation?

Controlled substances

Smart, well-run corporate practice chains probably have employed licensed veterinarians who legally order and own the narcotics and other controlled substances that are present on the premises of their clinics. So when one of them fails and has to close, that DVM can simply take possession of these products and legally transfer them to another physical site for which he obtains a DEA permit.

But what about the veterinary corporate "consolidators" who haven't thought of this yet and who've convinced staff doctors to order controlled supplies in their name while the corporation pays the bill? I know this happens because I have seen it multiple times.

In fact, I recently had a client veterinarian call me because he was in exactly this position. He told me that all of the narcotics, antibiotics, steroids and hormones were ordered legally, by him, but that his last day would be "tomorrow." He was afraid of what would happen if he walked away with fentanyl and ketamine ordered under his DEA registration number sitting on the shelf.

This got me thinking …

If he leaves all those meds behind and one of the receptionists or Wharton, MBA, winds up overdosing, he's almost certainly screwed.

If he takes the drugs with him, he may be guilty of grand larceny. Again, he's almost certainly potentially screwed. Remember, he ordered the drugs but did not pay for them.

And, oh yeah—if he walks away from those narcotics and one of the MBAs takes them back to corporate HQ in the next state over? It's entirely possible that the corporate employee would be committing a federal crime. Screwed.

If you're a veterinarian at a corporate clinic

The law regarding the issues raised here is amorphous and unfolding gradually. The smart advice, until things are more settled, is to at least know who's who in the veterinary business that hires you.

I suggest that if a veterinarian takes a position with a multi-practice corporate clinic, she should request the identity of the doctor or doctors with final responsibility for the medical decision-making at the practice. This is especially important if it's a "consolidated" clinic organized and operated under a pair of legal entities—one legally owned by a licensed veterinarian and another (the "management company") owned by non-veterinarians.

Employed veterinarians need this information so that if serious problems develop, there's at least one individual who possesses a legal state license to practice veterinary medicine with whom they can discuss medical records and ongoing medical cases when and if they leave the practice. This way, if somebody drops the ball with respect to control of medical records or ongoing case management, the departing doctor has the name and contact info of an actual DVM to whom they can refer confused and disgruntled clients.

Above all, no veterinarian who works for a corporate "roll-up" or consolidated practice group should order pharmaceuticals in his or her own name. If a corporate practice has the legal authority to run a veterinary hospital, it should also have some legal way to obtain medicines and narcotics for its employed doctors to use. Employed doctor salaries are not high enough to justify bearing the potential liability of putting their own name on those orders. dvm360

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 email at info@veterinarylaw.com.

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The XYZs of employee satisfaction

Happy veterinary teams make for happy veterinary clients, and what suits baby boomers may not fit the millennials.

In a recent column, I provided seven ways to improve client satisfaction (**dvm360.com/7steps**). While it's a good start, it's just that—a *start*. A comprehensive understanding of client satisfaction would be incomplete if we failed to consider its relationship to employee satisfaction.

If your staff ain't happy, ain't nobody happy

Whether employees are happy depends on how well their desires and expectations are met in the workplace, and these appear to vary by age. When I started practicing veterinary medicine, 65-hour workdays were the norm, and there was little discussion of (or concern with) time off or working conditions. Making money to provide for my family was the goal, and I was happy as long as my family had what they needed—although I missed the fact that what they often needed was me! Yet it's clear that what motivated my late baby boomer generation doesn't have the same appeal for Generation Z (or X or Y, for that matter).

Recently, a good friend (and fellow late baby boomer) and I were discussing industry changes and how today's veterinarians are different from previous generations. "They aren't interested in working 60-hour weeks," he balked. "They would rather be home at 5:30 than make money. Nobody wants to work!"

This is, of course, an oversimplified view of the millennial mindset. And as millennials will continue to increase in the workplace in both number and influence, it would behoove us older folks to form a better understanding of their desires and expectations for the sake of both employee and customer satisfaction.

How did we get here?

To better understand where we are today, context is king. With help from an April 2013 *Talented Heads* article, let's commence a short history lesson.

Baby boomers were born between the mid-1940s and the mid-1960s. Though many of us in this generation entered the world during a time of economic hardship, we have witnessed immense economic growth over the course of our lives. Hard work, long hours, sacrifice and delayed gratification were often the hallmarks of motivation and reward for baby boomers, which is at least partly why we struggle to understand the mindsets of younger associates and employees.

Born between the mid-1960s and early 1980s, members of Generation X were heavily shaped by global political happenings, such as the Vietnam War, the fall of the Berlin Wall and the end of the Cold War. When compared with baby boomers, Gen-Xers tend to be more comfortable embracing ethnic, racial and religious diversity.

People born between the 1980s and 2000, Generation Y, are commonly referred to as millennials. Gen Y has grown up around the internet, cell phones, laptops and tablets. Being connected via technology is a way of life.

Many millennials have watched their baby boomer parents trudge through corporate jobs and have developed different workplace ideals. A 2016 Fidelity study cited in a May 2016 *USA Today* article found that millennials were willing to take a pay cut of around $7,600 in exchange for improved quality of work life. For Generation Y, the article says, money and benefits rank below a healthy, happy work environment and meaningful work.

Motivating millennials

Thus, as foreign as it may seem to baby boomers, sweetening the money pot may not increase millennials' willingness to work or work output (assuming compensation is at least adequate). As Scott Dobroski, a spokesperson for Glassdoor.com, told *USA Today* this past April, "If [employees] do not see work/life balance where they can go out and learn about the world, [a better salary] does not interest them enough. They want to go and work somewhere where they are going to feel valued."

It's crucial to recognize these desires and expectations to attract and maintain happy millennial employees, because you can't have satisfied clients without satisfied employees. And don't get too comfortable. Employee expectations and desires will continue to morph. Though I can't predict the future, Generation Z (children born after 2000) will likely be highly connected, tech-savvy social media users. And if trends continue, work will continue to be less consuming and less about the bottom line. **dvm360**

Dr. Michael Paul is a nationally known speaker and columnist and the principal of Magpie Veterinary Consulting. He lives in Anguilla in the British West Indies.

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MEDICINE | Dentistry

The ABCs of dentistry: "E" is for enamel

Make sure your knowledge of what can go wrong with this natural tooth covering—the hardest substance in the body—isn't too superficial. *By Jan Bellows, DVM, DAVDC, DABVP, FAVD*

Enamel, formed during tooth eruption, is 96% mineral, making it the hardest structure in dogs' and cats' bodies. Dentin is the second hardest tissue, being 70% mineral and 30% organic (water, collagen and mucopolysaccharide).

Enamel covers and protects the tooth crown. It is avascular and has no nerve supply. If the enamel is damaged, it cannot self-repair as compared with dentin, which can. On radiographs, enamel appears more radiodense than dentin and pulp tissue since enamel is more mineralized than both (Figure 1).

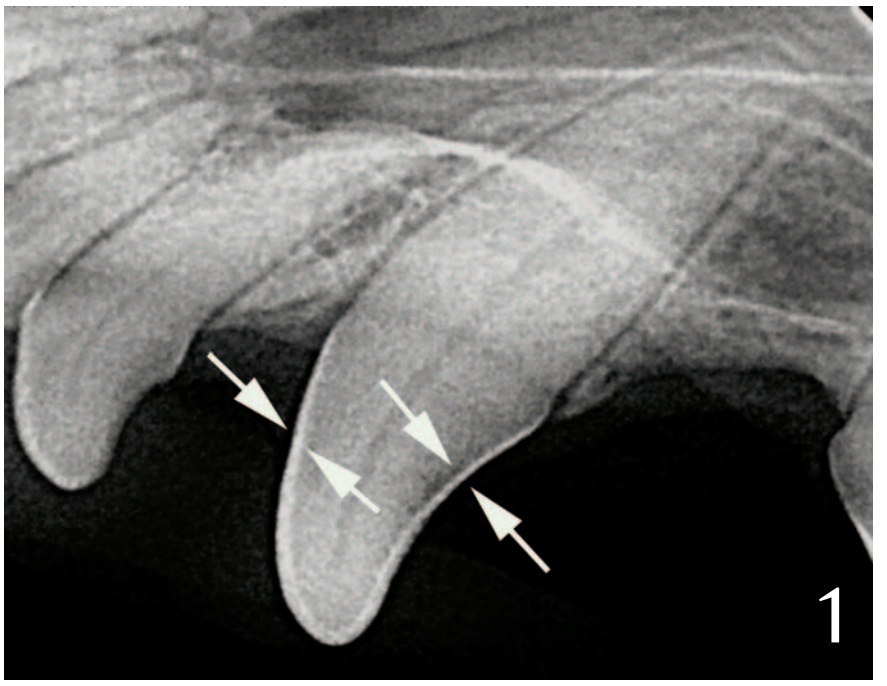
Many conditions can affect enamel, some of which need care while others do not. Treatment generally depends on the proximity of the lesion to the underlying dentin, which, through tubules, communicates with the tooth's sensitive pulp. In a young dog or cat, the pulp is large and close to the enamel. As the animal ages, the dentin produced by amelobasts from the pulp increases the distance between the pulp and enamel, decreasing sensitivity and the possibility of infection (Figure 2).

Enamel abrasion

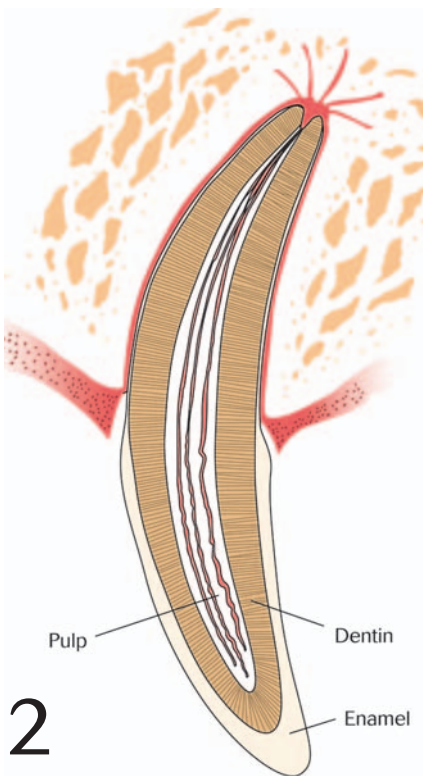
Abrasion is wear caused by tooth contact with nondental objects. It can be caused by chewing on objects, such as fences (Figure 3A), bones, antlers, flying disks and tennis balls. What's the harm in tennis balls? They accumulate sand in the yellow web, creating a sandpaper-like effect that, when chewed, removes enamel and dentin and can expose the pulp (Figure 3B).

