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Dr. Andy Roark launches show

YouTube program designed to educate, inform and entertain.

page 24

February 2015 | Volume 46 | Number 2 | dvm360.com

The team pay report

It's no secret that veterinary team members are not the most well-off members of society. They do the work they do for love, not money, but many of them struggle to make ends meet—especially if they're supporting a family. This **dvm360 Leadership Challenge** takes a close look at what veterinary team members earn, how satisfied they are in their jobs, and whether they're sticking around in the profession. Plus, tips on how practice owners can pay team members more.

» Coverage begins on **page 6**

Indianapolis Star series questions veterinarians' ethics
page 28

Feline breast cancer research aims to help people, pets
page 20

One veterinarian's finest moment—becoming a zero
page 51

Kissing lesions: When kissing isn't a good thing
page M1

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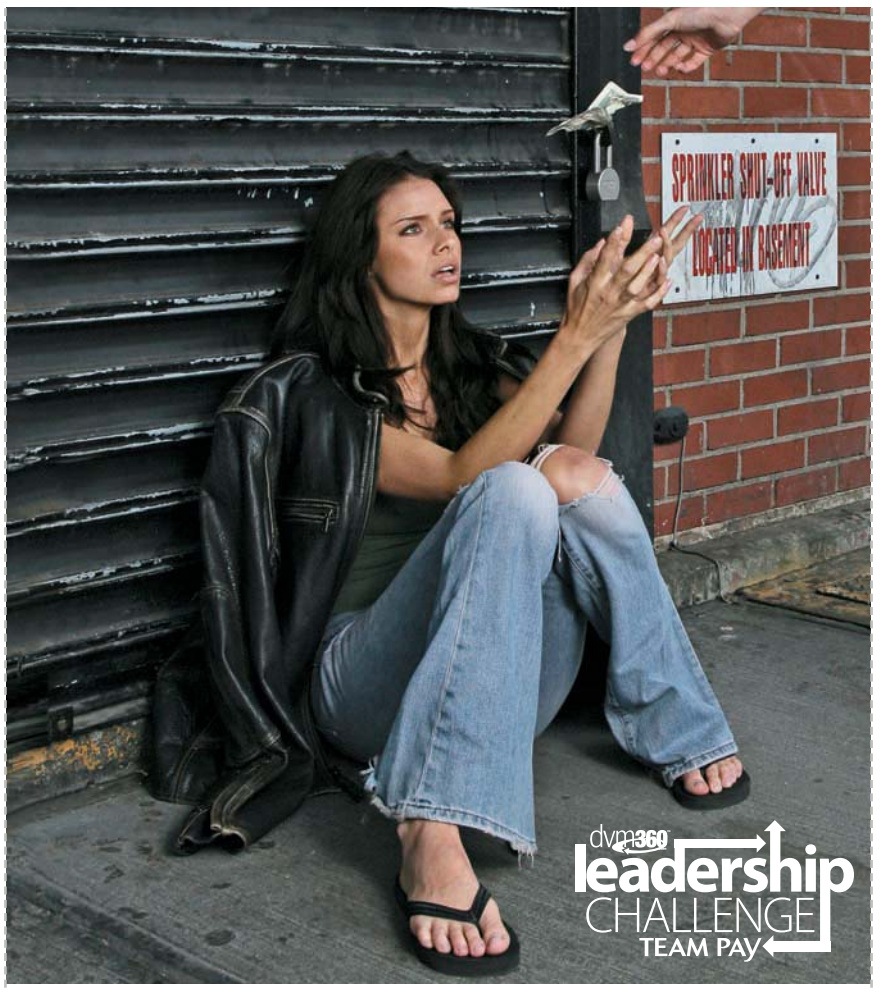
Volume 44, Issue 2



ON THE COVER

The veterinary team pay report

» *dvm360* brings you a first look at team pay data **page 6**

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Veterinarians and the media: *Some observations*

The folksy country doctor image is both a blessing and a curse.

If you are a television viewer, you may remember a number of years ago, in an early season of the medical drama *Grey's Anatomy*, the main character dating a veterinarian played by Chris O'Donnell. While Meredith Grey reported for surgical duty to a gleaming, state-of-the-art human hospital, her boyfriend toted a black leather doctor's bag filled with instruments that hearkened back to the early 1900s.

Seriously?

While I'd been working with veterinarians and animal hospitals long enough by that point to roll my eyes, I also recognized that this portrayal of the veterinary profession is common. The public is enamored with the idea of the old-school, warmhearted doc who does everything from delivering a calf out in the pasture to spaying a cat in his folksy, quaint clinic. In short—James Herriot. Or these days, Dr. Jan Pol of National Geographic's *The Incredible Dr. Pol* (his habits regarding pain control and sterile surgery notwithstanding).

This image works both for and against veterinarians, it seems to me. It feeds the public adoration and trust many people instinctively feel toward veterinarians, and that level of esteem in a community is never a bad thing (though some people believe that esteem is fading). On the other hand, it also feeds the assumption that veterinarians don't need to charge 21st-century-medicine prices for a corresponding level of medical care—and that they're morally and constitutionally obligated to provide that care for free if an owner can't afford to pay.

I've also heard some industry experts say that veterinarians' internalization of this folksy image holds the profession back on a fundamental level. I was speaking with one longtime veterinarian and consultant who mentioned, almost in passing, that the profession was inherently resistant to change.

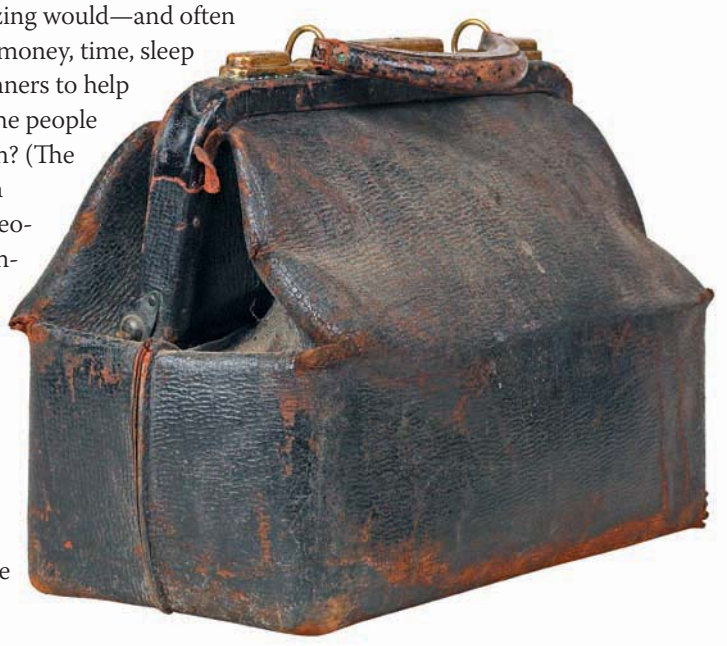
I stopped him and asked for clarification. Isn't everyone resistant to change? Are veterinarians truly more unwilling to accept change than dentists, physicians, pharmacists and so on?

Yes, he replied emphatically; they are more resistant to change. And much of that resistance is tied up in this romanticized old-school view of the country vet—an entrenched self-perception along these lines keeps veterinarians as a whole looking backward to the last century rather than forward to the next, he said. Interesting thought.

The specter of the warmhearted doc imparts another effect as well: It makes media exposés such as the recent series in the *Indianapolis Star* (see page 28) smart all the more. How dare journalists question veterinarians' ethics and motivations? Don't they know that those doctors they're criticizing would—and often do—sacrifice money, time, sleep and family dinners to help animals and the people who love them? (The thing is, much about the stereotype—the compassion, the sacrifice, the drive—really is spot-on.)

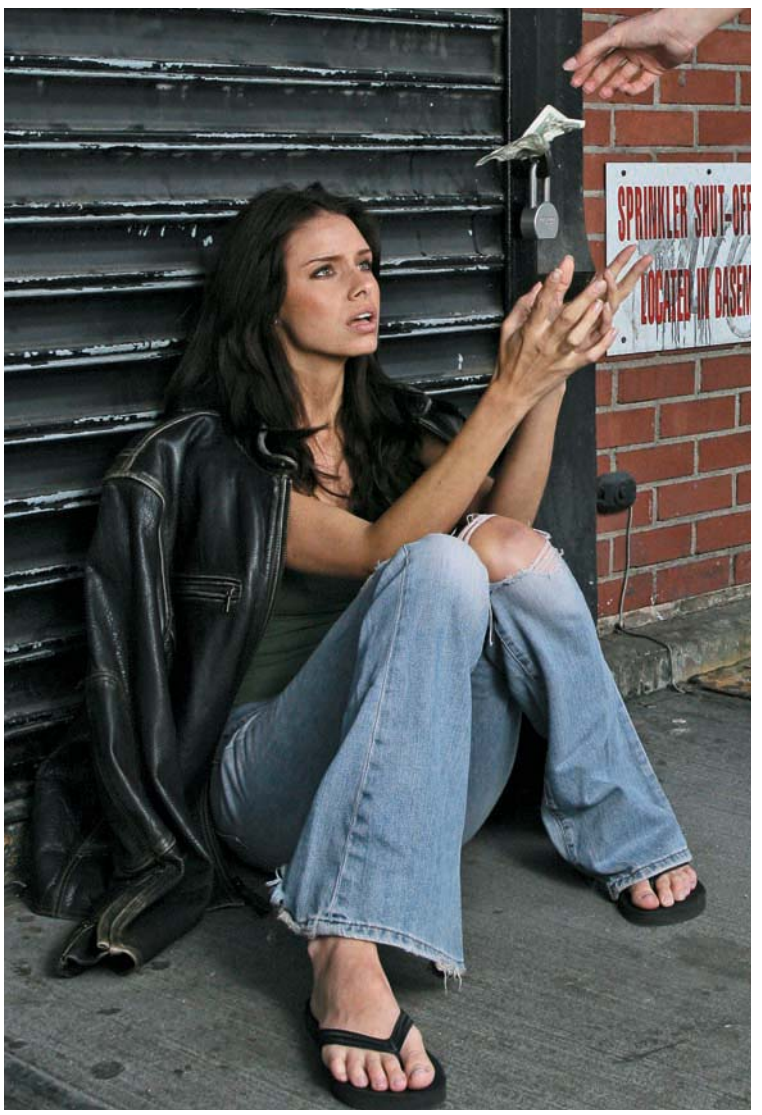
Personally speaking, I find myself becoming indignant on the behalf of the many wonderful veterinarians I've known over the years. And therein lies the problem—to want to have it both ways. I want veterinarians to be seen as the wonderful people they are—almost above criticism and critique, if I'm being honest—and at the same time I want society to get with it and realize that Chris O'Donnell's character is just as likely to be working in a high-tech specialty hospital as Meredith Grey.

So when I read a media critique of our profession, maybe I need to take a deep breath, squelch my instinctive defensiveness on the profession's behalf, and ask whether there's any legitimacy to what has been brought to light. Are pharmaceutical manufacturers too cozy with their customers? Would veterinary medicine benefit from being held to more stringent standards regulating what drug companies can and can't do to encourage use of their product? Is it a double standard to promote "the bond" as a practice driver and insist legally that pets are just property? These are questions worth thinking about. **dvm360**



GETTY IMAGES/HEMERA TECHNOLOGIES

The veterinary team **pay report**



This time last year *dvm360* presented a groundbreaking new package of data in a Leadership Challenge called "An ailing profession." In it, we took a hard look at veterinarians' financial health, and offered strategies and solutions that were designed to make you feel more in control of your future. This year, however, is the year of the team. Because there's no way around it—in order for pets to receive optimal care, they need assistance from the entire veterinary team. And yet, as the demands of daily practice life get wider in scope for both veterinarians and their team members, the compensation for these valuable team members is still stagnant, and in some cases, on a downward trend. Using data from the 2014 and 2015 *Firstline* Career Paths Study, *dvm360* brings you a first look at team pay—and why it should matter to you.

dvm360 leadership CHALLENGE TEAM PAY

On deck in your favorite veterinary publications

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The team pay report. A comprehensive overview of the veterinary team community, as measured by the 2014 and 2015 *Firstline* Career Path Study. Plus, tips on how to pay team members more—and why some may be leaving the profession.

firstline

A new way to look at team pay. Discover data from the 2015 *Firstline* Career Path Study and tips and tools to help technicians, receptionists, veterinary assistants and practice managers grow their careers in the New Year.

Veterinary economics

Up with revenue = up with team pay. Dr. Ernie Ward and other experts uncover the biggest non-secret around: If you want to pay team members more money, you need to earn more money. Here's how.