Enamel attrition

Attrition involves tooth wear caused by contact of a tooth with another tooth. It occurs secondary to skeletal maloc-



>>> Figure 1. An intraoral radiograph with arrows pointing to radiodense enamel. (Unless otherwise indicated, photos courtesy of Dr. Jan Bellows)



>>> Figure 2. Tooth anatomy showing the proximity of enamel and pulp.

>>> Figure 3A. Fence chewing resulting in loss of enamel and dentin with near pulp exposure on the distal surfaces of both mandibular canines.

>>> Figure 3B. Tennis ball chewing resulting in excessive perpendicular wear of maxillary incisors and canines.

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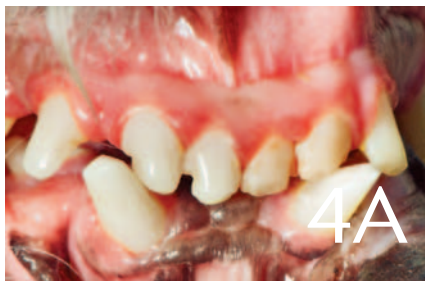
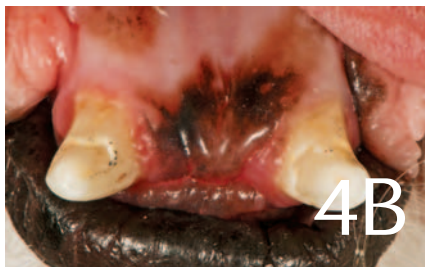
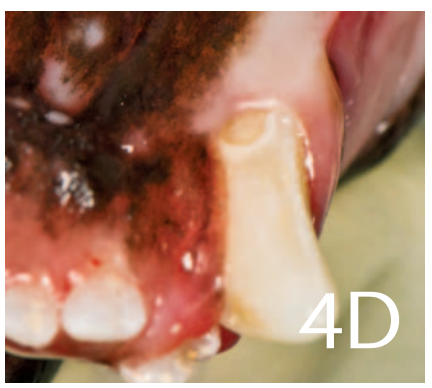


>>>Figure 4A. A mandibular mesioclusion resulting in attrition caused by the maxillary second incisors.

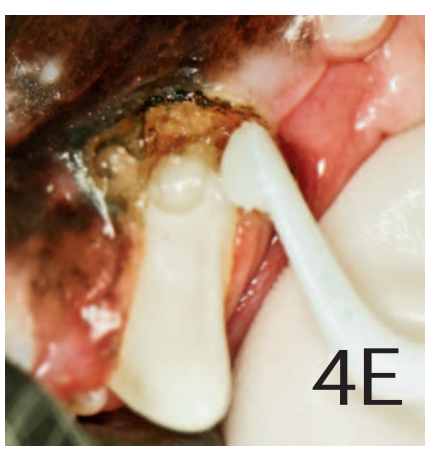


>>>Figure 4B. Enamel and dentin loss on the distal surfaces of the mandibular canines caused by the maxillary second incisors in the same patient as Figure 4A.

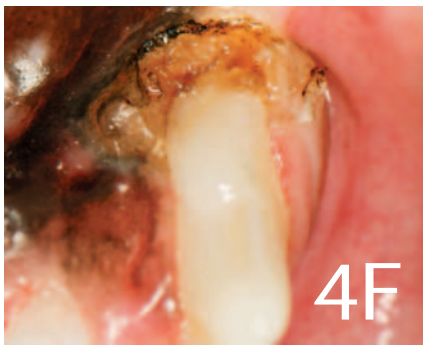
>>>Figure 4C. The enamel and dentin defects pictured in Figure 4B restored with light-cured composite after extraction of the right and left maxillary second incisors.



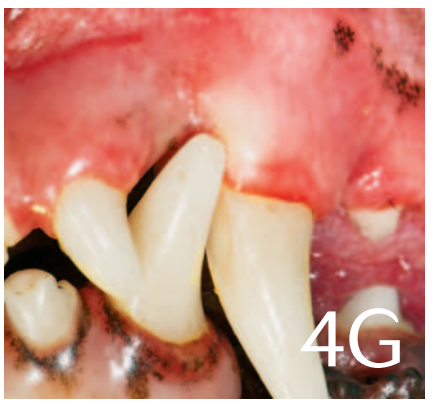
>>>Figure 4D. A left mandibular enamel canine defect caused by attrition.



>>>Figure 4E. Light-cured composite applied to the prepared defect pictured in Figure 4D after gingivectomy.

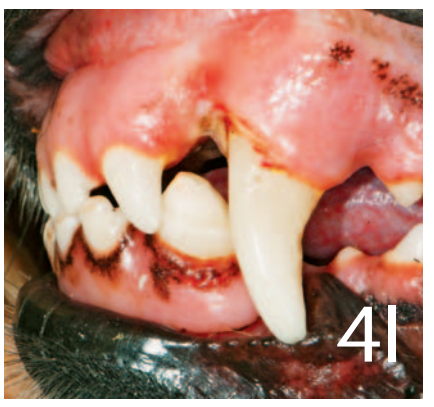


>>>Figure 4F. The restored tooth pictured in Figures 4D and 4E.



>>>Figure 4G. A malpositioned left mandibular canine creating enamel loss of the maxillary canine and attached gingival loss.

>>>Figure 4H. Enamel and gingival loss caused by the malpositioned left mandibular canine in Figure 4G.

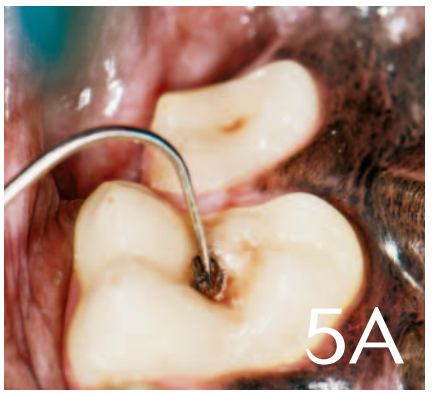


>>>Figure 4I. The left mandibular canine crown reduced and restored to alleviate the trauma pictured in Figure 4H. A gingivectomy was performed to treat the mucogingival defect.

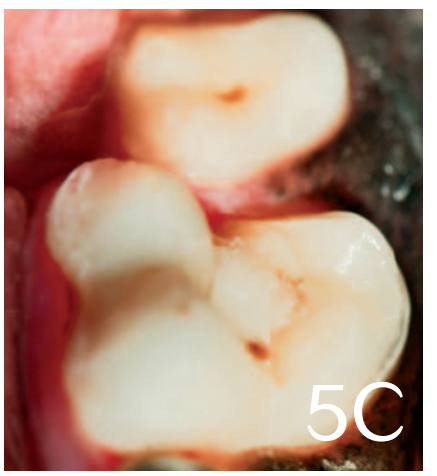
clusion (the jaw lengths are abnormal) or a dental malocclusion (the jaws are of normal lengths but individual teeth are malpositioned) (Figures 4A-4I).

Caries

Caries are areas of enamel loss that sometimes progress to include dentin and create pulp exposure. Caries are caused by demineralization from acids released during bacterial fermentation of carbohydrates. Caries are rare in dogs and cats. In dogs, they usually affect the pits in the occlusal areas of the maxillary first molars in larger-breed dogs, especially Labrador retrievers (Figures 5A-5C).



>>>Figure 5A. A shepherd's hook explorer placed in caries.



>>>Figure 5B and 5C. The caries removed with a round bur and the defect filled with light-cured composite before preparation for metallic crown restoration.

Enamel hypoplasia

This condition occurs from an inadequate deposition of enamel matrix before the tooth emerges from the gingiva due to poor nutrition or a high temperature when the dog is between 9 and 12 weeks old. Enamel hypoplasia can affect one or several teeth and may be focal or multifocal.

The crowns of affected teeth will have areas of normal enamel next to areas of hypoplastic or missing enamel. Enamel hypoplasia does not affect deciduous teeth (Figures 6A and 6B).

>>>Figure 6A. A left maxillary third incisor and canine affected by enamel hypoplasia. Note the deciduous canine is not affected.

>>>Figure 6B. The left mandibular second and third incisors and canine affected by enamel hypoplasia.

In areas where enamel is not present, exposure of the underlying dentin can be painful from increased sensitivity to heat, cold and pressure, especially in younger animals. The goal of treatment is to seal the dentin tubules responsible for sensitivity with a dental bonding agent, smooth down the dental ridges that accumulate plaque and tartar with a white stone bur on a water-cooled high-speed handpiece, and restore the tooth with composite restoration. Unfortunately the composite restoration rarely lasts because of shearing forces. Repeated application of dental boding agents every six months until the dog is 2 years old allows for more dentin formation and increases the distance between outside influences and the pulp, decreasing sensitivity.

Placing metallic crowns to protect larger teeth generally creates long-term pain-free solutions. Metallic crown restoration should be considered when treating the eight larger teeth, including the canines, upper fourth premolars and lower first molars. Extraction of the affected teeth is usually not indicated as long as there is no evidence of endodontic disease (Figures 7A-7E, page M4).

Enamel infraction

Enamel infractions, also called craze lines, are incomplete fractures (cracks)

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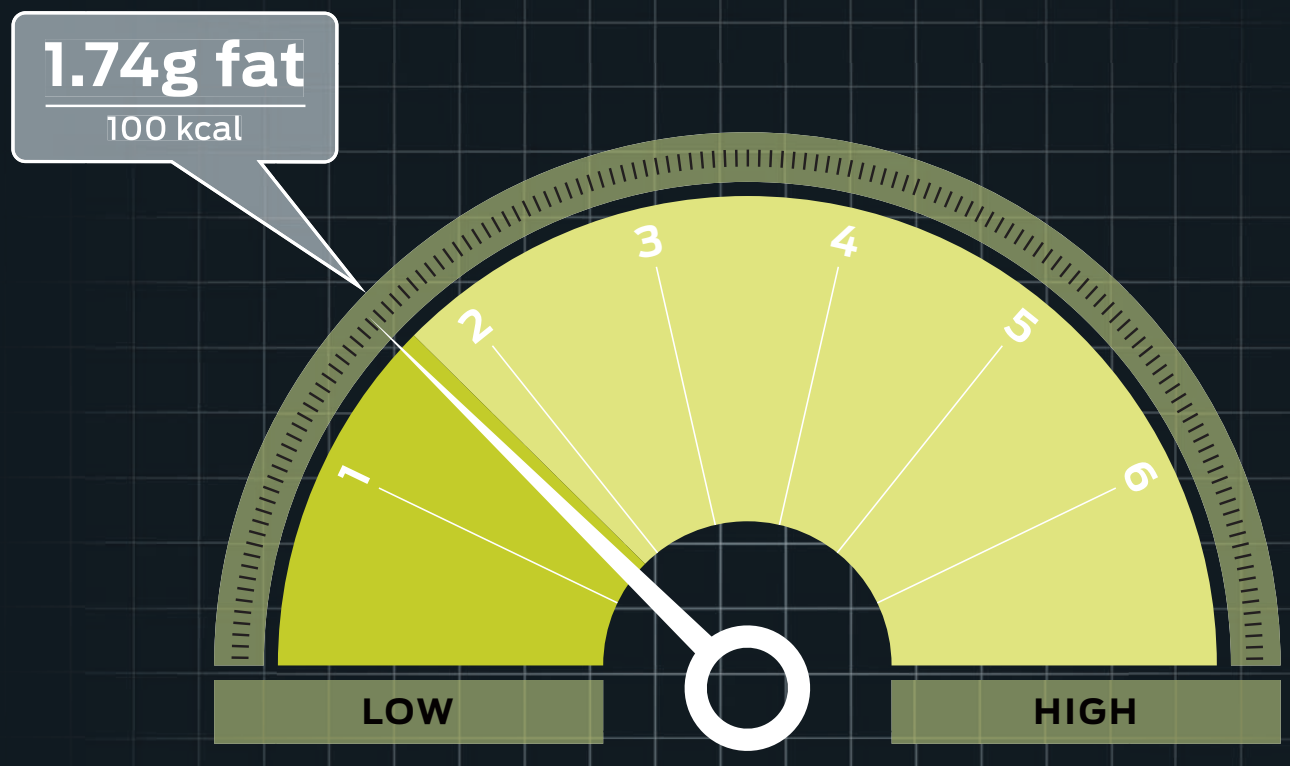

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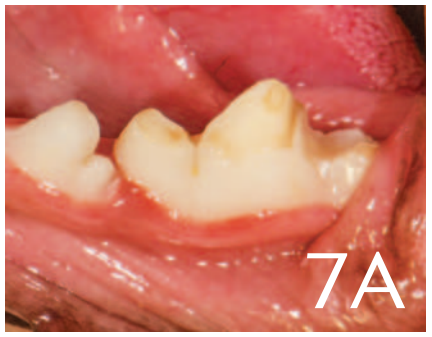
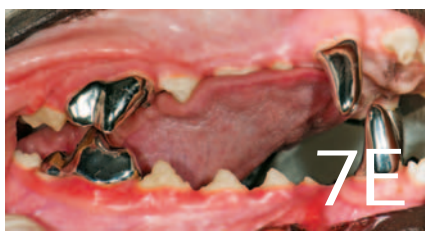


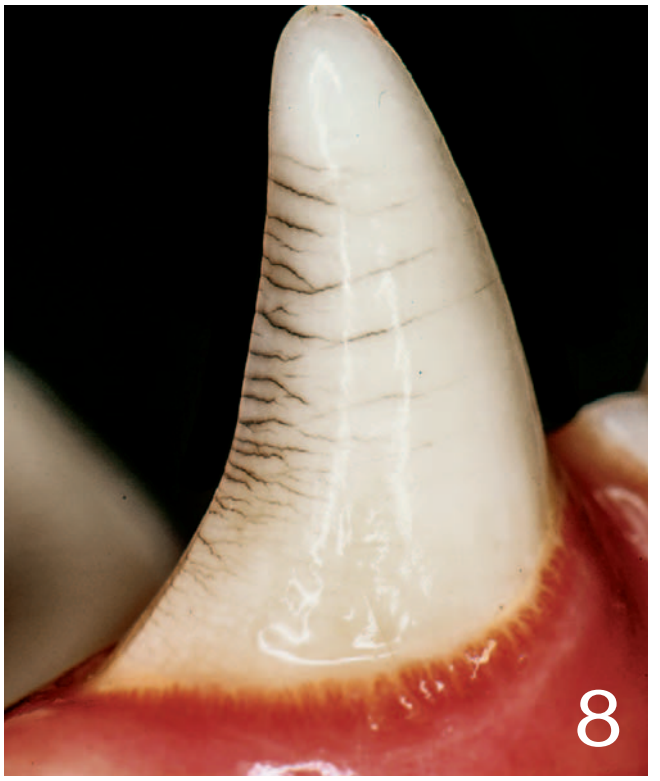
>>>Figure 7A. A left mandibular first molar affected by enamel hypoplasia.

>>>Figure 7B. The tooth pictured in Figure 7A restored with light-cured composite before metallic crown preparation.

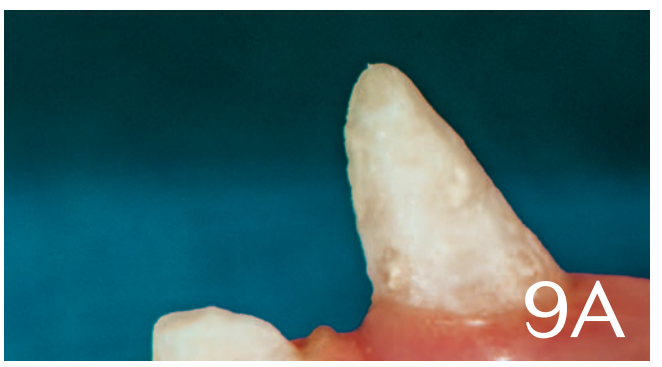
>>>Figure 7C. Extensive generalized enamel hypoplasia.



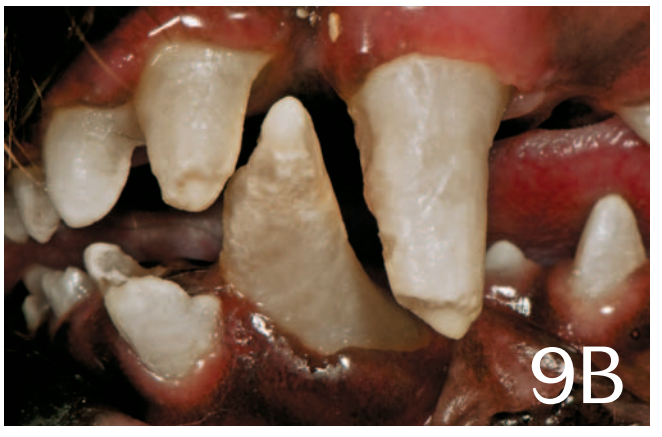
>>>Figure 7D and 7E. Metallic crowns protecting the maxillary and mandibular canines, upper fourth premolars and lower first molars of the patient pictured in Figure 7C.



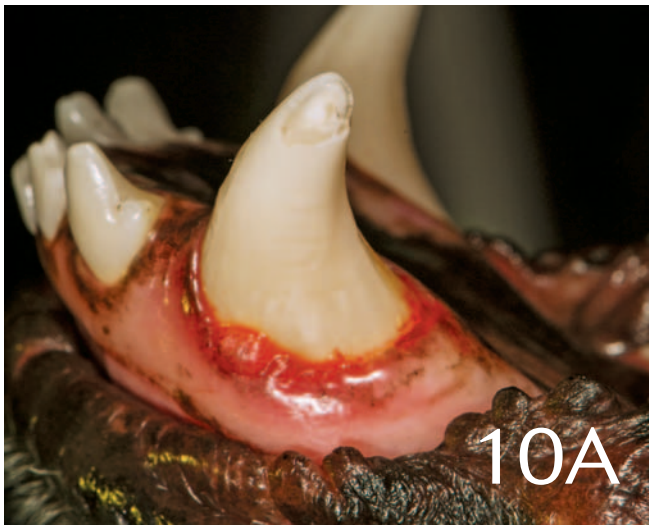
>>>Figure 8. An enamel infraction affecting the right mandibular canine.



>>>Figure 9A. Enamel hypomineralization of the left mandibular canine and incisors.

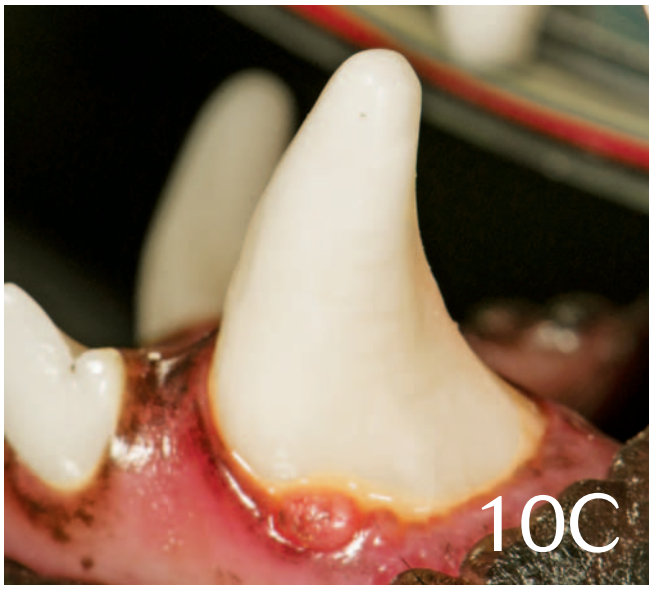


>>>Figure 9B. Enamel hypoplasia and hypomineralization.



>>>Figure 10A. An enamel fracture approaching the underlying dentin in a dog.

>>>Figure 10B. Phosphoric acid used as an etchant before applying light-cured composite.



>>>Figure 10C. The restored canine tooth.

Dr. Jan Bellows owns All Pets Dental in Weston, Florida. He is a diplomate of the American Veterinary Dental College and the American Board of Veterinary Practitioners. He can be reached at (954) 349-5800; email: dentalvet@aol.com.

of the enamel without loss of tooth structure (Figure 8). No treatment is indicated.

Enamel hypomineralization

This condition occurs when there is an inadequate mineralization of enamel matrix. It can affect several or all the teeth. The crowns of affected teeth are covered by soft enamel that may flake off during ultrasonic scaling and are worn rapidly during daily chewing. Treatment is the same as that for enamel hypoplasia (Figures 9A and 9B).