Veterinary medicine

Specialized technicians: Encouraging technicians to become certified in one of the 11 currently approved technician specialties is one way for practices to boost revenue and raise pay. *Veterinary Medicine* delves into the details of these specialties.

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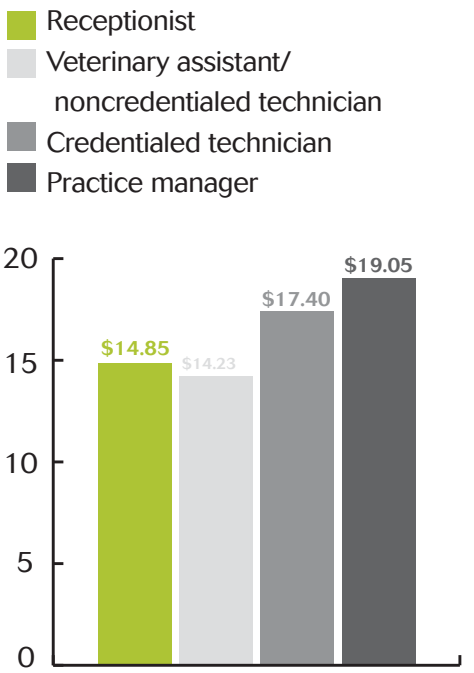
*When compared to clients without pet insurance. Source: VPI Consumer Awareness & Usage Study 2013.

dvm360 leadership CHALLENGE TEAM PAY

How—*and what*—team members are paid

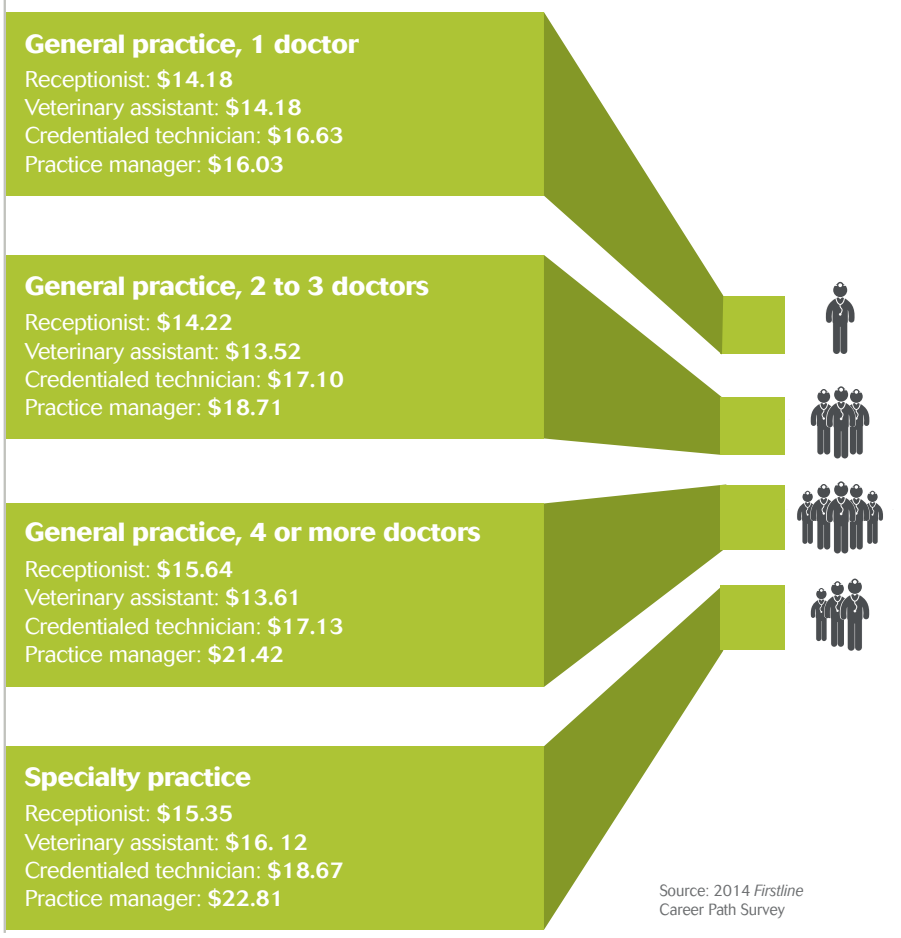
What is your hourly wage?



Salaried practice managers' average annual salary:
$48,849.50

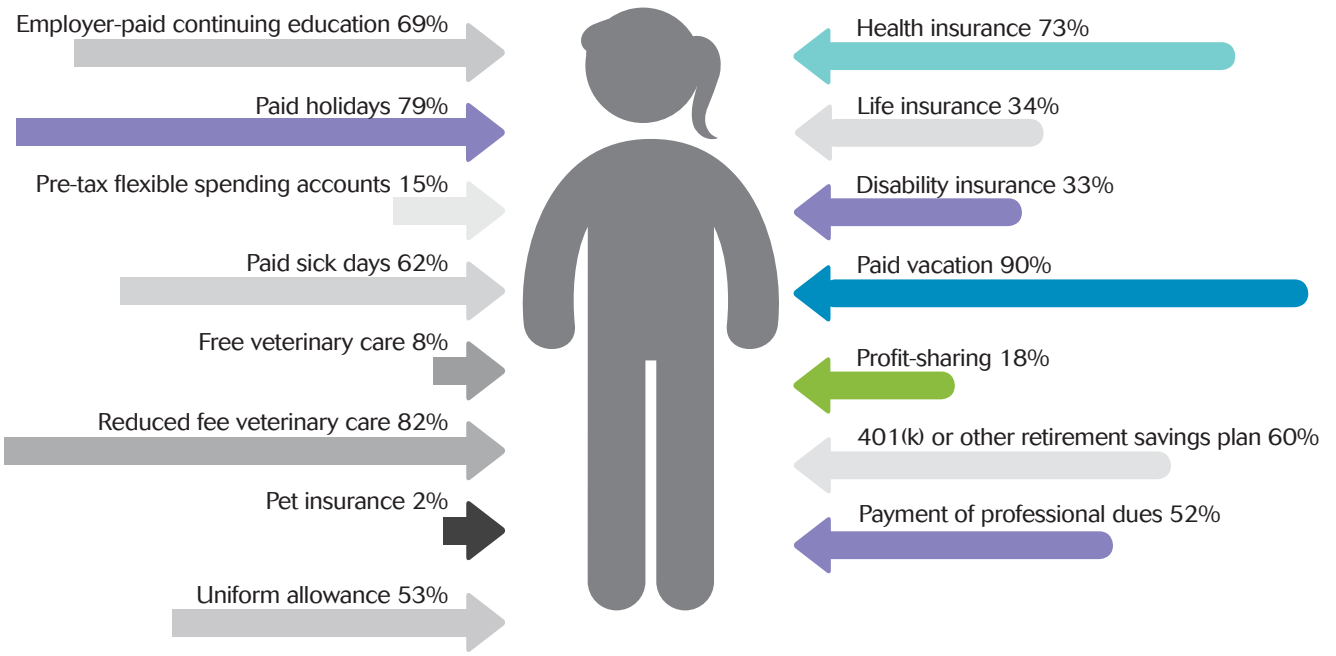
Source: 2015 *Firstline* Career Path Survey

Team pay by practice type



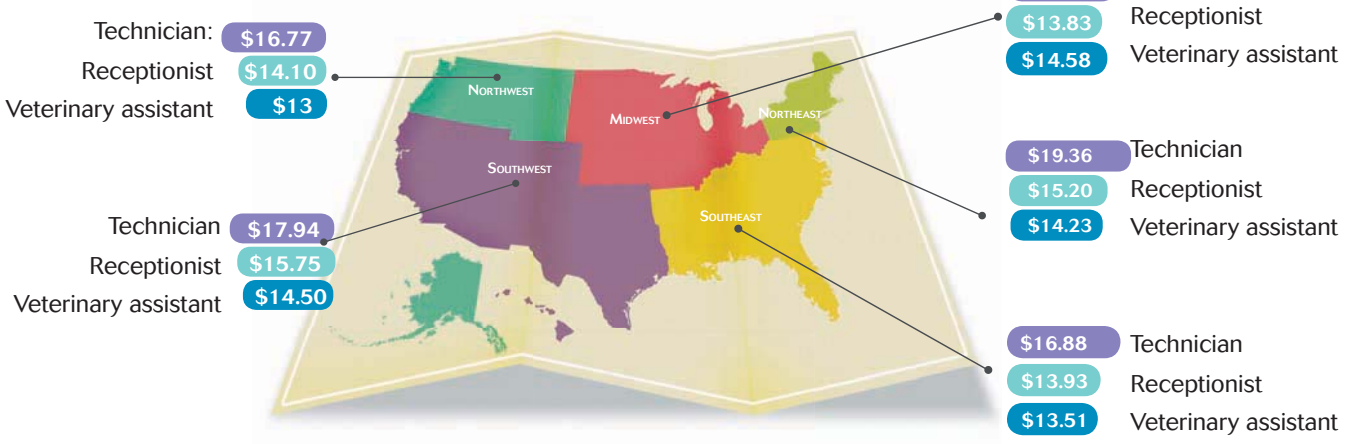
Source: 2014 *Firstline* Career Path Survey

What benefits do you receive?



Source: 2015 *Firstline* Career Path Survey

Team pay by region



Midwest: Ohio, Indiana, Illinois, Iowa, Missouri, Michigan, Minnesota, Wisconsin, Kansas, North Dakota, South Dakota, Nebraska

Northeast: Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Vermont, New Hampshire, Rhode Island, Maine

Northwest: Oregon, Washington, Idaho, Montana, Wyoming, Alaska

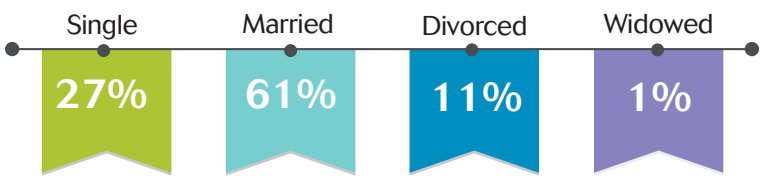
Southeast: Louisiana, Mississippi, Alabama, Georgia, Florida, Tennessee, Kentucky, North Carolina, South Carolina, Arkansas, Delaware, Virginia, West Virginia, Maryland, Washington D.C.

Southwest: California, Hawaii, Arizona, New Mexico, Nevada, Colorado, Utah, Oklahoma, Texas

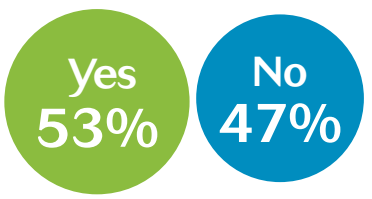
Source: 2014 *Firstline* Career Path Survey

Who are these team members anyway?

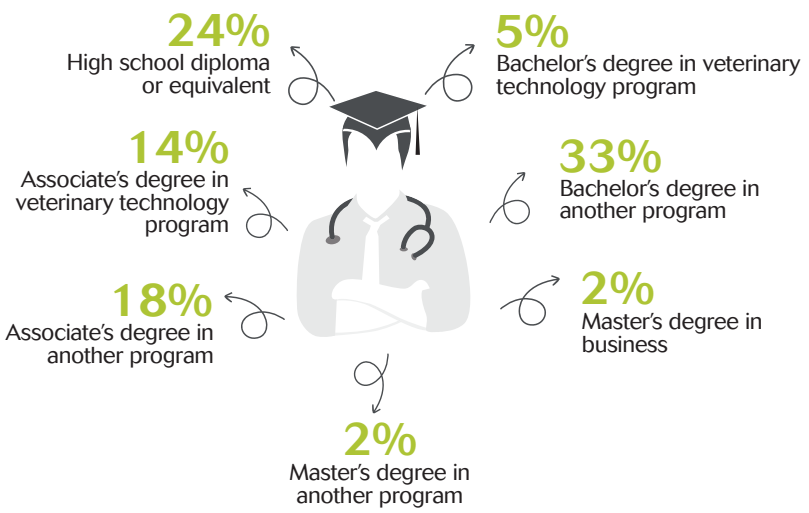
What is your marital status?



Do you have children?



What level of education have you achieved?