Enamel fracture

These fractures are confined to the enamel. Because dentin is not exposed, enamel fractures are not considered painful. To protect the tooth from further damage, treatment should include smoothing any sharp enamel edges with a high-speed handpiece and applying a composite or metallic restoration (Figures 10A-10C). The enamel on cat teeth is thinner than in dogs. Because of underlying sensitivity and infection, enamel fractures in cats should be treated by extraction or root canal therapy. dvm360

New derm products on the horizon

What products have our dermatology experts excited, now and in the not-so-distant future?

There are many new and upcoming dermatologic products that are changing the derm game as we know it. (So we asked these two veterinarians which ones they're the most excited about.)

New flea preventions

Researchers are making advances and breaking boundaries in the dermatologic world with products like afoxolaner (NexGard—Merial), fluralaner (Bravecto—Merck) and sarolaner (Simparica—Zoetis) in order to better the welfare of patients with dermatologic conditions.

"There's some real promise with using these for other disease processes, including generalized demodicosis," says Melissa Hall, DVM, DACVD.

PCR testing

Tired of a nebulous diagnosis of granulomatous disease after histopathologic examination of a skin sample? How about trying to find just the right strain to possibly identify an infective organism? Or crossing your fingers that infective organisms will grow on culture medium even if they are present? Polymerase chain reaction (PCR) testing is coming to the rescue.

"We're seeing a lot more PCR testing developed for infectious disease—diseases that we've had trouble culturing or trouble finding on histopathology," says Darin Dell, DVM, DACVD.

Dell says several articles have shown success in using PCR tests to identify mycobacteria and *Leishmania* species in tissue samples.[1,2] And he says a PCR test is already available for dermatophytosis. "PCR provides a quicker answer than a DTM [dermatophyte test medium] culture and eliminates the difficulties that come along with culturing," he says.

Monoclonal antibody therapy

"We're seeing this first from the human side of medicine, using more of a targeted approach," says Hall. "I'm excited about this approach of using more targeted therapy for the treatment of atopic dermatitis using the canine atopic immunotherapeutic injection, or CADI, which is a monoclonal antibody therapy to canine IL-31. It's a new, interesting way to get better control of our cases with fewer systemic side effects."

Topical therapies

New products like medical-grade silver powders (e.g. MicroSilver BG—BioGate) can improve dermatologic animal care. From insect bites to treating postsurgical wounds, these powders are on the forefront of reducing harmful bacteria while supporting the natural healing process of the skin.

"We've all seen a lot more resistant infections recently, and it's going to continue to be a bigger problem," Dell says. "Using MicroSilver has shown that it can be much more effective with topical therapy and that we'll need less oral antibiotics." dvm360

For references for this article, please visit dvm360.com/newderm.

A renewed appetite for addressing inappetence

A look at the physiology of hunger and the role of ghrelin, dubbed the hunger hormone.

By Jennifer L. Garcia, DVM, DACVIM

In a presentation sponsored by Aratana Therapeutics called "Inappetence in dogs: What's new in its management?" at the 2016 American College of Veterinary Internal Medicine (ACVIM) Forum, Audrey Cook, BVM&S, MRCVS, DACVIM, DECVIM-CA, DABVP (feline), briefly reviewed the physiology of appetite regulation and how a new targeted treatment may aid in our management of inappetent dogs.

Loss of appetite: The canary in the coal mine?

Cook explained that while we tend to see anorexia secondary to a number of underlying medical conditions, it is often one of the *first* signs of illness and can play a critical role in patient outcomes. For example, recent studies show that cats can lose 11% of their body weight in the six to 12 months before chronic kidney disease (CKD) is diagnosed.[1] Loss of muscle mass, often evident months to years before the onset of azotemia, has also been associated with shorter survival times in dogs with CKD.[2] Further, with respect to neoplasia, Cook pointed out that anorexia can exacerbate the adverse effects of chemotherapy, which may lead to early discontinuation of therapy.

The hungry hormone

Our knowledge of appetite regulation has evolved with new research in veterinary medicine focusing on the role of hormones in both stimulating and suppressing the hunger response. One of these hormones is ghrelin, also known as the hunger hormone. Made in the gastrointestinal tract, ghrelin promotes food intake by activating orexigenic (appetite-stimulating) neurons and inhibiting the anorexigenic neurons at the level of the hypothalamus. In addition, Cook shared that ghrelin triggers release of growth hormone-releasing hormone and subsequent growth hormone release from the pituitary gland. Together, these physiologic mechanisms contribute to an increase in muscle mass as well as weight gain. Other ghrelin attributes can include anti-inflammatory and prokinetic effects.

So what can we do for our inappetent patients?

First, "Fix what you can fix," said Cook. Every effort should be made to manage the underlying medical issues contributing to the patient's anorexia. Supportive measures such as anti-nausea medication, intravenous fluid therapy, and warming food are some of the interventions that can be considered for anorectic patients.

For patients that remain inappetent despite management of their underlying disease, appetite stimulants can be incorporated into the treatment regimen. Mirtazapine is the drug most often used in this scenario, but Cook noted that careful dosing is required, particularly in cats, to avoid the drug's sedative and hypnotic effects.

Cook also discussed ghrelin agonists for appetite stimulation, which have been used successfully in human medicine for weight gain and gastrointestinal motility. A ghrelin receptor agonist has recently been developed for veterinary use—capromorelin oral suspension (Entyce—Aratana Therapeutics). This drug, approved by the FDA in May of this year, has been evaluated in safety and efficacy studies and is indicated for use in dogs for appetite stimulation. It is labeled at a dose of 3 mg/kg orally once a day. The drug is expected to be available in February 2017. **dvm360**

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1. Greene JP, Lefebvre SL, Wang M, et al. Risk factors associated with the development of chronic kidney disease in cats evaluated at primary care veterinary hospitals. *J Am Vet Med Assoc* 2014;244:320-327.
2. Parker VJ, Freeman LM. Association between body condition and survival in dogs with acquired chronic kidney disease. *J Vet Intern Med* 2011;25:1306-1311.

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3 exciting trends in veterinary anesthesia

What's really exciting in anesthesia? Ralph Harvey, DVM, MS, DACVA, an associate professor of anesthesiology at the University of Tennessee's College of Veterinary Medicine, says he's most impressed by the ways today's pharmaceuticals are used in better ways to calm and comfort patients.

"There's a huge theme right now in the relief of suffering in animals, and it comes down to the relief of fear, pain and stress," Harvey says. The three trends he's most excited about?

1. The expanded use of maropitant for all patients undergoing anesthesia.

2. Improved sedation with the expanded use of dexmedetomidine.

3. The "wealth of opportunities" for the relief of pain in cats.

These products are "tremendously reducing the suffering our patients encounter," Harvey says. "It's always a combination of technique and product—how we can use the new product to achieve goals: longstanding goals and newly recognized opportunities." **dvm360**

The one lifesaving ER tip all general veterinary practitioners need to know

Placing an intravenous catheter can be challenging when the neonate and pediatric patients present sick with inappetence or gastrointestinal losses. In these cases, the patient may also present hypotensive, hypothermic, hypovolemic, or hypoglycemic with very weak pulses. When sick neonate and pediatric patients present such flat pulses, palpating arteries and veins becomes increasingly difficult for veterinarians who are trying to put an IV in.

But there's a tremendously valuable lifesaving procedure in both ER and general practices: placing an intraosseous catheter in the patients. Placing an IO catheter in the femur, for example, could provide fluids, dextrose support and a better opportunity to be resuscitated until an IV can be put in later.

According to Garret Pachtinger, VMD, DACVECC, not only is this inexpensive, simple and free of equipment, but it is ultimately lifesaving.

You might ask, won't placing an IO catheter be painful? While analgesia is very important in veterinary medicine, IO catheters are often placed in extremely debilitated neonatal or pediatric patients where medications such as NSAIDS, opioids or other classes of analgesics may have more risks than benefit. As a result, systemic analgesia may not be the best option for the hypovolemic, hypothermic or otherwise debilitated pediatric or neonatal patient, says Pachtinger.

In these cases, to provide analgesia, Pachtinger says a small bolus of 1% to 2% lidocaine over the insertion site can be considered before the IO placement. It is then recommended to replace the IO catheter with an IV catheter as soon as possible. **dvm360**

EQUINE | Practice life

Equine associates: Getting out from under the boss's shadow

How practice managers and owners can make sure their newest doctor is a success in equine practice. *By Kyle Palmer, CVT*

This is an interesting time for newly graduated veterinarians who aren't feeling themselves drawn to companion-animal-only practice. Many local economies are experiencing lower demand for equine veterinary care, making it harder for DVMs to jump out of school and hang their own shingle. And, of course, equine and mixed practice jobs usually come with mandatory emergency work and long hours.

This means many young associates will find themselves working for an equine veterinarian with dozens of years of experience and a strong bond with clients. Those qualities are terrific assets to the practice, but they can also be an obstacle for new docs.

Here are a few key ways that managers, new graduates and all the doctors in the veterinary practice can help new equine practitioners make their way out from under the shadow of an experienced boss—and into healthy production numbers.

MANAGERS: Hunt down your lone wolf

The longest-standing, most successful equine veterinarian in your practice must be willing to look into the future and understand the importance of a clientele that's willing to see Dr. Not-Him or Dr. Not-Her. Territorialism and competition among veterinarians

>>> Competition between doctors in a practice can work out badly. Find out how associates, managers and practice owners can help new doctors find their path.

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PARASITOLOGY E4
Equine piroplasmosis: What, how and why

NEWS E8
> UC Davis researcher inducted into Equine Research Hall of Fame
> USDA proposes amendments to Horse Protection Act

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within a practice is damaging. Mentoring and camaraderie pay dividends for years to come. Owners and managers need to foster and reward the latter.

MANAGERS: Introduce the newbie online

Tell clients about your newest addition on your website and in social media as soon as possible. Information matters to clients. It may be as simple as posting a few pictures of your new doctor, along with a simple bio and a few details on what the newest doctor is most passionate about.

MANAGERS: Introduce the newbie in person

If you can spare them, allow new graduates to spend time riding along with the more seasoned veterinarians. Introductions made on calls by senior practitioners go a long way to convincing longtime clients that Dr. Newbie is someone they can trust. Those relationships will pay off later, and the opportunity for the new graduate to see exactly why their peers are so successful will help them develop their own skills with clients.

MANAGERS: Mix it up a bit

If yours is a mixed practice, balance the caseload. New graduates may have a plan coming in for what patients they want to see, but they probably don't have a roadmap of their future. And we all know futures change. Give these new doctors equal time seeing companion animal appointments, doing companion animal surgery and seeing equine cases. In these practices, many clients have dogs, cats and horses, and gaining their trust in one area will certainly help with the other.