96% of veterinary team members are women

Source: 2015 *Firstline* Career Path Survey

Firstline readers: Cream of the crop

The data presented on these pages is taken from the *Firstline* Career Path Survey from 2015 and 2014. These surveys are sent to readers of *Firstline* magazine: technicians, managers, veterinary assistants and receptionists who have been in the profession a number of years—these veterinary team members are the cream of the crop! The 2015 survey received more than 500 team member responses, and the 2014 survey received about 1,200 responses. Note: Totals may not reach 100% due to rounding.

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*Source: Among veterinary brands. Survey conducted in February 2014 of small animal veterinarians who recommended oral joint health supplements.

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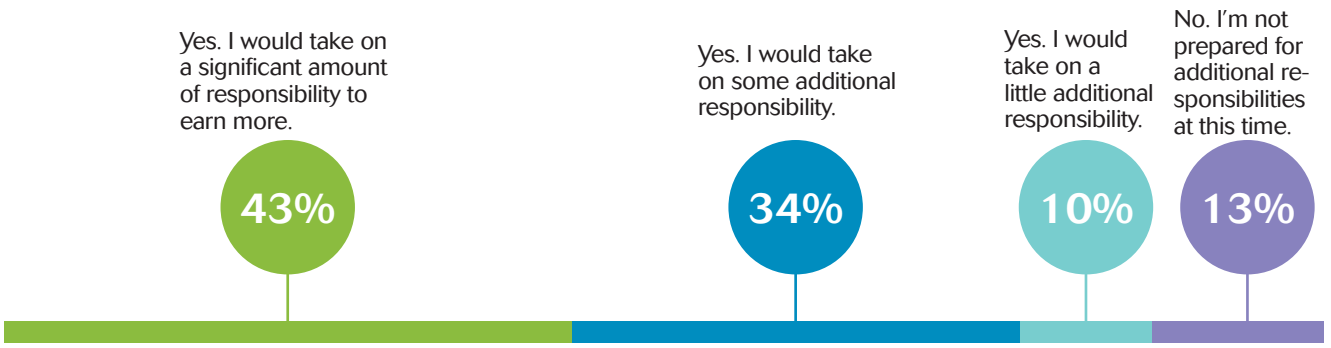
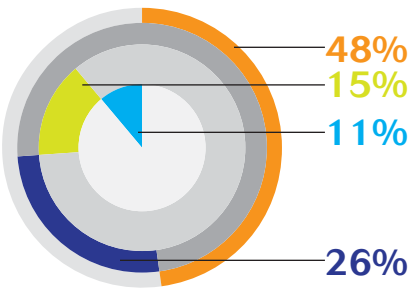
dvm360 leadership CHALLENGE TEAM PAY

Team members: *ready to earn more?*

Would you take on more responsibility at your practice if it meant you could earn more?

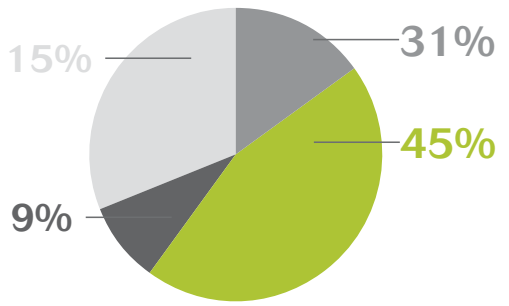




Would you pursue additional training to earn more?

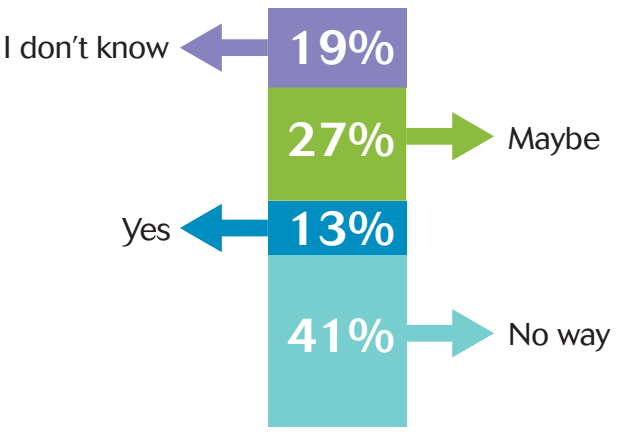
- Yes. I would be willing to pursue a degree or certification.
- Yes. I would be willing to pursue some additional training.
- Yes, but only if the practice compensated me.
- No. I do not have time for additional training right now

Do you feel you have any control over your pay?



- Yes. My personal decisions affect my pay.
- Some control. I chose my employer and expected my compensation to increase with experience.
- Little control. Every practice in my area pays the same.
- No control. It's all on my boss.

Would you be willing to move to a different city or state to earn more?



Source: 2015 *Firstline* Career Path Survey

Denise Tumblin: Efficiency is key to profitability—and higher team pay

A whopping 90 percent of practice owners who work with Denise Tumblin, CPA, a consultant in Columbus, Ohio, say a primary objective is to be more profitable so they can pay team members more. So how exactly do they do that?

Part of the problem, Tumblin says, is that many practices are overstaffed with underqualified people. Owners should hire fewer highly skilled employees, pay them more and maximize the work they do. Most hospitals would be better off with one $16/hour team member versus two $8/hour employees, she says.

In this approach, however, efficiency is key. Many practices think they need more people because they're inefficient. Want proof? One of Tumblin's *Benchmarks* studies showed that practices with a manager had lower staff costs—presumably because they focused on effeciency. Here are some of Tumblin's recommenations for practicing lean:

> Push work down to the lowest level. If you have a credentialed technician, she can do more for you than a veterinary assistant.

> Provide training. Be sure team members are able to increase their skills so they can take on more responsibility.

> Scrutinize processes for time-sucking weak points. For example, time spent sorting through unlabeled drugs on the shelf adds up.

> Perform a time audit. This effective tool can help identify where tasks are taking too long and standardize how long they should take.

> Automate. Electronic records prevent lost time spent hunting through paper files. Buy computers and train your staff to utilize them fully.

Here's an example: Tumblin works with a veterinary hospital in Hawaii that's a large 24-hour practice in a small building bringing in lots of revenue. The seven doctors produced about $716,000 each, and production is 21 percent of revenue. It has a 4.9 staff-to-doctor ratio. This hospital has figured out some keys to leveraging its team effectively.

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dvm360 leadership CHALLENGE TEAM PAY

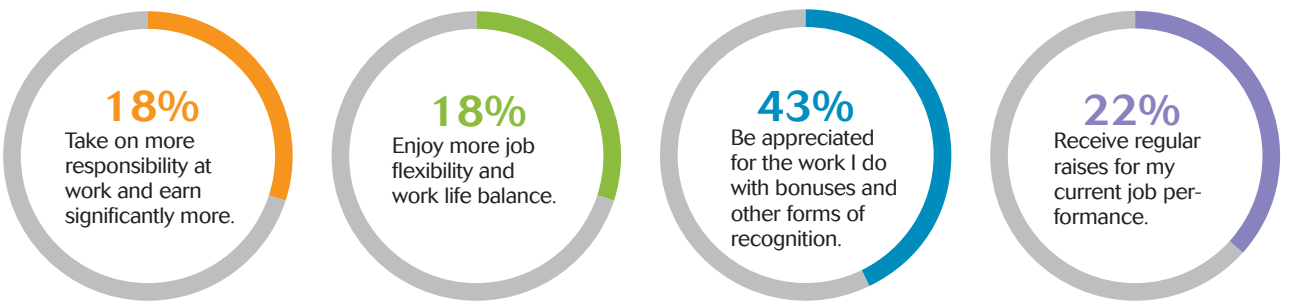
Team members' *job satisfaction*

Here's how team members ranked their priorities, with one being most important.

1	Pay
2	Working with doctors I respect
3	Working with a team I respect
4	Job flexibility, including family-friendly scheduling options and job sharing
5	Benefits
6	Working with a manager I respect
7	Opportunities for advancement
8	Paid continuing education

32% YES — Have you left one veterinary job for another veterinary job to earn more money? — **68% NO**

Which of the following is most important to your career satisfaction and life balance?



70% YES — Do you think you'll be working in the veterinary profession in 10 years? — **30% NO**

Go, team, go!

So what can team members do to reinvigorate the market and earn more? Check out the videos, roundtable discussions, quizzes, handouts and tools at **dvm360.com/teampay** to get your team (or yourself) on track.

Find it all here dvm360.com

Finally ... What team members say

Why I WILL be in the profession in 10 years:

I love working with animals and using what I have worked hard to learn. Pay is not nearly as important to my job satisfaction as knowing that I am helping pets and people, and challenging myself and learning!

This is where my heart is.

Yes, there are always days when you just want to bang your head on a wall, or if you get anal glands on your scrubs one more time you are going to scream. Yet, overall the patients who are happy to see us, along with their "parents," more than make up for all of the frustrations.

Why I WON'T be in the profession in 10 years:

Being single with a mortgage and other financial responsibilities, I am struggling to make ends meet just to work in the field I love.

The pay and lack of benefits and lack of appreciation by owner.

The work I do is physically demanding, and I do not earn enough money to work in my profession long term.

Source: 2015 *Firstline* Career Path Survey

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Federal panel continues recognition of veterinary accreditation process

However, AVMA Council on Education must work to resolve outstanding issues, reach out to all stakeholders. *By John T. Adams III*

A panel of the U.S. Department of Education voted Dec. 11 to continue recognition of the American Veterinary Medical Association Council on Education (AVMA-COE) as the accrediting agency for veterinary schools. However, during its fall meeting, the National Advisory Committee on Institutional Quality and Integrity (NACIQI) also voted to require the COE to address issues that remain unresolved since they were cited in a 2012 review, recommending a deadline of six months to one year to come into compliance.

Controversy stems from what critics say are looser standards of accreditation for foreign schools and from COE acceptance of distributive education, in which students receive clinical experience at community veterinary practices instead of a university teaching hospital.

Critics also claim the agency is unduly influenced by its sponsor, the AVMA, with some recommending a new body to accredit veterinary schools.

"Standards are vague, inconsistently enforced, and deliberately 'weakened' to justify, retrospectively, the accreditation of substandard schools."
—Critics' comments on the AVMA Council on Education

Written comments oppose COE

Of more than 1,000 written comments submitted to the committee on whether the government should continue to recognize the COE, more than 900 expressed opposition, leading to NACIQI staff concerns that the COE is not widely accepted by its stakeholders, as required in federal regulations.

According to the Department of Education staff report prepared for the NACIQI meeting, the commenters' concerns allege:

> "Standards are vague, inconsistently enforced, and deliberately 'weakened' to justify, retrospectively, the accreditation of substandard schools."

> "There is undue political influence on the accreditation standards and policies of the agency" by the AVMA and the American Association of Veterinary Medical Colleges (AAVMC), which appoint COE members. The report cited complaints that the COE "acts at the whim of the professional association, whereby the interests of the professional members may be in direct conflict with the profession and the public good."

> The accreditation of "substandard schools that lack a robust research enterprise, and inadequate supervision and clinical training of veterinary graduates."

> The AVMA executive board "improperly" decided to accredit foreign veterinary schools although it is "strongly opposed by the veterinary community."

The report notes that while the COE has revised its policies and practices since the 2012 review, it still has not demonstrated wide acceptance among veterinary educators and practitioners.

Addressing the NACIQI panel, COE Chairman Frederik J. Derksen attributed the controversy to "opinion leaders who don't like what we do." The majority of AVMA members support accreditation of foreign schools, he said, citing a recent ballot in the association's House of Delegates in which 80 percent were favorable.

The COE, he said, takes care "to ensure standards are applied to all schools, regardless of location" and attributed some of the complaints to economics. A number of veterinarians think there are too many veterinarians in practice, "which depresses income," he said.

The 14 accredited foreign schools "are the best … in the world. There are others that would like to be accredited but don't meet the standards," Derksen said.

"By any measure that we use, [foreign schools'] outcomes are comparable to any schools in North America," he said. Student attrition, job placement and professional examination pass rates are "the same" in foreign and U.S. schools.

Speakers split on recognition

Of the 19 commenters who spoke at the meeting, 10 voiced support for continued recognition of the COE as an accrediting body and nine were opposed. Speakers on both sides of the issue included:

Sheila W. Allen, DVM, MS, DACVS, dean of the College of Veterinary Medicine at the University of Georgia and a former member of the COE.

Allen said that since the 2012 report, which found noncompliance with Department of Education regulations in several areas, the agency has "carefully considered input from stakeholders." In response, she said, "a number of positive changes have been made that

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improved our policies or procedures."

One change has been in the way COE members are chosen, she said. Previously, decisions on membership were made by the AVMA. After the 2012 findings, the AVMA and AAVMC make appointments jointly.