Now that's a lot, management team members! Deep breath! Then let's ride out to see what the doctors can do ...

DOCTORS: Get on the same page

When the first question arises from a client about why Dr. Newbie did something one way while Dr. Familiar does it differently—you know they'll ask—put some thought into the answer. Veterinary medicine offers few absolutes, and it's important to let clients know that both ways might be correct. While a new graduate should feel empowered to explain his or her decisions directly to the client, it will make a huge difference if that same message comes from the horse owner's regular veterinarian.

DOCTORS: Double-check fees

The quickest way for a new graduate to get an unfavorable reputation is to charge more than Dr. Familiar. Older veterinarians (especially practice owners) tend to hand out discounts to clients more regularly. Sometimes they just undercharge because they detest a world where complete care has to cost so much. Don't force your new graduate to hold the line on fees while the experienced doctors discount willy-nilly. This a key opportunity to send clients the signal that you operate a veterinary practice rather than a building full of separate practitioners.

DOCTORS: Equalize emergencies

If your practice sees emergencies, all veterinarians should rotate equally. New graduates should understand why clients might demand another doctor in an emergency situation, then take those opportunities to gently explain (and demonstrate) that the practice has many competent practitioners. Discourage veterinarians from providing their personal after-hours phone number to clients who will use it to circumvent whoever's on call. It may be a nice customer service gesture, but it really just says you don't trust your co-workers. Not good.

NEW GRADS: Meet your bosses halfway

Be open-minded, especially to the (seemingly) antiquated way some longtime veterinarians practice. Sure, they didn't just finish four years of intensive, up-to-date veterinary education, but they've survived in a world of constantly changing medicine, finance and clientele for a long time. That survival

>>> Mike Stewart, DVM, owner of Silver Creek Animal Clinic in Silverton, Oregon (right), mentors new associate Ada Norris, DVM, during a lameness workup.

was built on a foundation of medical choices that worked then—and still work now. And that leads us to ...

NEW GRADS: Ensure you're a fit

Decide as soon as possible whether you're going to be able to marry your medical and client service philosophy to that of the practice you joined. There are all types of equine practices out there and all levels of what's deemed an acceptable standard of care. Think about the tough decisions:

> In what scenarios are you comfortable performing euthanasia?

> How much are you willing to let a client's financial decisions impact your diagnostic and treatment approach?

> Will you allow a "good, better, best" approach to the care you prescribe, or will you try to serve only the clients who believe in the highest standard of care and can afford it?

I don't believe there are right or wrong answers to any of these questions, but how you fit into a practice hinges on how you feel about these issues. You don't do anyone any good (least of all yourself) by trying to shove your square peg into their round hole.

Now, saddle up. Smart managers and experienced practice owners help themselves and their practices when they embrace new equine doctors—who are currently some of the smartest to ever emerge in veterinary history. **dvm360**

Kyle Palmer, CVT, is a frequent dvm360.com contributor and a practice manager at Silver Creek Animal Clinic in Silverton, Oregon.

PHOTO COURTESY OF KYLE PALMER

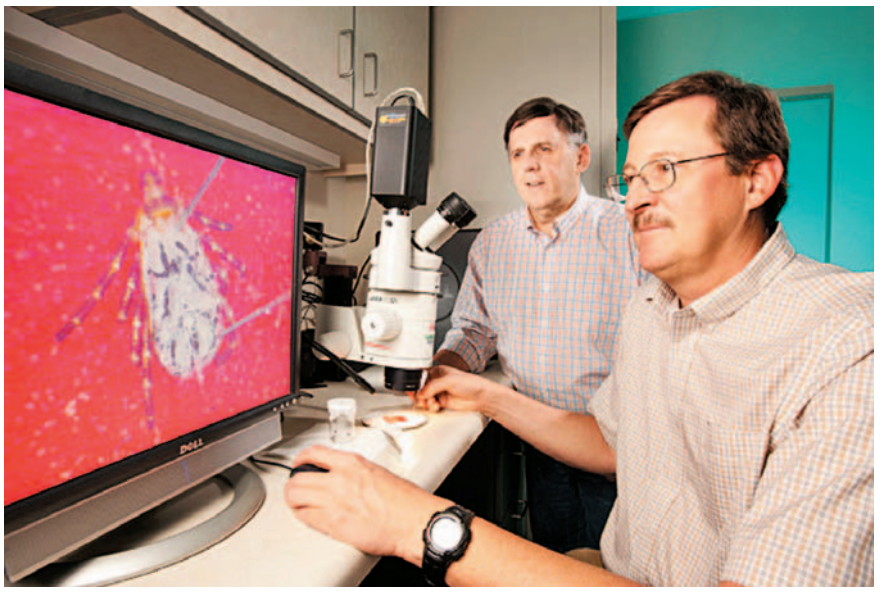
Equine piroplasmosis: **What, how and why**

An in-depth look at what it is, how it's transmitted—and why this tick-borne disease might be going away. *By Ed Kane, PhD*

Equine piroplasmosis (EP), a disease of horses and other equids, is caused by one of two protozoan parasites: *Theileria equi* or *Babesia caballi*, says Glen Scoles, PhD, a research entomologist with the U.S. Department of Agriculture (USDA) Animal Disease Research Unit (ADRU). These organisms can be transmitted by ticks or through contaminated blood from infected horses, whether transmitted iatrogenically or via blood transfusions.[1] Though biologically different, the two parasites share similar pathologies, life cycles and tick vector relationships.

T. equi and *B. caballi* must undergo sexual-stage development in ticks to complete their life cycle, making ticks the definitive hosts and vectors of the disease-causing parasites. Though relatively few species of ticks can support *T. equi* and *B. caballi*, here are competent tick vectors in the United States:

- *Amblyomma mixtum* (the Cayenne tick, formerly known as *Amblyomma cajennese*) is probably one of the primary U.S. vectors for *T. equi*.
- *Dermacentor variabilis* (the American dog tick) transmits *T. equi*.
- *Dermacentor nitens* (the tropical horse tick) transmits *B. caballi*.
- *Dermacentor albipictus* (the winter tick) transmits *B. caballi*.



>>> Entomologist Glen Scoles, PhD, dissects a tick as research leader Donald Knowles, PhD, observes.

Life cycle and transmission of *T. equi* and *B. caballi*

T. equi undergoes four stages of development. First, asexual replication occurs in the equine host's peripheral blood mononuclear cells (PBMCs), followed by asexual replication in the host's erythrocytes. Once a tick obtains erythrocytes infected with *T. equi* during blood feeding, the parasites sexually reproduce in the the tick's midgut, followed by a round of asexual replication in the tick's salivary glands. Sporozoites develop in the tick's salivary glands and are transferred to the horse during the feeding process, thereby infecting it with piroplasmosis.

According to Scoles, infection is transmitted in one of two ways: transtadial (or interstadial) transmission or intrastadial transmission. In the former, larval or nymphal ticks take on infected erythrocytes when they feed on an infected host. The ticks then drop off the equine host, molt, and find and feed on a new host once they reach their next development stage. In intrastadial transmission, an adult male tick feeds on an infected host before moving to another horse to transmit.

The life cycle of *B. caballi* is similar to that of *T. equi* in many respects, but there are some fundamental differences, Scoles says. For example, *B. caballi* does not replicated in the equine host's PBMCs, and it invades the tick's ovaries rather than its salivary glands. *B. caballi* is therefore transmitted when a female tick that has fed on an infected host lays infected eggs—a process called transovarial transmission. Within the tick embryo, the parasite invades the salivary glands. After the larvae hatch, the parasites develop into sporozoites that are then shed into the ticks' saliva during blood feeding to infect naive equines.

Because horses are social animals that have a tendency to cluster together, Scoles says, male ticks, which take blood in smaller amounts than females (female ticks engorge themselves before dropping off to lay eggs), are easily able to move from horse to horse, primarily in search of mates. Once on another horse, they may transmit the infection while feeding.

Signs

According to the USDA, equine piroplasmosis is considered an exotic disease in the United States.[2] In its acute form it can present as fever, malaise, reduced appetite, increased pulse rate and respiration, anorexia, constipation followed by diarrhea, tachycardia, petechiae, splenomegaly, thrombocytopenia, and hemolytic anemia leading to hemoglobinuria and icterus—even

PHOTOS COURTESY OF DR GLEN SCOLES

death in some animals.

Horses are capable of carrying the parasite for long periods without showing any signs of clinical disease, and if competent tick vectors are present, they can acquire and transmit the parasite. Horses infected with *T. equi* never lose the infection, and while those infected with *B. caballi* may clear their infection in three to five years, such horses are reservoirs of infection during that period.

Diagnostics

The number of parasites present in infected horses is often too low to detect on blood smears, but there are other methods of diagnosis, Scoles says. For example, infected animals develop an immune response that can be detected using a serological assay. However, the presence of an immune response doesn't necessarily mean the horse is currently infected, Scoles says. It could just mean that the animal was infected and has cleared the infection without a change to its serology results.

That's why Scoles also uses polymerase chain reaction (PCR) assay to detect the presence of a certain parasite DNA sequence. According to Scoles, PCR is a method for chemically amplifying that sequence many times so you can get enough to detect the parasite. "PCR confirms the presence of parasite DNA," Scoles says, "but not necessarily living parasites. However, if the animal is seropositive *and* positive by PCR, the combined results may confirm that you have an active parasite infection present."

Outbreak in Texas

On October 2, 2009, a mare on a ranch in Kleberg County, Texas, showed clinical signs of piroplasmosis, and serologic testing conducted by the USDA detected *T. equi* antibodies. The remaining 359 horses on the ranch were also tested, and 292 (81%) were found to be seropositive for *T. equi* on initial screening.[3]

While previous small outbreaks had been caused by iatrogenic transmission, the high prevalence of infection on the Texas ranch and the high-quality veterinary care the horses had received (suggesting iatrogenic transmission would not be likely) led Scoles and his colleagues to believe that tick-borne transmission was the culprit in this case—a suspicion confirmed by the USDA's epidemiological investigation.

>>> Support scientist Kathy Mason and technician Ralph Horn check ticks feeding on a horse.

The need for a new treatment. Before the Texas outbreak, treatments for equine piroplasmosis weren't well-documented or validated, and the USDA required infected horses to be euthanized or, in some cases, permanently quarantined. One major treatment hurdle was that the USDA's definition of infection included seropositivity. Thus, a treatment that eliminated the parasite but didn't remove seropositivity would not be considered effective. With so many high-value quarter horses in danger of being euthanized in Texas, researchers explored other possibilities.

Because horses are social animals that tend to cluster together, male ticks, which take blood in smaller amounts than females, are easily able to move from horse to horse, primarily in search of mates.

One of Scoles' colleagues at the ADRU, Massaro Ueti, PhD, a research veterinary medical officer, was tasked with developing and validating a new piroplasmosis treatment option. Ueti and his colleagues came up with a treatment regime that used imidocarb diproprionate, an antiparasitic drug approved for the treatment of canine babesiosis that Scoles and colleagues had used to clear *B. caballi* in a study several years earlier.[4,5]

"Ueti and the rest of our team investigated whether we could clear infection in horses with imidocarb dipropri-onate," Scoles says. "We demonstrated that although the infection could be cleared, the horses remained seropositive for a long time."

Tick testing. During the height of the Texas outbreak, Scoles says, USDA inspectors from the Cattle Fever Tick Eradication Program were brought in to check all of the horses on the affected Texas ranch for ticks. The inspectors shipped the collected ticks to the USDA's National Veterinary Services Lab for species identification. The lab then sent the ticks to Scoles, who separated them into groups by species and put them onto horses to see if they would transmit disease.

According to Scoles' research, the ranch had two species of competent tick vectors: *A. mixtum* and *D. variabilis*. While this was the first report that *A. mixtum* could transmit *T. equi*, D. variabilis was already known to be a vector, although Scoles believes it is an inefficient one. "It would take a lot of ticks to cause the levels of infection we saw during the outbreak," Scoles says.

A third tick species, *D. nitens*, was also found on the infected horses. Scoles says that while it is known to be a vector of *B. caballi*, whether or not it

An update on equine piroplasmosis

Since November 2009, nearly 300,000 U.S. horses have been tested for equine piroplasmosis (EP). To date, 262 EP-positive horses (252 *Theileria equi*-positive and 10 *Babesia caballi*-positive) have been identified. These infected horses are unrelated to the 2009-2010 *T.equi* outbreak on a Texas ranch where natural tick-borne transmission was determined to have occurred for at least 20 years.

Of the 262 positive horses identified (most of which were quarter horse racehorses), none showed evidence of tick-borne transmission. The racehorses, specifically, were infected by iatrogenic transmission.

Options for EP-positive horses. All EP-positive horses are placed under state quarantine and owners are offered four options:

1. permanent quarantine
2. euthanasia
3. export from the country
4. long-term quarantine with enrollment in a U.S. Department of Agriculture (USDA) treatment research program.

The USDA program, introduced in February 2013, makes it possible for horses infected with *T. equi* to have a chance at being released from quarantine. To qualify for release, horses must complete the official treatment program, be proven cleared of the organism by a series of methods over time and test negative on all available diagnostics.

Of the 262 positive horses identified since November 2009, 162 have either died or been euthanized, 18 have been exported and 55 have been enrolled in the treatment research program. Twenty-six of the horses enrolled in the treatment program have met all of the test-negative requirements and have been released from quarantine.

In the case of the Texas ranch outbreak, 163 horses were enrolled in the treatment research program, and more than 140 horses have met all test-negative requirements and are eligible for release.

—Angela M. Pelzel-McCluskey, DVM, USDA Animal and Plant Health Inspection Services

>>> *Amblyomma mixtum*, one of the primary tick vectors for equine piroplasmosis during the Texas outbreak.

can transmit *T. equi* remains unknown.

Outcomes. The treatment program developed by Ueti and his colleagues saved 163 of the ranch's horses. The Texas Animal Health Commission and USDA worked with the ranch to keep the horses quarantined during treatment. The ranch also agreed to take back many of the infected horses it had sold to people in other states and add them to the quarantine.

Iatrogenic transmission

Not all U.S. outbreaks have been the result of vector-borne transmission, Scoles says: "For example, an outbreak in Florida in 2008 was caused by people transferring red blood cells between racehorses—a practice known as blood-packing (similar to blood-doping in human athletes)—in an effort to make the horses able to run faster." The outbreak, which occurred in illegal, unsanctioned racing circles, led to the euthanasia of 20 horses.[6]

Eradicating equine piroplasmosis in the U.S.

Thanks to the efforts of the USDA and other organizations, the risk of equine piroplasmosis transmission by ticks is relatively low right now. Part of the reason the USDA has fought so hard to eradicate the disease has to do with its effect on the American horse industry. "If we can claim that we are 'EP-free,' we can ship our horses anywhere in the world," Scoles says.

He adds that prior to the Texas ranch outbreak, most outbreaks could be traced to imported animals. Up until about 2005, serological assay was used to test horses imported to the United States, a practice that yielded a fairly high rate of false negative results and allowed infected horses to enter the United States. Until the 2009 Texas outbreak, most equine piroplasmosis cases in the U.S. could be traced to just such a scenario. In fact, according to the USDA, its epidemiological investigation ultimately determined that the likely source of the Texas ranch outbreak was movement of infected animals in the 1980s or earlier from the ranch's other properties located in South America.

USDA control procedures. State veterinarians and the USDA are responsible for enforcing piroplasmosis control procedures. While Scoles says euthanasia is the simplest solution, some state veterinarians allow for quarantines in which animals are constantly monitored to ensure they are contained in tick-free premises. In fact, in cases detected since 2010, most state veterinarians have supported the long-term quarantine with treatment option for infected horses.

In the Texas outbreak, there was no indication that the ranch was involved in any illegal or unhygienic activity that would have caused the outbreak (unlike the blood-packing incident in Florida in 2008). The ranch was cooperative and allowed USDA inspectors to perform tests to determine the extent of the outbreak. And since the quarter horses were high-value animals, it was incumbent on the state veterinarian to help find a solution to the problem that didn't involve putting down more than 200 valuable horses—a mission in which Scoles, Ueti and their colleagues were highly successful. **dvm360**

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USDA proposes amendments to Horse Protection Act

The proposal would strengthen anti-soring regulations and bring them in line with existing U.S. Equestrian Federation standards.

The U.S. Department of Agriculture's (USDA's) Animal and Plant Health Inspection Service (APHIS) has proposed amending the 1970 Horse Protection Act in order to better protect horses from soring, a practice in which horses are subjected to chemical irritants and mechanical devices to exaggerate their natural gate for shows, exhibitions, sales and auctions, a release from the agency states.

APHIS's proposal would modify the Horse Protection Act in two main ways, bringing it into alignment with current U.S. Equestrian Federation standards:

- **Current:** Horse industry organizations train, license and screen all horse inspectors. According to the USDA release, a 2010 audit by the Office of Inspector General found that several industry-trained inspectors have conflicts of interest.
- **Proposed:** The USDA would take over training, licensing and screening horse inspectors, who would be independent veterinarians or animal health technicians with no horse industry affiliations. These inspectors would be licensed and overseen by the USDA.
- **Current:** Regulations prohibit the act of applying chemical irritants to a horse's legs, though lubricants provided by show management may sometimes be used.
- **Proposed:** All foreign substances would be prohibited, including lubricants. The USDA also seeks to prohibit all action devices, such as boots and collars placed on a horse's lower legs, as well as all pads, which are stacked and placed between the hoof and shoe.

>>> Despite soring's decrease in popularity, measures are still being propsed to protect horses. (Photo courtesy of the Humane Society of the United States)

Congressman and longtime large animal veterinarian Ted S. Yoho, DVM (R-Florida), praised the announcement on his website, as it means the USDA is implementing portions of the Prevent All Soring Tactics (PAST) Act, a bill that has not passed Congress but has been widely supported by veterinarians and humane organizations.

"While the practice of horse soring is shrinking to a small number of entrenched loyalists," Yoho says in his statement, "there is no reason for its methods to remain in use. The industry and people who abuse horses for show had 40 years to phase out their ways. We are long overdue in stopping horse soring and [the] announcement by the USDA is a welcomed step in the direction of making these abuses a thing of the past." dvm360

>>> Susan Stover, DVM, PhD. (Photo courtesy of the University of California, Davis.)

UC Davis researcher Dr. Sue Stover inducted into Kentucky Equine Research Hall of Fame

A career in helping to better understand and improve equine orthopedics has led to the honor.

A lifelong dedication to improving the lives of horses everywhere has led to Susan Stover, DVM, PhD, a professor of anatomy, physiology and cell biology at the University of California, Davis, being inducted into the University of Kentucky Equine Research Hall of Fame.

According to a release from UC Davis, the award is given to scientists who have contributed significantly to equine veterinary science over the span of their careers.

Stover has concentrated on catastrophic fractures in racing horses in her studies. Her research has influenced training and rehabilitation, horseshoeing, track surface types and preparation, diagnostics, and fracture repair techniques with the result of improving racetrack safety for horses and jockeys. The primary focus of her research has been bone development and remodeling, the response of bone tissue to exercise and the pathogenesis of fractures and ligament injury.

Stover is the director of UC Davis' J.D. Wheat Veterinary Orthopedic Research Laboratory. She is the first female surgeon to have received the American College of Veterinary Surgeons (ACVS) Founders Award for Career Achievement and has been recognized by both her alma maters—Washington State University and UC Davis—as a distinguished alumnus.

The Kentucky Equine Reseach Hall of Fame is part of the Maxwell H. Gluck Equine Research Center in Lexington, Kentucky. Stover will be recognized during an induction ceremony on October 25 in Lexington. She will also present a seminar at the University of Kentucky Gluck Equine Research Foundation. dvm360

Placement Prac

Job placement service

The Placement Prac, an international provider company, has launched a new service for the veterinary industry to connect students with employers. The Placement Prac website is free for both clinics and students. Employers enter their clinic details, the type of placement available and job description, and upload photos to coincide with their advertisement. Students also enter their details and experience along with their résumé and photos.

For fastest response visit theplacementprac.com

USDA APHIS

Pet-travel education website

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) has launched a new website dedicated to international pet travel to help travelers and accredited veterinarians determine country-specific requirements. APHIS's previous site was designed for veterinarians and other animal health professionals who were familiar with technical regulatory language. Because of this, APHIS received hundreds of call a month from people seeking information on pet travel. The new site is designed to be easy for anyone to use. It provides information about taking pets from the United States to other countries and bringing pets into the United States. It applies to the following pets: dogs, cats, birds, ferrets, rabbits, rodents, hedgehogs and tenrecs, reptiles and amphibians. It also includes country-specific health certificates and instructions for completing them.