Eric Bregman, VMD, past president of the New York State Veterinary Medical Society and chairman of the organization's committee on accreditation.

He said the panel should withhold recognition of the COE "until the quality and integrity of the accreditation process is ensured."

"Standards have been broken and applied with astounding inconsistency," Bregman said, with the result being "substandard schools."

In response to a NACIQI member's request for evidence of inconsistency, Bregman said that "as a practitioner, it appears the standards are being continually massaged to meet the needs of the schools."

He called for "some objective measure of whether the standards are being applied evenly and consistently."

Bregman said the COE, sponsored and staffed by the AVMA, should have its own staff, budget and legal counsel, creating "an impenetrable firewall between the agency and its sponsoring organizations."

Asked if a better alternative would be for the COE to seek more inclusion and make internal changes in its procedures, he said, "That's something I'd be receptive to and something I'd be willing to participate in."

Nancy O. Brown, VMD, DACVS, DACVIM, owner of Hickory Veterinary Hospital in Pennsylvania.

Brown agreed with Bregman. "The COE has failed and should be separated from the AVMA and moved to an independent agency," she told the committee.

Because the AVMA and AAVMC both appoint COE members, they can influence the agency's deliberations, she said. Instead, Brown suggested, the accrediting agency "should be placed in the hands of educators and others who believe in providing our passionate students a respected, healthy and profitable career."

Trevor Ames, DVM, dean of the University of Minnesota's College of Veterinary Medicine and president of the AAVMC.

Ames said he was representing all 35 accredited veterinary colleges in the United States and Canada and 14 more in other countries in supporting the COE as a recognized accrediting agency. "The present system is a standards-driven, evidence-based process," he said. "The COE is constantly evolving to meet the needs of the medical veterinary profession."

"The present system is a standards-driven, evidence-based process. The COE is constantly evolving to meet the needs of the medical veterinary profession."

—Trevor Ames, DVM, dean, University of Minnesota College of Veterinary Medicine; president, AAVMC

Cyril Clarke, PhD, dean of the Virginia-Maryland Regional College of Veterinary Medicine and a member of the COE.

Clarke said the negative comments are "intended to limit the veterinary workforce" and asked the committee to fully recognize the agency.

The COE's acceptance of distributive education as an alternative to on-campus clinical experience is an example of "new approaches to letting people learn in real-world situations," he said.

Citing his college's recent accreditation evaluation, Clark said, "I can assure you that the … procedures were rigorously and fairly applied in an objective manner.

"I recommend that the COE be accorded full recognition," he said. "The COE has demonstrated its ability to adapt to the changing needs of the public, the profession, as well as academia."

Eden Myers, DVM, self-described as "the only general practitioner you're going to hear from today."

Myers said she was one of the volunteers who created the web form for the veterinary public to submit negative comments about the COE to NACIQI. "We did not create the discontent those comments revealed to you. We simply enabled it all," she said.

The chief issue, Myers said, is what she called "political entanglement" between the COE and the AVMA. "The agency is housed within the trade association. Both the trade association and the agency work diligently to stay separate, but they can't."

Frank Walker, DVM, a North Dakota veterinarian, treasurer of the American Association of Veterinary State Boards and a former member of the COE.

Walker said that from his experience, the COE has not been responsive to its critics and does not have wide acceptance among its stakeholders.

"The process or system is broken," he said. "The agency has not responded to engage third-party commenters, such as myself."

Jeffrey Klausner, DVM, chief medical officer, Banfield Veterinary Hospital, a national chain of pet hospitals.

Klausner voiced support for the standards set by the COE. "My role is to ensure the quality of the veterinary work done in over 900 hospitals and ensure the quality of our 3,000 veterinarians," he told the committee. "We monitor everything that can be measured, from state board complaints to anesthetic deaths doctors have had," and Banfield has seen "no difference in competency and skills from one school to the next."

The NACIQI recommendation, along with the Department of Education staff analysis, will be forwarded to U.S. Education Undersecretary Martha J. Kanter for a final decision on reaccreditation of the COE. dvm360

John T. Adams III is a freelance writer in the Washington, D.C., area.

dvm360 Find it all here

A deeper dive

> To read more on the AVMA Council on Education controversy, visit dvm360.com/reimerjanuary.

> To keep up with breaking news in the veterinary profession, sign up for the Full Circle e-newsletter at dvm360.com/em.

ONTARIO, CANADA

Pets and people: Feline breast cancer study hopes to find better treatments for animals and humans

Patients receive two vaccines, one before surgery and one after.

Researchers at the Ontario Veterinary College (OVC) and McMaster University's Immunology Research Centre have joined together to treat breast cancer in cats using new vaccines designed to boost the immune system and kill tumor cells without harming healthy tissue, according to a University of Guelph release. The trial may lead to better treatment of breast cancer in animal and human patients.

Breast cancer occurs naturally in cats and is similar in many ways to the disease in humans. Trials may answer important questions about the disease that studies involving artificially induced cancer in laboratory animals cannot.

>>>Maci, the first patient in the trial receives a vaccine.

Cats participating in the study receive two vaccines, one prior to surgery and the other afterward. Each vaccine contains a virus modified to carry three genes associated with breast cancer. The first injection is a nonreplicating adenovirus intended to trigger an anti-tumor response, according to the release. The second is an intravenous infusion about a month after surgery. It delivers an oncolytic Maraba virus that replicates only in tumor cells, targeting and killing them. **dvm360**

State ROUNDUP

A look at the world of animal health

ARIZONA

Land along SR 260 in the Verde Valley will be the home of the University of Arizona veterinary extension campus, according to the *Camp Verde Bugle*. The university is going to build next to a wildlife animal park on land donated by a local rancher. The facility will have two purposes—serving as an extension of the university's horticulture programs and as home base for the veterinary medical program.

According to the *Bugle*, the building won't be completed for a decade, but the program will be fully implemented by August 2016. The Verde campus will provide a site from which students will travel to nearby ranches.

CALIFORNIA

A court in California approved a settlement in fall 2014 that ordered a nonveterinary pet-teeth-cleaning operation to pay $150,000 restitution for the unlicensed practice of veterinary medicine, according to *JAVMA*.

A California Department of Consumer Affairs investigation found that Canine Care Inc. used scalers to perform anesthesia-free pet teeth cleaning statewide without veterinary supervision. It is illegal in California to use scalers, instruments or devices to clean a patient's teeth without veterinary supervision.

According to *JAVMA*, the restitution will be paid to consumers, the Veterinary Medical Board and county governments that were involved in the investigation and legal action. Additionally, the company and its employees are prohibited from practicing veterinary medicine unless they have the necessary licenses.

FLORIDA

A Winter Haven, Florida, veterinarian was arrested after a co-worker reported to police that she had stolen a narcotic from their clinic, according to the *Orlando Sentinel.* Alicia Grasso-Gutierrez, 38, of Orange Park, was charged with felony counts of theft of a controlled substance and possession of hydromorphone. Grasso-Gutierrez had been working at the clinic just a month when the theft occurred.

According to the *Sentinel,* Grasso-Gutierrez came in on her day off and was acting strangely. Through the clinic's closed-circuit camera a co-worker saw her take a bottle of the narcotic and hide it under some paper. She then left the office and returned a few minutes later and put the bottle back. When the co-worker checked the bottle, the seal was broken.

Grasso-Gutierrez told deputies she'd started taking painkillers for her back pain and had become addicted, the *Sentinel* reports.

GEORGIA

The Entomological Society of America has presented University of Georgia entomologist Nancy Hinkle, MS, PhD, with the 2014 Recognition Award in Urban Entomology for her studies of insects considered pests in the human environment—including pests that are sometimes imagined, according to a university release.

Hinkle has worked as a medical-veterinary entomologist for the College of Agricultural and Environmental Sciences' entomology department at the university since 2001, primarily with insect pests that affect the poultry industry. She has also researched various insects that affect humans, from fleas to head lice to mosquitoes. Her interest in blood-sucking insects has led her to become one of the nation's leading experts on delusional parasitosis, the release states.

Currently, Hinkle is working on control methods for avian mites, pest flies and

PHOTO COURTESY OF ONTARIO VETERINARY COLLEGE, UNIVERSITY OF GUELPH

darkling beetles that carry *Salmonella* and can transmit it among poultry flocks, according to the release.

MASSACHUSETTS

The world's oldest Janus cat—a cat with two faces—has passed away at the age of 15, according to the *Telegram of Worcester*. The cat, named Frank and Louie, was receiving treatment at the Cummings School of Veterinary Medicine at Tufts University, says owner Martha Stevens. The university veterinarians told Stevens that the cat was probably suffering from cancer. Frank and Louie had initially been brought into a Tufts clinic to be euthanized in September 1999, but Stevens was determined to save him—beginning with tube-feeding him until he was three months old, the *Telegram* says.

MONTANA

A shortage of large animal veterinarians in Montana has led to a new program at Montana State University to produce veterinarians to fill this need in partnership with Washington State University and Utah State University, according to the *Billings Gazette*. The program guarantees 10 spots in the WSU program for MSU students, who complete one year of their postgraduate work at MSU before transferring to WSU. The Utah State students study there for two years before leaving for WSU. Students enrolled in the program have to be Montana residents.

The American Veterinary Medical Association's Council on Education will visit MSU to approve accreditation, as long as the Montana Legislature agrees to fund the program in future years.

NORTH CAROLINA

The North Carolina Department of Agriculture's veterinary division has banned the use of gas chambers for euthanasia performed at animal shelters, according to the *Charlotte Observer*. Shelters have until February 15 to make the switch to lethal injection. Gas chambers will be permitted only for unusual and rare circumstances, such as natural disasters and large-scale disease outbreaks, the ban states.

TEXAS

A federal appeals court has heard questions surrounding the First Amendment and the practice of veterinary medicine in the case of Ron Hines, DVM, of Brownsville, Texas, according to *TexasLawyer.com*. Hines is a retired veterinarian whose license was suspended in 2013 because he gave online advice to pet owners without having hands-on contact with their animals first. Hines alleges his free speech rights were violated. The Texas veterinary board sought to have the suit dismissed and filed an appeal with the Fifth Circuit after a district court ruled against its motion. dvm360

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* All doses are provided as tablets.

References: 1. Häggström J, Boswood A, O'Grady M, et al. *J Vet Intern Med.* 2008;22(5):1124–1135.
2. Lombard CW, Jöns O, Bussadori CM; for the VetSCOPE study. *J Am Anim Hosp Assoc.* 2006;42(4):249–261.

See brief summary on page 20

Boehringer Ingelheim

PET OWNERS: Tell us about parasite risks

In 2014, in an effort called Connecting with Today's Clients, the Companion Animal Parasite Council (CAPC), supported by Bayer HealthCare, surveyed U.S. veterinarians, veterinary team members and pet owners to gain some insight into whether all groups are on the same page when it comes to parasite control.

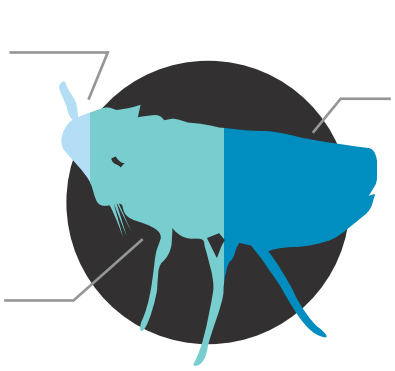
They interviewed 401 practicing veterinarians and 263 veterinary team members who work at least 30 hours a week in practices that see 75% or more small animals in a nonemergency setting. They also interviewed 2,000 dog or cat owners who had taken their pets to a veterinarian within the past two years.

Here we offer highlights from the study, which signal a need for better communication with clients about parasite control and concerns in your area. At **dvm360.com/CAPCstudy**, we have resources ready for you, as well as more of this study's findings from us and our sister publications—*Veterinary Economics*, *Veterinary Medicine* and *Firstline*.

90% of pet owners

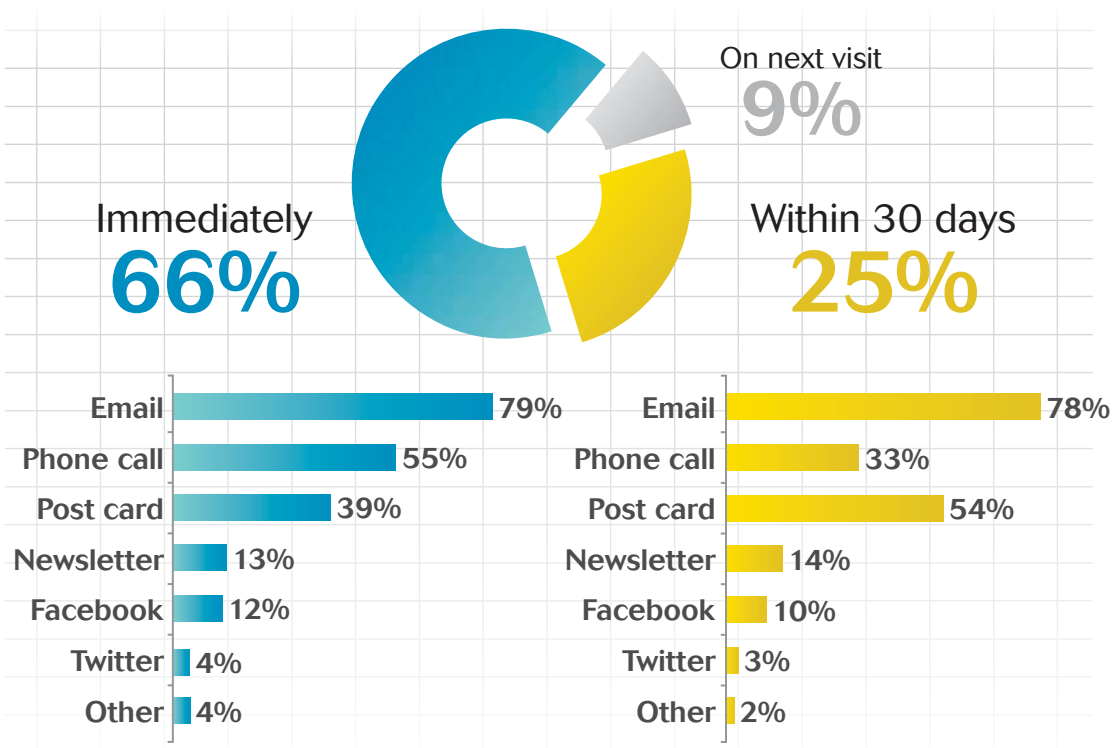
said yes to the question: Would you want your veterinarian to notify you about a high incidence of parasites in your county that could be a concern for you or your pet?

How likely would you be to make an appointment with your veterinarian to discuss parasites and get your pet tested?



89% of pet owners are likely to make an appointment to visit their veterinarian.

How soon would you want to be alerted by your veterinarian, and how would you like to be notified?



Questions for veterinarians:

Do you as a veterinarian have the resources available to track parasite prevalence and positive cases in your area?
Yes: 72% No: 28%

Almost 3 in 4 veterinarians say they have resources for current information on parasite prevalence in their area.

Do you track parasite prevalence and positive cases?
Yes: 20%
No: 68%
Not sure: 12%

BUT ONLY 1 IN 5 practices track positive parasite cases for their area.

Some answers to the question,

"Why don't you track parasite prevalence?"

- Don't have time/I'm too busy
- Don't have the means to do so
- Don't have the personnel
- Don't feel it's necessary
- Low incidence of parasitic disease in my area
- Don't know where to find the information
- Too much effort

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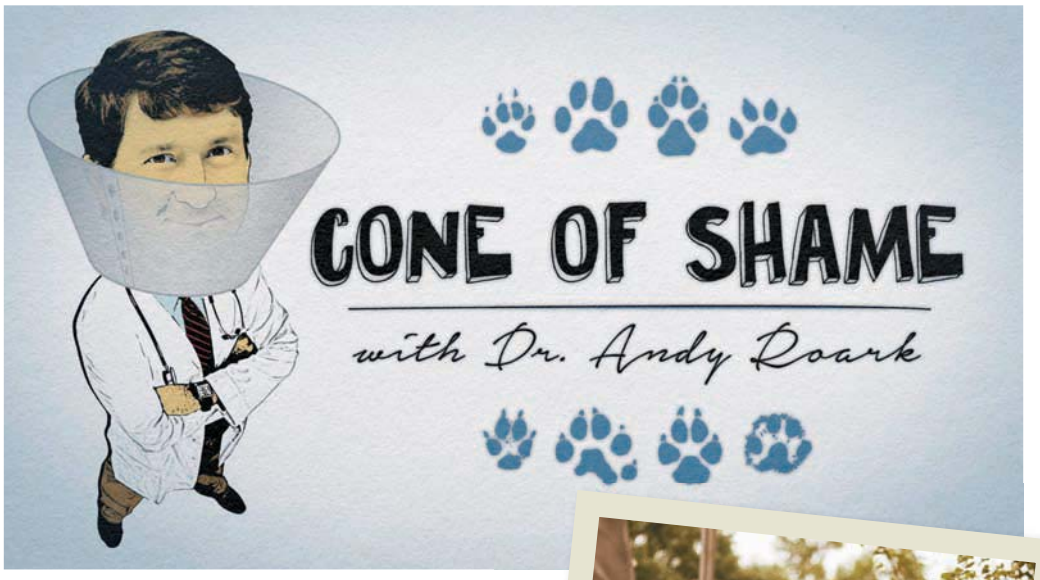
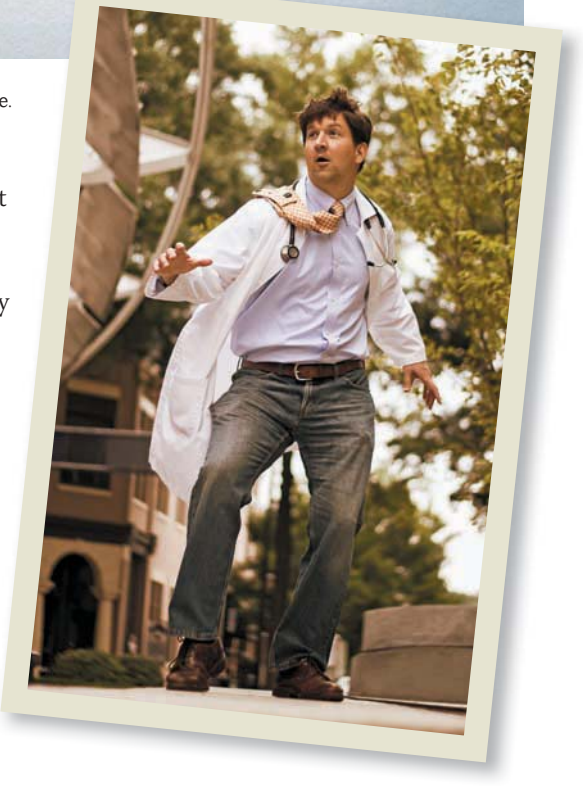
Dr. Andy Roark **debuts** YouTube show

Weekly program designed to educate, entertain pet owners. *By Brendan Howard*

Mixing knowledge and humor, Andy Roark, DVM, has created a YouTube show to help educate pet owners about a variety of veterinary issues.

Cone of Shame episodes are typically five minutes long and address such topics as applying parasite preventive and when a pet needs to visit a veterinarian. Roark says he hopes owners tune in every week and veterinarians share the show with their clients.





>>> "Two things make me happy about this," Roark says when discussing *Cone of Shame*. "I made exactly what I wanted to make. And I don't know anybody else who's making anything like this." For more photos and info, visit **dvm360.com/coneofshame**.

Roark, an associate veterinarian in Greenville, South Carolina, and frequent *dvm360* contributor, was inspired to launch the online series after the television news program *20/20* aired a controversial report in 2013 about veterinarians overcharging for services. YouTube offers Roark more creative freedom to engage viewers.

"The idea of other people being able to control [my message] bothered me," he says.

Roark is seeking ongoing sponsorship for the program, and he says sponsored messages will be identified.

"We clearly mark advertiser time," he says. "This is what I'm getting paid to say, but I'm not going to talk about anything that I don't like."

Roark, who films the show on a set in his basement, has already finished at least nine videos.

"One of the things we struggle with is [mixing] fun and credibility and education," he says. "That's what veterinarians struggle with. That's the biggest hurdle using humor as a veterinary clinic. We're telling people, 'Hey, this is fun, but I'm still a doctor and what I'm telling you is serious and legitimate and backed up by research.' " **dvm360**

'Let's be the people our pets deserve'—Andy Roark

Scan these QR codes to view *Cone of Shame* videos or visit facebook.com/DrAndyRoark.

5 Signs of a Pet Emergency (Stings, Staggering & Seizure Edition)
Roark uses Charlie Sheen, Oprah, *Tremors* and zombies to explain which situations warrant medical attention for pets.

10 Facts about the Mind of a Cat
Roark reveals why cats purr and the quality that would make them good interior designers.

Brendan Howard is editor of Veterinary Economics.

PHOTOS COURTESY OF DR. ANDY ROARK

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Ala. spay-neuter veterinarian guilty on only three charges

ASBVME rejected the judge's recommendation to find Dr. Margaret Ferrell not guilty on all 29 charges, but the 26 rulings they did agree on contradict long-held assertions by opponents. *By Julie Scheidegger*

Margaret Ferrell, DVM, Alabama State Board of Veterinary Medical Examiners (ASBVME) member and practicing veterinarian at Alabama Spay/Neuter in Irondale, Alabama, has been found guilty of three of the 29 charges made against her by the ASBVME.


Dr. Margaret Ferrell

That's after receiving a not guilty recommendation from Administrative Law Judge James Jerry Wood, who was appointed by the ASBVME to conduct the administrative hearing.

Ferrell faced 30 charges in an administrative complaint issued in July 2014. Charges ranged from violating the Veterinary Practice Act to malpractice.

After testimony from 12 witnesses of the ASBVME and one of Ferrell's lawyers, Judge Wood found Ferrell not guilty on 29 charges and dismissed the other charge altogether.

"Dr. Ferrell's methods are very safe and used all over the country. Dr. Ferrell is not dangerous."
—Phillip Bushby, DVM, MS, DACVS

However, celebration was limited. Despite the not-guilty ruling, the ASBVME had to accept—or reject—the recommendation. It did that Jan. 16.

Although requested, at the time of printing the ASBVME had not yet provided the board's official ruling in writing. However, sources tell *dvm360* that the guilty verdicts surround the charges related to current Drug Enforcement Agency (DEA) regulations and inventory report requests; allowing unlicensed persons to vaccinate or treat animals without required supervision and to administer controlled substances; and practicing veterinary medicine at times when Alabama Spay/Neuter did not have a premise permit. It is reported that Ferrell has been fined $250, sent a letter of reprimand and an additional letter of admonition.

The anticipated backlash

Some prominent voices have spoken out against low-cost spay-neuter clinics in Alabama for several years. The most public opponents, Robert Pitman, DVM, and Ronnie Welch, DVM, no longer serve on the ASBVME. In fact, Ferrell took Pitman's seat when Gov. Robert Bentley recently appointed her to the board.

Pitman and Welch transfered their positions of influence against the clinics to the Alabama Veterinary Practice Owners Association (ALVPOA), which was created in 2012 solely to oppose the low-cost spay-neuter clinics in Alabama. A recent letter from the ALVPOA rejected the recommendation of Judge Wood and urged veterinarians to contact present ASBVME members to express their concerns.

A key observation

Yet it was the testimony of ASBVME witnesses Pitman, Welch and Robert Horne, DVM, against Ferrell that caused Judge Wood to essentially dismiss their opinions. Not one of them has ever observed Ferrell at work. Wood deemed their opinions that Ferrell's physical exams, pre- and postoperative procedures and care, and surgical techniques did not meet the standard of care in Alabama, were not credible. He wrote that he recommends the ASBVME "find Dr. Ferrell not guilty on all 29 remaining charges in this complaint because none of the charges has been established by the preponderance of the credible unbiased evidence presented in the hearing."

Ferrell says after inviting nearly every veterinarian she's met since 2010 to her clinic, fewer than 10 of her colleagues have ever taken her up on the offer. "They're busy. I get it," she said.

However, when Phillip Bushby, DVM, MS, DACVS, Marcia Lane Endowed Chair of Humane Ethics and Animal Welfare, Department of Clinical Sciences at the Mississippi State University College of Veterinary Medicine, showed up unannounced in April last year, she couldn't have been more surprised. Or intimidated.

"In the spay-neuter world, he's a really well-known guy," Ferrell said. Bushby is a board certified veterinary surgeon who specializes in spay-neuter procedures and high-quality, high-volume spay-neuter techniques.

While the ASBVME's expert witnesses had not observed Ferrell's work, Bushby witnessed Ferrell handle 17 cases. His testimony states, "One needs to observe the surgery in order to properly comment on it. Other expert witnesses are inconsistent in testifying about something they have not observed."