For fastest response visit aphis.usda.gov/aphis/pet-travel

Aratana Therapeutics

Postoperative pain medication

Aratana Therapeutics has announced FDA approval for Nocita (bupivacaine liposome injectable suspension) as a local postoperative analgesia for cranial cruciate ligament surgery in dogs. The company anticipates Nocita will be commercially available to veterinarians in the fall of 2016. The drug is a long-acting local anesthetic that lasts up to 72 hours after surgery by releasing bupivacaine over time from multivesicular liposomes deposited in the tissue. The therapeutic is administered as a single dose by tissue infiltration during closure of cranial cruciate ligament surgery in dogs.

For fastest response visit aratana.com

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Merck Animal Health

Topical parasiticide

Merck Animal Health has announced the FDA approval of Bravecto (fluralaner) Topical Solution for cats and dogs, a topical flea and tick treatment effective for up to 12 weeks after a single dose. It is available in a single-dose spot-on and is applied using a "Twist'n'Use" pipette. Bravecto Topical for dogs kills adult fleas and controls the black-legged tick, American dog tick, brown dog tick and lone star tick. Bravecto Topical for cats kills adult fleas and controls the black-legged tick and American dog tick. The cat topical is expected to be available later in 2016, and the dog topical product is expected to be available in early 2017.

For fastest response visit merck-animal-health.com

Blue Buffalo Co.

Therapeutic diets

Blue Buffalo has launched KS Kidney Support for Dogs and KM Kidney + Mobility Support for Cats, formulated by veterinarians and PhD animal nutritionists to help manage kidney disease. Both new products feature controlled levels of protein, phosphorus and sodium. The diets are complete and balanced with high levels of omega-3 fatty acids. Both KS and KM formulas feature antioxidants to reduce oxidative stress and L-carnitine to support muscle maintenance and body condition. In addition, both formulas are clinically proven to produce a calcium oxalate relative supersaturation of <3 and an average urine pH of 6.5 to 7.5.

For fastest response visit bluevetdiets.com

Bimeda

Redesigned website

Bimeda Inc. has launched a new U.S. website. The redesigned website is part of a global initiative toward improving the company's online presence and offering a streamlined customer experience. Bimedaus.com offers easy navigation to all product information, company news, a library of brochures, guides and articles, and a presentation of the company's 15 worldwide facilities. From the U.S. website, visitors can also access other regional websites and product-specific microsites.

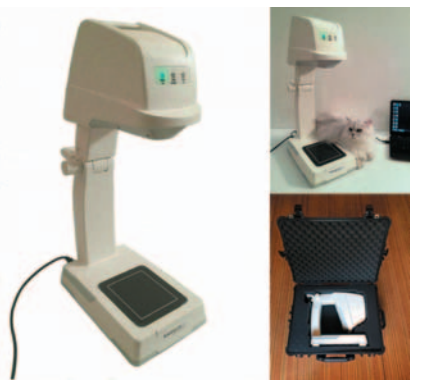
For fastest response visit bimedaus.com

VitusVet

Client communication smartphone app

VitusVet, a veterinary mobile app developer, has launched VitusConnect, an app designed for pet health professionals to text and picture-message their clients. VitusConnect is available free to veterinary practices through the iOS and Android app stores and does not require software installation on clients' phones. It includes an "export conversation" feature that allows veterinary staff to log their chat records in practice management software. By enabling veterinarians to initiate the conversation, VitusConnect helps build client loyalty and trust through proactive communication.

For fastest response visit vitusvet.com



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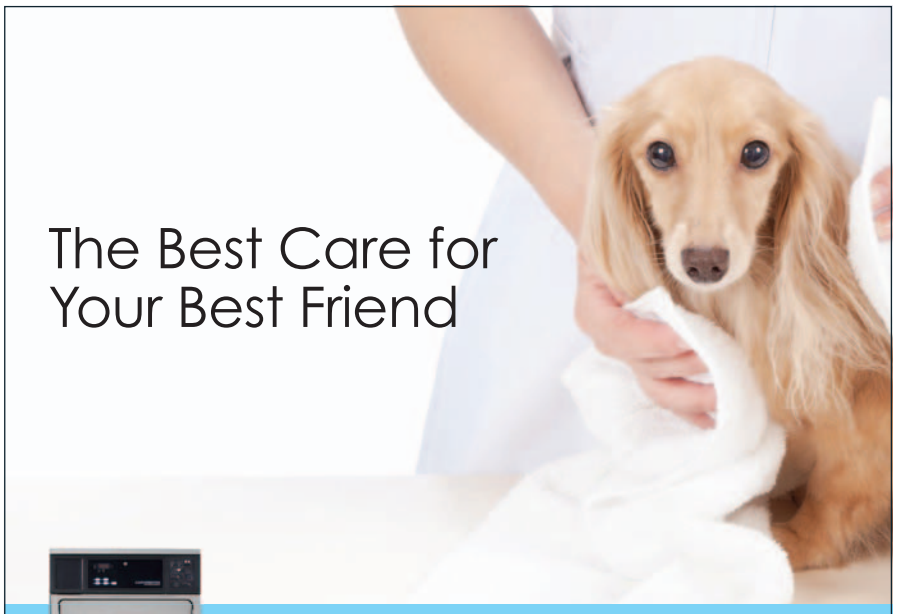

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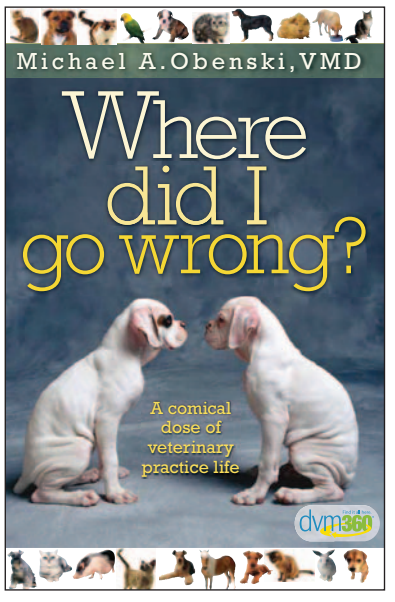

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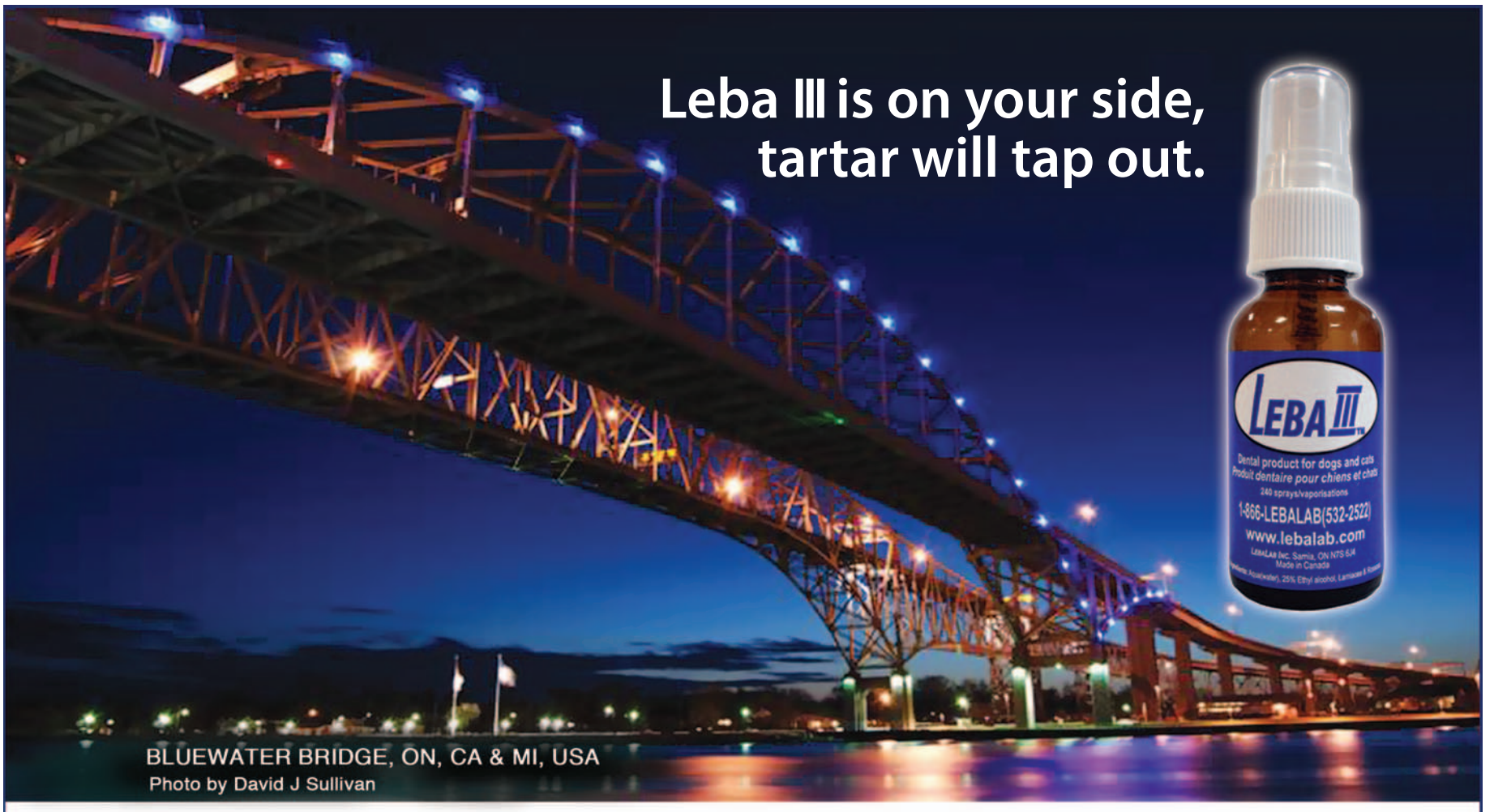

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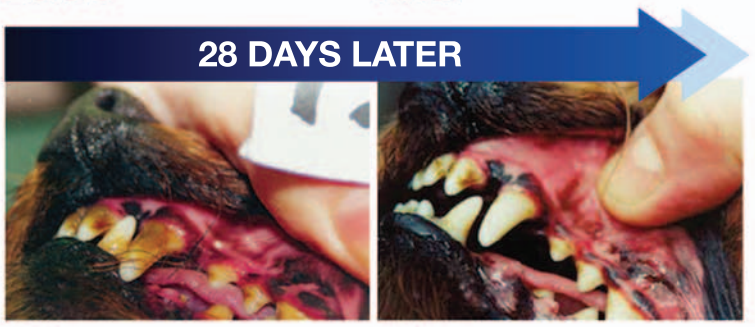

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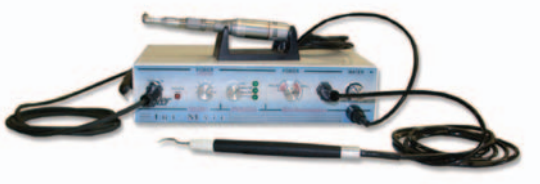

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Established, well-equipped animal clinic in the beautiful upper thumb area looking for an experienced mixed practice surgeon/medical vet. Practicing since the 1960s, this practice services 10,000 clients, plus has the advantage of being in the center of the Michigan tourist trade. We have an experienced support staff, highly trained and willing to lend support where needed. 2 year practical experience preferred, as well as ortho/soft tissue surgical skill. Competitive compensation with health/professional liability insurance, appropriate licenses and dues, and bonus available. Please submit resume to: hope.apples34@gmail.com or contact Rebecca Glasser @ 989 975-1200 or 989 269-8389

Mobile Unit for Sale

Georgia

1998 Dodgen Born Free 19' Mobile Vet Clinic. 23,277 miles. Exceptionally well outfitted incl. refrigerator, wet table, generator, and five cages. Priced to sell $15,000. 912-401-0344, hello@ivmdvm.com.