Bushby testified that Ferrell is one of the best surgeons he has seen in 42 years. He contradicted the accusations of the board and its expert witnesses, saying Ferrell is well within the standard of care in the time she spends on a surgery, physical exams and postoperative care. "What Dr. Ferrell does is extremely high quality and exceeds national standards," he said, adding, "Dr. Ferrell's methods are very safe and used all over the country. Dr. Ferrell is not dangerous."

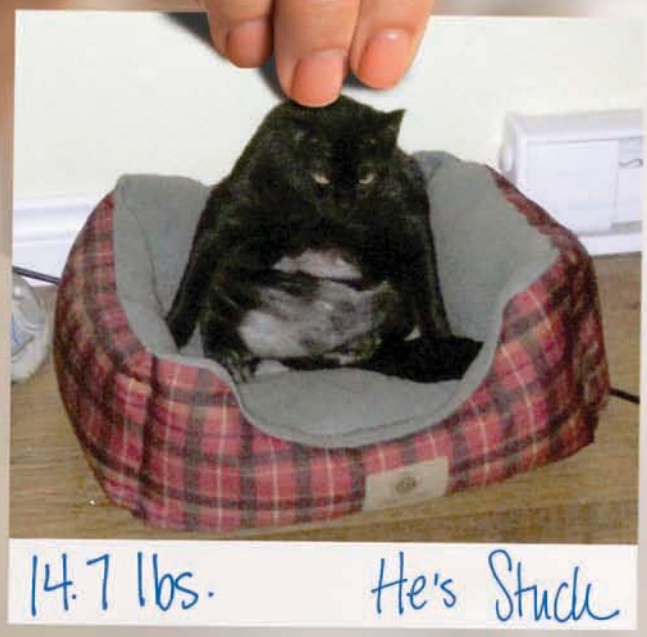
High-quality, high-volume techniques and hope

Despite the arguments of Pitman, Welch and Horne that that high-volume techniques are substandard, Bushby testified that techniques like the "pedicle tie" that he teaches are safer and faster. He said that more than half of the 30 veterinary schools in the United States that have a shelter medicine program teach high-quality, high-volume techniques.

Ferrell hopes perspectives will change. "Maybe the issue will go away in a few years—maybe," she said. dvm360

Action in Alabama

For continued coverage of Dr. Ferrell's case and discussion on high volume veterinary care, head over to **dvm360.com/alabama**.



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

Indianapolis newspaper series criticizes veterinarians' ethics

Responses mixed regarding industry's motivations. *By Matthew Kenwright*

Veterinarians and veterinary organizations are responding to *The Indianapolis Star* for its recent report "Pets At Risk," a series that criticizes veterinarians' relationship with drug manufacturers and implies that financial motivations often influence practitioners' decisions more than pets' and pet owners' best interests.

The series revolves around a central question: What is the value of a pet? It cites data suggesting that owners who consider their pets as more than just property spend more money on their healthcare.

And it describes companies' efforts to idealize the owner-pet bond, with the reality of animals' legal standing presented as a stark contrast. An excerpt states:

> *The industry that makes billions of extra dollars from people who consider their animals members of the family places a much lower dollar value on "the bond" when something goes wrong: $0.00.*

The story states that the American Veterinary Medical Association (AVMA) and other animal groups have resisted the concept of emotion-based damages when cases have come up in court:

> *"They trumpet the quantifiable economic value of the human-animal bond to vets at the cash register," said Chris Green, The Animal Legal Defense Fund's director of legislative affairs. "Then they pretend they have absolutely no value in the courtroom."*

And it emphasizes the financial consequences of assigning pets an emotional value:

> *"If tens of thousands of dollars are at stake every time a pet is injured or killed, pet litigation will become a cottage industry," wrote attorneys representing the American Veterinary Medical Association, the Animal Health Institute and other powerful associations in 2012.*

The newspaper's narrative also fosters sympathy for pet owners. Owners are featured with pictures of their dead pets:

> *The dog was panting and had abnormal lung sounds. Shortly afterward, Peaches deteriorated rapidly and was euthanized.*
>
> *"Her heart gave out," Gallo said. "Her liver. Other organs—just ruined."*

The series features photos of grieving dog owners.

Blurred lines

The report explores veterinarians' ties to the veterinary pharmaceutical industry at some length—ties the writer maintains are explicitly prohibited in human medicine. The reporter describes a scene from the 2013 AVMA annual convention, held in Chicago:

> *The vets, the nation's last line of defense against unsafe drugs getting to animals, were receiving a blizzard of meals, books, electronic gadgets and speaking fees from drugmakers.*

After describing the iPads, speakers and chargers that were offered to attendees as gifts, the reporter scrutinized the motivations of parasitologist Michael Dryden, DVM, PhD, who presented information on Activyl, Merck's flea control product (The reporter did not disclose that Dryden also speaks for Merck's competitors):

> *What Dryden didn't say was that Merck had paid him $56,705 to conduct research on the effectiveness of Activyl. Or that his research at Kansas State has received more than $5 million in industry funding in recent years.*

Overall, the picture painted of the veterinary drug industry was less than favorable:

> *The Star examined public records, studies and drug reaction data, and conducted interviews with company officials, pet owners, scientists, lawyers, epidemiologists, regulators and veterinarians.*
>
> *They told the story of an industry that is looking for ways to shore up declining revenues from human drugs, repurposing molecules that had an array of original uses for people and crops, and pushing government officials to speed up the approval process.*

The response

AVMA President Ted Cohn, DVM, published a letter to the newspaper's editor to criticize the coverage:

> *While you tried to paint a picture of veterinarians being beholden to pharmaceutical companies for monetary gain, you failed to cite even one specific case of impropriety or lack of professionalism.*

Jennifer Keenan, MVB, of West Lafayette, Indiana, wrote a letter to the *Lafayette Journal & Carrier* to share her experience attending the AVMA conference:

> *I feel safe in suggesting that most veterinarians attending were there to get the most up-to-date education and training to help improve the lives of our pets. Most of the educational lectures were not sponsored by a drug company and the "free stuff" amounted to some pens and notebooks.*

Bash Halow, co-owner of a veterinary consulting business based in Indianapolis and New York City, wrote to dvm360's *Veterinary Economics* to contest the series' suggestion that veterinarians are driven solely by profit:

> *If the reporter really had reviewed "thousands of pages" of documents before writing the article, then he must be aware that veterinarians in the United States donate a tremendous amount of time and expertise for the care of unwanted stray animals.*

However, not all veterinarians were critical. David Ramey, DVM, of Encino, California, supported the newspaper's scrutiny in a letter to the editor:

> *The Star should be commended for starting to examine the uncomfortably close relationship between industry and veterinary medicine. In human medicine, interactions between physicians and the medical/pharmaceutical industry have come under close scrutiny, and studies have concluded that physician-industry interactions seem to affect both prescribing and professional behavior.* **dvm360**

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*Brakke Consulting, Inc., a premier research and consulting firm that has worked with companies such as NCVEI and Bayer Animal Health, conducted a 4-year study commissioned by CareCredit, including 500 veterinary practices. For the full study published in 2011, visit carecredit.com/vetresearch.

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Monoclonal antibodies on the horizon in veterinary medicine

Canine osteoarthritis treatment undergoing field trials; lymphoma therapy granted USDA approval.

Two veterinary companies are making strides toward introducing monoclonal antibody therapy to the field of veterinary medicine. Nexvet Biopharma, a companion-animal-focused veterinary company with headquarters in Dublin, Ireland, is currently testing an osteoarthritis treatment, and Aratana Therapeutics, a pet therapeutics company in Kansas City, Kansas, was recently granted licensure from the U.S. Department of Agriculture (USDA) for a therapy targeting B-cell lymphoma in dogs.

Monoclonal antibodies, molecules that are engineered to mimic natural antibody proteins in the immune system, are increasingly being used in human medicine. Nexvet's first monoclonal antibody, NV-01, is in safety and effectiveness studies in the United States and Europe for the control of pain associated with osteoarthritis in dogs. Results are expected at the end of 2015, with preliminary data presented at the 2014 ACVIM Forum and in the *American Journal of Veterinary Research*.[1-2]

Monoclonal antibodies, molecules that are engineered to mimic natural antibody proteins in the immune system, are increasingly being used in human medicine.

NV-01 works by inhibiting nerve growth factor (NGF), which acts on pain-sensing nerve fibers to increase their excitability and increase the sprouting of new nerve fibers into inflamed tissues and is elevated in the joints of dogs with osteoarthritis. Human monoclonal antibodies targeting NGF have been extensively studied in humans and have been shown to be highly effective in managing osteoarthritic pain in patients, the company says.

Nexvet uses a process called "PETization" to generate its monoclonal antibody therapies. This process utilizes proprietary libraries of genetic information and algorithms to make sure that key amino acid sequences are recognized as "self" or "native" by the target species' immune system. This reduces the chance of undesirable immune reactions, the company says.

This process also allows Nexvet to create new therapies rapidly; these therapies are customized to a particular species and designed to feature all the advantages typical of monoclonal antibodies: potency, safety and a prolonged elimination half-life—often giving therapeutic effects for weeks after a single injection, the company says. No adverse effects have been observed in any of Nexvet's NV-01 studies to date.

Nexvet is also working on two other biologic therapies, including NV-02, a monoclonal antibody therapy similar to NV-01 but for cats, and NV-08, a fusion protein that is a tumor necrosis factor inhibitor for the treatment of chronic inflammatory diseases, including atopic dermatitis, in dogs.

Aratana's USDA-approved AT-004 is a canine-specific monoclonal antibody that targets CD20 antigen as an aid in the treatment of B-cell lymphoma in dogs. B-cell lymphoma is a common cancer in dogs, Aratana representatives say, and can progress quickly if left untreated. Nearly all dogs suffer significant side effects from chemotherapy and ultimately relapse, leaving a significant need for new treatment options, Aratana says.

Aratana's portfolio also includes AT-005, a monoclonal antibody targeting CD52 antigen as an aid in the treatment of T-cell lymphoma in dogs, which received a conditional license from the USDA in January 2014. The company has also submitted AT-014, a novel cancer immunotherapy for canine osteosarcoma, for a product license with the USDA. **dvm360**

References

1. Lascelles D. Efficacy of canine anti-nerve growth factor antibody for the alleviation of degenerative joint disease-associated pain in dogs. ACVIM presentation of late-breaking abstracts, June 7, 2014.
2. Webster RP, Anderson GI, Gearing DP. Canine Brief Pain Inventory scores for dogs with osteoarthritis before and after administration of a monoclonal antibody against nerve growth factor. *American Journal of Veterinary Research*. 2014, 75:532-535. tinyurl.com/lhun2q3

Rabies study promises to help close gaps

Research offers hope for pets that are behind on boosters.

When a dog that was only days overdue for its rabies booster was bitten by a rabid skunk, the owner, according to published news stories, was forced to make the painful decision to end her dog's life through euthanasia. Stories like this prompted a study in the Jan. 15 issue of the *Journal of the American Veterinary Medical Association* about the options veterinarians and public health officials have available to them when faced with similar situations.

"We get calls like this—if not weekly, then every other week," says Mike Moore, DVM, project manager for the rabies lab at the Kansas State University College of Veterinary Medicine's Veterinary Diagnostic Laboratory and the report's lead author, in an AVMA press release. "I was a practicing veterinarian for 23 years, and it's really, really sad for me not to be able to help these people."

The study shows that pets whose rabies vaccination was considered out of date at the time of exposure responded well after receiving an immediate booster and did not develop any signs of the illness. The authors hope that the findings bring some clarity to guidelines that currently call for such animals to face lengthy periods of quarantine or be euthanized.

"Up to now, there hasn't been any scientific data presented for animals that are out of date on their vaccinations," Moore says. "Public health officials didn't have any measurable way to make their decision. Our results show that the two groups of animals—those that are out of date and those that are up to date—respond the same, and we feel they should be treated the same. If animals considered out of date have been primed with an initial vaccine, then when they're boostered after exposure, their titer goes up really high, really fast, and that's what we want in the case of exposure to rabies."

"Hopefully this closes the gap," says report co-author Rolan Davis, reference diagnostician at the Kansas State Veterinary Diagnostic Laboratory rabies lab. "The one paying the ultimate price in situations like this is the pet. It's our hope that people will report every instance of possible exposure to rabies and not be penalized if they are five days overdue."

The authors are careful to point out that all pets should be vaccinated at the appropriate age and should receive regular boosters. The study, while providing hope to pets considered out of date who have been exposed to rabies, also reinforces the critical importance of that initial rabies vaccine. **dvm360**

dvm360 Find it all here

Rabies talk

The AVMA has produced a podcast that includes Moore talking about the rabies study. Read more at **dvm360.com/rabiesstudy.**

Tainted feed manufacturer settles with horse owners

Company to pay veterinary bills and replace lost horses. *By Julie Scheidegger*

After the deaths of multiple horses at Masterpiece Equestrian Center in Davie, Florida, Lakeland Animal Nutrition has reached a settlement with horse owners and the owners of the ranch. Although the settlement terms are confidential, sources say compensation is "considerable."

"The company did everything they said they would when it came to making this situation right," says lawyer Andrew Yaffa, representing Masterpiece and horse owners. He says it's rare to see a company fully accept responsibility. "I was actually shocked."

The horses boarded at the high-level training school were worth anywhere from $35,000 to hundreds of thousands of dollars; the ranch also claimed lost business revenue. Lakeland has agreed to cover business-related claims, plus the cost of all veterinary care and replacement of horses when owners are ready emotionally to do so, Yaffa says.

In all, 20 horses were sickened by the feed. Now more than half are dead and Yaffa says the rest are deteriorating. Settlement payouts will be individually tailored to fit each horse owner.

Independent tests and tests conducted by the Florida Department of Agriculture confirmed that samples of the feed were tainted with monensin and some with monensin and lasolocid. The medications are commonly added to cattle feed but are toxic to horses.

The Florida Department of Agriculture and Consumer Services found in its investigation that the "cleanout" procedure necessary when switching from mixing a medicated to nonmedicated feed was not executed in this instance. The agency fined Lakeland $4,000—the maximum fine of $1,000 per violation of adulterating, mislabeling and distributing the feed. Representative Erin Gillespie says the department has not received any additional reports of horse illnesses or deaths related to the tainted feed. **dvm360**

Two horses in S. Carolina die with signs that may point to monensin

Clinical signs presenting in horses at Camelot Farms in St. Helena Island, South Carolina, in December may indicate monensin poisoning, farm owners say. To date, the ranch has lost three horses.

"Two others we managed to pull back from the brink with lots of vet assistance, gallon after gallon of fluids, a huge and broad assortment of antibiotics and special drugs to make the bowels work," says Mark Kennedy, owner of Camelot Farms. Another horse was sent to the College of Veterinary Medicine at the University of Georgia and after eight days of treatment has returned to Camelot Farms. Kennedy says the horse is weak, but the prognosis looks "pretty good."

Kennedy says he has results from multiple tests of multiple lots of the feed that confirm monensin contamination. However, a sample of the horses' feed tested at Michigan State University's Diagnostic Center for Population and Animal Health in East Lansing, Michigan, returned this conclusion: "Monensin was observed in trace quantities (> 0.2 ppm)." It's inconclusive whether there was enough contamination to cause injury to the Camelot Farms horses.

The South Carolina Department of Agriculture is now testing the feed. A representative from ADM Alliance Nutrition, the feed manufacturer, says the company has also sent samples for testing.

ADM Alliance Nutrition issued a statement to *dvm360*. "We're not aware that authorities have made any determination as to what caused the deaths, and based on our investigation to date, we have not found any evidence that our horse feed caused or contributed to the deaths," says representative Jackie Anderson. **dvm360**

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2 Opinion Research Corporation, Heartworm Prevention Medication Study, 2012. Data on file at Merial.
3 Ask your Merial Sales Representative for full guarantee details.

See brief summary on page 32

Considering **vitamin bioavailability** in cattle and swine

Injectable vitamin products may look the same, but they aren't all created equal. Learn how to determine whether your large-animal injectables are delivering the vitamin boost you expect. *Ed Kane, PhD*

When veterinarians administer injectable vitamin products in food animals such as cattle and swine, they can't simply assume these supplements are absorbed and used by the body as promised. In fact, there are dramatic differences in bioavailability among the private-labeled products on the market.

In addition to reputable injectables, lesser-value vitamin-based products exist that provide little or no bioavailability. And several injectable fat-soluble vitamin products with labels identical to the pioneer product are being marketed with no bioavailability data. Without this data from the manufacturer or supplier to ensure product effectiveness, efforts to enhance vitamin status in food animals may very well be a futile endeavor.

Determining bioavailability

Biopotency is defined as the "capacity of a chemical substance to function in a biological system."[1] Vitamin E biopotency, for example, is determined by clinical endpoints, as classically defined by the gestation-resorption assay in vitamin-E-depleted rats.[2] The ability of different forms of vitamin E to prevent the resorption (death) of implanted rat embryos represents the biopotency of those vitamin E formulations.[1]

Livestock, on the other hand, lack these sensitive clinical endpoints, or biomarkers, so bioavailability studies are used to determine the utilization of different vitamin E sources. Bioavailability is defined as "the plasma concentration of a water-soluble substance after oral dosage compared with plasma concentration of the same substance after intravenous injection."[3] Because fat-soluble substances are injected either intramuscularly or subcutaneously, not intravenously, the term "relative bioavailability" is used.[3]

From a nutritional standpoint, bioavailability may be defined as the proportion of vitamin E ingested that undergoes intestinal absorption and utilization in the body. For fat-soluble vitamin E, injected intramuscular bioavailability is noted in the enhanced plasma or serum concentration post-injection.

As stated by Li and Peisker, the definition of bioavailability "encompasses the process of vitamin E absorption, transport, distribution to the tissues and metabolism."[1] Bramley and co-au-

GETTY IMAGES/BRANDY TAYLOR

thors define bioavailability as "the proportion of vitamin E that is absorbed from the gut and made potentially available to the body."[4]

Misleading results

Using a product with little bioavailability presents two distinct problems: the animal receives little to no benefit from supplementation and, more disconcerting, the veterinarian may come to an improper conclusion about an injection's usefulness and efficacy. When a veterinarian administers a vitamin that produces no change or improvement, he or she may assume the change in vitamin status was not useful, when in fact the product was simply not absorbed and used by the body in the first place.

This will be apparent if the veterinarian makes the effort to measure post-injection plasma concentrations. It is not that the vitamins are of no value, but that the specific product is of no value because it lacks bioavailability.

The problem with knockoffs

During the mid-1990s, several companies manufactured private-labeled products containing vitamins A, D and E. They were essentially knockoffs of the original pioneer product but didn't offer adequate bioavailability. Although labeled by various companies, all of the knockoffs contained the same non-bioavailable formulation. Typically, generic products offer the same potency as the pioneer product, but that was not the case with this group of supplements. Studies conducted at universities and private research facilities have all shown the lack of bioavailability of their knockoff products for enhancing vitamin E and A status of cattle compared with the pioneer product.

Consider this example: In a study measuring the effects of injecting vitamin A and D on infectious bovine keratoconjunctivitis (IBK) in calves, researchers administered two doses of 1 ml injectable vitamin A and vitamin D_3. Each milliliter contained 500,000 IU of vitamin A propionate and 75,000 IU of vitamin D_3. Doses were given 30 days apart. Control animals received similar amounts of saline. Calves were observed for IBK incidence after the second injection. The injectable vitamin supplement did not provide any positive outcome to IBK. In the end, there was little evidence to support the use of vitamin A supplementation to reduce the incidence of IBK.[5]

But as it turns out, the particular vitamin A injectable researchers used in that study did not produce the desired outcome because it was not bioavailable. This is a classic example of the importance of bioavailability. If the study's investigators had determined post-injection vitamin A levels, they would have recognized that the product used was of no value to their research and, perhaps, there would have been different findings.

This is often the case. Researchers who administer an injectable fat-soluble vitamin product intramuscularly must measure a product's efficacy based on its bioavailability.

Product testing

Veterinarians should similarly evaluate products they inject regularly to determine bioavailability. For example, there are injectable products that contain vitamins A, D and E that can be administered intramuscularly or subcutaneously. If the veterinarian measures plasma concentration post-injection, the bioavailable product will show adequate improvements in post-injection plasma concentrations. The product that is not bioavailable will show no positive plasma response. There should always be a dose response when a vitamin is injected.

Recent results presented at a recent meeting of the American Dairy Science Association, American Society of Animal Science and Canadian Society of Animal Science clearly showed dramatic differences in bioavailability of injectable vitamin E and A products. Vitamin E and vitamin A bioavailability were determined for two different products in two different groups of calves.[6] In both experiments, the pioneer injectable fat-soluble vitamins had dramatically superior serum vitamin E and vitamin A status compared with the knockoff. In one experiment, calves were bled initially then 24, 48 and 72 hours post-injection. In the second experiment, calves were bled initially then four, eight, 12 and 24 hours post-injection. In both of the experiments, the pioneer injectable fat-soluble product showed superior bioavailability over the knock-off product.

These data clearly demonstrate that before veterinarians use injectable fat-soluble vitamins—or any other injectable nutritional supplement—they should be confident that the product has proven bioavailability.

Just because a generic product is cheaper than the pioneer product does not mean that it is more economical or equal in bioavailability, even though the labels may look identical.

Summary thoughts

> There are dramatic differences in bioavailability among injectable vitamin products, even when labels report similar vitamin potencies.

> Before using injectable fat-soluble vitamins, be sure the manufacturer can provide bioavailability data.

> Some products are excellent sources of supplemental fat-soluble vitamins, i.e., vitamins E, A, D, while others are not bioavailable, offering no nutrient value. **dvm360**

References

1. Dersjant-Li Y, Peisker M. A critical review of methodologies used in determination of relative bio-availability ratio of RRR-alpha-tocopheryl acetate and all-rac-alpha-tocopheryl acetate. *J Food Sci Agr* 2010;90:1571.

2. Harris PL, Ludwig MI. Relative vitamin E potency of natural and synthetic alpha-tocopherol. *J Biol Chem* 1949;179:1111.

3. Traber MG. The bioavailability bugaboo. *Am J Clin Nutr* 2000;71:1029.

4. Bramley PM, Elmadfa I, Kafatos A. Vitamin E. *J Sci Food Agr* 2000;80:913.

5. Gould SA, O'Connor AM. Injectable vitamin A effects on infectious bovine keraconjunctivitis in beef calves. Iowa State University Research Farm Progress Reports 2012 15-16.

6. Snider DB, Zinn RA, Stuart RL. Differences in formulation and bioavailability of commercial injectable fat-soluble vitamin products. *J Anim Sci* 2014;92, E-Suppl 2:919.

American Heartworm Society opts to fund independent research

AHS identifies need for more answers, solicits research proposals.

Citing the need to better understand critical issues such as macrocyclic lactone resistance to heartworm preventives and the role of the immune system in heartworm prevention, the American Heartworm Society (AHS) has announced that it is accepting proposals for new heartworm research studies.

The AHS board of directors voted in October to create a new heartworm research fund after determining a need for more independent studies on heartworm disease.

The new fund is in addition to AHS grant money already available for heartworm research through the Morris Animal Foundation.

"The American Heartworm Society's mission is to lead the veterinary profession and the public in the understanding of heartworm disease," says AHS president Stephen Jones, DVM. "While we will maintain our strong focus on heartworm education through scientific symposia, heartworm guidelines, online initiatives and client education tools, we have concluded that research also is needed to further our profession's understanding of this serious disease."

Additional heartworm studies are underway now. Along with funding future research, the AHS recently partnered with the National Center for Veterinary Parasitology (NCVP) to award research grants for three scientific studies. These studies were approved during the October AHS board meeting.

"These studies will help set the stage for scientific research to follow," states Thomas Nelson, DVM, chairman of the AHS research committee.

"Veterinarians and parasitologists today have questions about how heartworm preventives work and what factors contribute to heartworm resistance and product failure. As an organization dedicated to expanding knowledge about heartworm disease, we believe it is our responsibility to help find answers to these important questions."

Researchers who are interested in submitting proposals to the AHS are encouraged to visit heartwormsociety.org/about/our-research for more about the criteria and timing for submitting their proposals. **dvm360**

Veterinarians use endoscopy on dog that eats homework

Affordable procedure reduces costs and recovery time.

A dog in Spring, Texas, is recovering and a homework project has been recompleted after a 5-year-old mixed-breed dog named Roscoe ate a Magnolia West High School student's homework.

Reagan Hardin, a sophomore at Magnolia West High School, had been working on her Advanced Placement history class homework project, which involved building a model of a Middle Ages farm manor. The project included plastic farm animals, grass, wood, metal wire fencing and model structures.

When Reagan's mom, Kristen Barker, went upstairs to where Reagan had been working on the project, she realized something was wrong. She found the project torn into pieces and many of the objects were missing.