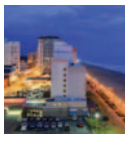
Practice for Sale

National

Equine: North Carolina - Add SA. Gross +/-$1m. 6,250sf, +/-5.5 acres. NC12.
Feline: Florida - 1,765sf freestanding leasehold. Turn-Key! FL84.
Feline: Florida - 2,400sf w/RE. 2-exam rooms. Estimated ADI $166K. FL86.
Feline: Missouri – 2,200sf leasehold. Upscale area! Estimated ADI +$110K. MO1.
Mixed: Iowa - 3,696sf, +/-.38 acres, 95% SA/5% LA. Estimated ADI $113K. IA1.
Mixed: Montana - 3-exam rooms. State-of-the-art equipment. Estimated ADI $125K.
Mixed: Texas - Multi-Doctor, Gross +/-$2.8M. +/-5.5acres. Turn-Key. TX5.
PS Broker
800-636-4740
psbroker.com
info@psbroker.com

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

December 8-11
CVC San Diego
(800) 255-6864, ext. 6
thecvc.com/sd



May 18-21, 2017
CVC Virginia Beach
(800) 255-6864, ext. 6
thecvc.com/vb

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

CVC unconventional

Here are the CE opportunities coming in the next few months

September 7-11
International Veterinary Emergency & Critical Care Symposium
Athens, GA
vet.uga.edu/events/lasertherapy

September 7
North Carolina Academy of Small Animal Medicine Meeting
Sanford, NC
(910) 452-3899
ncasam.org

September 8-9
Montana Veterinary Medical Association Fall Symposium
Miles City, MT
(406) 447-4259
mtvma.org

September 11
Fall Vet Derm Seminar
Portland, OR
(503) 352-3376
skinvetclinic.com

September 14-17
Veterinary Management School (VMS)
Lakewood, CO
(800) 883-6301
aaha.org/vms

September 23-25
105th Annual KVMA Meeting/43rd Mid-America Veterinary Conference Symposium
Louisville, KY
(502) 226-5862
kvma.org

September 24-25
Infectious & Vector Borne Disease for the General Practitioner Conference
San Diego, CA
(619) 640-9583
sdcvma.org

September 27-30
41st World Small Animal Veterinary Association Congress
Dundas, Ontario, Canada
(905) 627-8540
wsava2016.com

September 30 to October 2
California VMA Annual Fall Seminar, Palm Springs
Indian Wells, CA
(916) 649-0599
cvma.net

September 30 to October 2
Alaska VMA Annual Symposium
Anchorage, AK
(208) 922-9431
akvma.org

September 30 to October 2
Cornell University Donkey Welfare Symposium
Ithaca, NY
(607) 216-7724
donkeywelfare symposium.com

October 6-8
ACVS Surgery Summit
Germantown, MD
acvssurgerysummit.org

October 6-9
21st Annual ABVP Symposium
San Antonio, TX
(352) 244-3731
abvp.com

October 7-9
WSVMA Pacific Northwest Veterinary Conference
Snoqualmie, WA
425-396-3191
wsvma.org

October 12-16
Wild West Veterinary Conference
Reno, NV
(703) 978-7080
wildwestvc.com

October 15-18
2016 CanWest Veterinary Conference
Banff, AB, Canada
(780) 489-5007

October 17-20
Atlantic Coast Veterinary Conference
Atlantic City, NJ
(908) 281-5108
acvc.org

October 29 to November 5
The 32nd Muller-Ihrke Veterinary Dermatology Seminar on Maui
Kapalua, HI
(530) 304-3162
eduvets.com

November 1-5
The 17th Veterinary M-E-D (Medicine, Endocrinology, Disease) Seminar on Maui
Kapalua, HI
(530) 304-3162
eduvets.com

November 3-6
2016 American Association of Feline Practitioners Conference
Washington, DC
(908) 359-9351
catvets.com/education

November 4-6
AAVMC Veterinary Health and Wellness Summit
Fort Collins, CO
(970) 491-1642
conferences.colostate.edu/

November 4-6
2016 Potomac Regional Veterinary Conference
Washington, DC
(804) 346-2611
vvma.org

November 5
GVTAA Veterinary Technician Conference
Athens, GA
vet.uga.edu/events/vettech

November 5-6
9th 3 Rivers Veterinary Symposium
Pittsburgh, PA
(888) 550-7862
pavma.org

November 6
UC Davis 2016 Feline Forum
Davis, CA
(530) 752-3905
vetmed.ucdavis.edu/ce/

November 7-8
Rhode Island VMA Scientific Seminar
Newport, RI
(401) 751-0944
rivma.org

November 8
Preventive Care Workshop
Schaumburg, IL
(847) 240-1600
aaha.org/professional/education/preventive_care_workshop_registration.aspx

November 10
Preventive Care Workshop
Cincinnati, OH
(513) 794-0672
aaha.org/professional/education/preventive_care_workshop_registration.aspx

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A misstep in front of the Marlboro Men

They say that life goes full circle—but a nasogastric tube shouldn't.

I stood across the expanse of the horse clinic and watched Dr. Tyler Stevenson, our new veterinary intern from California, trying to pass a small catheter up a nasolacrimal duct in a horse. He was contorting his expression the way folks do when performing a task they thought would be easy but turns out not to be.

Tyler was working hard to get the catheter passed into the opening in the nose and then push a penicillin mixture up the duct and back out the eye. This retrogrades the mucoid mess that clogs up the duct back into the eye, where we can wipe it away and make a happy horse. It's quite impressive to clients to see the white fluid bubble up and drip out of the eye when the veterinarian is working down in the nose.

But Tyler was having a hard time. There was white fluid all over the floor in front of the horse but none coming out of the eye. I knew what he was doing wrong, but I just stood back and watched, letting my mind drift back to my first few days in practice. It's funny how life goes full circle …

Bending back to the past

It was 1990 and I'd been out of vet school just a few days when three hardcore cowboys showed up with a horse with colic. In vet school I'd been taught to pass a tube about as big around as your thumb and roughly 10 feet long through a horse's nose and down into its stomach. This is a procedure horse doctors do often in practice to relieve gas or reflux if there's a blockage causing stomach distension that may result in rupture or to put a laxative in the gastrointestinal tract if there's an impaction downstream. I did it twice in vet school, both times with an instructor standing next to me telling me what to do.

But my education on how and why to pass a nasogastric tube made no difference to me at this moment. I was about to have to do it in front of three dudes who looked like the Marlboro Man. I gathered the equipment and tried to act cool and confident as I began pushing the tube into the ventral nasal meatus of this bellyaching critter.

The thing just wouldn't go. I knew that once you hit the pharynx, you had to time the push of the tube with a swallow. It's an art. You lightly tap around on the back of the throat hoping to stimulate a swallow reflex. And when you do, you push the tube into the esophagus with the wave of that swallow. It wasn't happening. I could feel my blood pressure go up and my face contort into an expression that reflected having trouble doing something that should be easy but isn't.

Here's the rub: the longer that rubber tube stays in the pharynx, the softer it becomes from the heat of the region. I discovered this as my constant failed attempts had resulted in a nasogastric tube that was now bendy. And the force I was placing on the back of the throat caused the tip to bend and start coming back toward me. I finally felt a loss of resistance and assumed I was at last heading down to the stomach. But the tube had done a 180, and as I kept passing and pushing, it actually came out the other nostril!

There I was, standing in front of a horse with three high-eyebrowed cowboys wondering what the heck just happened. Before I could formulate a sentence, Dr. Chuck Deyhle, my 67-year-old mentor from Clarendon, Texas, was taking the nasogastric tube out of my hand and talking confidently to the three cowboys. He pushed the tube until about 10 inches of it was sticking out of the other nostril. He grabbed that end with his free hand and began pulling with one hand while he pushed with the other in a motion similar to what you do when you have both ends of a towel and dry your back off.

"Dr. Brock has passed the tube in one nostril and out the other in order to make sure the horse is not choked. He did an amazing job of getting this done. I will go ahead and put it down in the horse's stomach now and we will give it some mineral oil," he explained in such a calming voice that I even believed it for a second.

This old veterinarian was already my hero, but getting me out of such a humiliating situation without looking like a total buffoon made him climb even higher on the superhero scale.

After the horse and three cowboys departed, Dr. Deyhle caught me in the clinic and started laughing like crazy. "Big Doctor (what he always called me), I have been a veterinarian for 40 years and I have never seen or heard of anyone passing a tube up one nostril and out the other. I hope you didn't mind me stepping in, but I was watching from across the clinic and didn't want you getting too discouraged."

Circling to the present

Finally I went over and showed Dr. Tyler how to flush a lacrimal duct. I taught him why what he was doing wouldn't work, and I remembered my mentor rescuing me before I became too discouraged. It's funny how life goes full circle. **dvm360**

Dr. Bo Brock owns Brock Veterinary Clinic in Lamesa, Texas.

ILLUSTRATION BY MATT COLLINS

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U.S. Patent Nos. 6,797,289 and 8,753,697. For use under U.S. Patent Nos. 8,568,803 and 8,808,770. Additional Patent Pending.
*Source: Among veterinary brands. Survey conducted in February 2016 of small animal veterinarians who recommended oral joint health supplements.

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