An emergency veterinarian confirmed his stomach was full of different pieces of the project. Roscoe was referred to internal medicine specialists at North Houston Veterinary Specialists.

Doctors were able to use an endoscope to extract the pieces one by one until Roscoe's stomach was empty of the dangerous objects.

"Endoscopy saved Roscoe's life," said Barker. "If he would have had surgery instead, the cost would have tripled, and he would have had several weeks of recovery with potential complications." **dvm360**

Scorpion-derived 'tumor paint' helps dogs at Washington State

One forward whip of a scorpion's tail delivers a sting that strikes like flame. It's ironic, then, that venom from a scorpion species known as the "deathstalker" is credited with prolonging the lives of a group of dogs, including three named Whiskey, Hot Rod and Browning.

At Washington State University, clinical trials of "tumor paint," a product that lights up cancer cells, are proving beneficial in treating canines.

The reengineered molecule found in the venom of the deathstalker scorpion latches onto malignant tumors, making the diseased tissue glow brightly and distinctly against normal tissues. Consequently, surgeons are better able to detect and remove cancerous cells while leaving healthy ones behind.

Phase 1 of the trials involved administering tumor paint intravenously to 28 canine cancer patients prior to surgery, says William Dernell, DVM, MS, DACVS, professor and chair of WSU's veterinary clinical sciences, in a university release. "These were people's pets that had developed cancer spontaneously, not in a lab," he says.

"The fluorescent substance prefers tumor cells over normal cells, allowing us to define the borders of where a tumor begins and where it ends," Dernell says. "We're always hearing about some new compound that targets tumors. From what we've seen, this one really does."

The approach is being used in people, too. Pediatric oncologist Jim Olson developed and patented tumor paint at Seattle's Fred Hutchinson Cancer Research Center as a way to help people, but also the pets they love, he says.

"Many animal tumors resemble those that arise in humans so it only makes sense for the two groups to reap the benefits that tumor paint can provide during cancer surgery," he explained. "As WSU uses the technology to help dogs, the dogs provide information that's applicable to human cancers."

Four years ago, Olson launched Blaze Bioscience as a way to test and commercialize the technology. Not long afterward, he contacted Dernell about conducting clinical trials at WSU. The results were so promising that the second phase will include feline patients as well, Dernell says.

"I predict that in a decade or so, surgeons will look back and say, 'I can't believe we used to remove tumors by only using our eyes, fingers and experience,'" Olson says. "Those hidden deposits of 200 or so cancer cells? They won't go undetected." dvm360

Examining the **job prospects** for veterinarians

AVMA survey finds low veterinary unemployment, but many professionals are working less (or more) hours than they want.

Over the years in my various positions as an economist I've seen my share of summer interns come through my office. A few would have an idea of a career path, but most only knew the general direction they wished to pursue. Their most frequently asked question was, "What are my job opportunities?" After years of contemplating how best to answer, I realized it came down to two questions—how much will I get paid, and how hard is it to find that job?

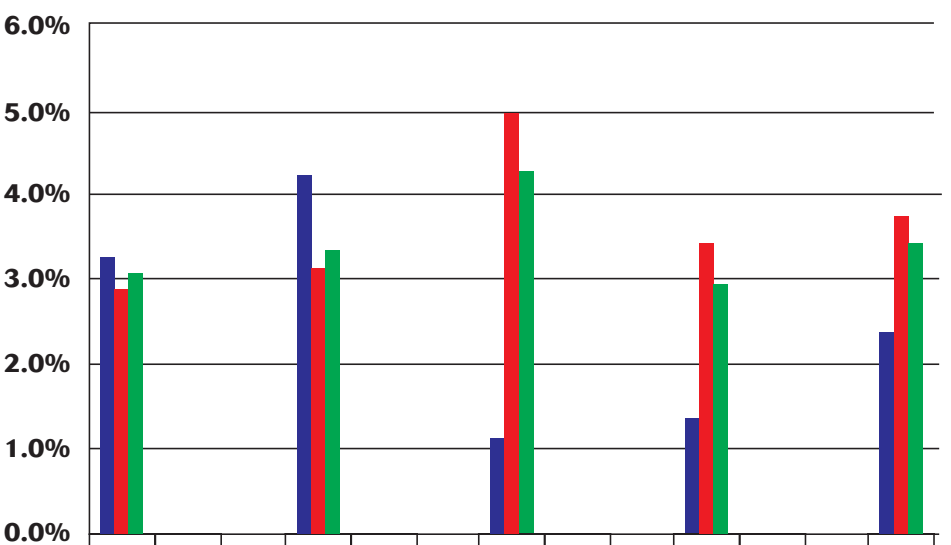
The American Veterinary Medical Association (AVMA) has historically answered the first question by providing the mean and median incomes of new veterinarians in different practice types and geographic locations every year. The second question, however, remained unanswered until March 2014, when the AVMA conducted its first annual employment survey. The purpose of the survey was to find out how hard it is to get a job as a veterinarian. More explicitly, we wanted to know what the unemployment and underemployment rates were in the veterinary profession, and what factors influenced those rates.

The survey was sent to 8,278 veterinarians, and 1,881 responses were received—a response rate of 22.7 percent. Out of the 1,849 responses to a question about employment, 62 participants (3.4 percent) identified themselves as unemployed. We also looked at factors such as current health status, level of mobility and job satisfaction. In addition, we considered respondents' perception of their technical competencies, such as business acumen, ability to perform surgeries and diagnostic skills. All of the factors were divided into two categories: demographic and structural. The demographic factors were age, gender, location, graduating college and veterinary sector. The structural factors were those indicative of professional abilities, measured based on respondents' self-reporting of their competencies in several business-related and technical veterinary skills.

As we considered the impact of both demographic and structural factors, several variables emerged as significant in explaining the probability of employment:

> Persons reporting high compe-

Veterinary unemployment rates by gender, year



	1988	2003	2008	2012	Total
Male	3.3%	4.2%	1.1%	1.3%	2.4%
Female	2.9%	3.1%	5.0%	3.4%	3.8%
Total	3.1%	3.4%	4.3%	3.0%	3.4%

Source: AVMA Economics Division

tency levels in administering anesthesia and dealing with people had a higher probability of being employed.

> Veterinarians who participated in an internship or whose first employed position was in a field outside of veterinary medicine had a higher probability of being unemployed.

Factors such as health, student debt, board certification, age and additional degrees were not found to be statistically significant in explaining the probability of employment.

Of the structural factors, a higher self-reported competency correlated with a higher probability of being employed. However, the relationship here is not clear, and the role of self-confidence must be evaluated. Also, for those veterinarians who participated in an internship or whose first postgraduate position was outside the field of veterinary medicine, the relationship of these factors to unemployment was not identified as causal—these groups simply had a higher probability of being unemployed. But it was striking to find that those who opted for an internship were 34 percent more likely to be unemployed. From the AVMA's Biennial Economic Survey, we also found that, all else being equal, internships by themselves did not correlate with higher salaries.

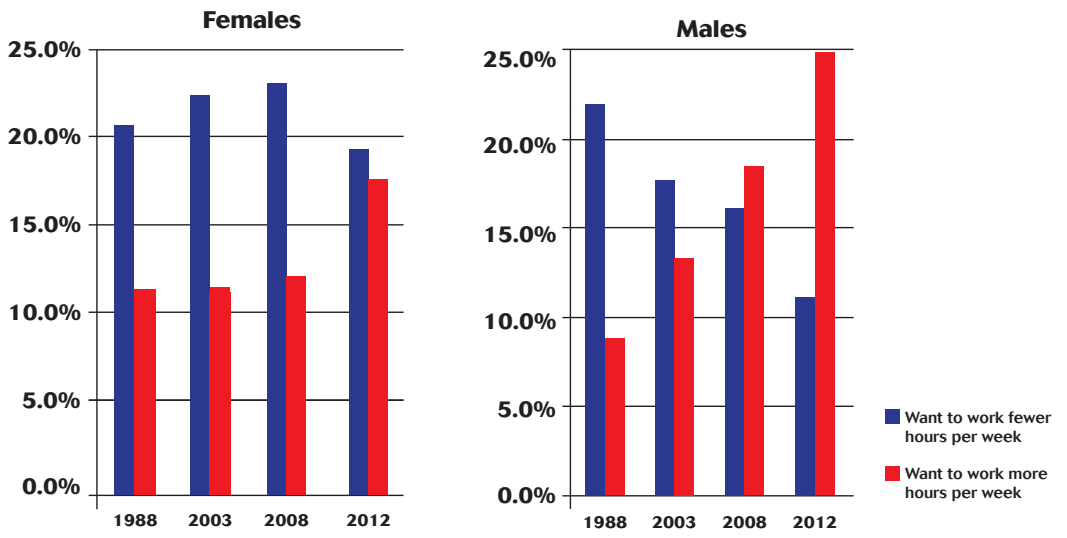
In fact, the veterinary profession's 3.4 percent unemployment rate identified in the survey is relatively low. It's certainly lower than the 2014 U.S. average rate of unemployment, which was 6.2 percent, and lower than the 2014 natural rate of unemployment, which accounts for persons changing jobs, inflation and so on, estimated to be approximately 5.5 percent. So while a veterinary job is no sure bet, our data suggest that it's considerably easier to find a job as a veterinarian than it is for the average U.S. worker to find work in his or her field.

But finding a job is only part of the picture. Underemployment has been a serious problem in the U.S. economy in the last six years. Underemployment has also been a problem for some veterinarians—14.5 percent indicate that they desire to work more hours for increased compensation, to the tune of 12.2 hours per week on average. But more interesting is the fact that 20 percent of veterinarians wish to work an average of 12.7 hours per week less for less compensation.

The total number of hours that veterinarians want to work less exceeds the number of hours that other veterinarians want to work more—and nearly 2,000 more veterinarians could be employed to balance the difference. On average and across the age groups, women wish to work less per week while in the early years men generally want to work more hours.

To answer those perennial questions from summer interns, the data would suggest that finding a job as a veterinarian is easy in comparison to other employment opportunities. But the pay may not be what is desired and, as is the case in most professions, the above-average professional will have the opportunity to excel while the below-average candidate will find that finding a job in the veterinary workforce could be challenging. dvm360

Veterinary work preference by gender, year of graduation



Source: AVMA Economics Division

Dr. Mike Dicks, director of the AVMA Veterinary Economics Division, holds a doctorate in agricultural economics from the University of Missouri. He has worked in Africa on water delivery and energy production technologies and served with the USDA's Economic Research Service.

Urgently rethinking the way we teach veterinary medicine

In our view, these changes will help the profession become more future-ready.

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Editor's note

This commentary is the first of a two-part series by these authors on rethinking the future of veterinary education. Part two will appear in an upcoming issue of *dvm360*.

"It is no use saying 'We are doing our best.' You have got to succeed in doing what is necessary."
—Winston S. Churchill

Veterinary medicine and its system of education face a number of problems, and key leadership groups are struggling to find the collective resolve to do what is necessary. In a recent commentary, American Veterinary Medical Association (AVMA) President Dr. Ted Cohn stated, "Changes in veterinary education are necessary for the profession to meet society's ever-changing demands." He called on veterinary organizations and colleges to have the "vision, courage, honesty, and determination" to recognize what is currently occurring in the profession and work together to "address our differences with civility and respect."[1]

In this essay we attempt to do exactly that. We assert that academic veterinary medicine should be more imaginative, efficient, integrated and relevant. We believe the changes we propose could improve the profession's future.

First of all, the veterinary colleges need to develop greater self-awareness, considering not just their own needs but the needs of the entire profession and the society they serve. Despite numerous studies over the years calling for change, they have paid scant attention—rather, academic veterinary medicine seems to be overlooking the profession's problems rather than helping to solve them. Veterinary colleges must face the profession's problems consciously together, not just through self-interest.

Here are some ways they could do that.

Rethink expectations for faculty and students

Too many college faculty first enter the classroom without having been trained in the art and science of teaching. Students are still taught predominantly using centuries-old methods that make them passive recipients rather than active seekers of knowledge—the most common format is a professor standing in front of a group of students and talking. Lectures are a convenient way to convey large quantities of information but an imperfect way to learn, as students are led to believe that academic success depends on memorizing as many details as possible. This is detrimental to reflective and critical thinking.

Colleges are beginning to address the situation by converting lectures to seminars and workshops—the so-called "flipped" classroom in which students assume active leadership roles and faculty serve as coaches. This way, students also learn communication and negotiation skills. This is an exemplary model for training future professionals.

Some veterinary colleges have come together to create multi-institutional teaching academies. We should anticipate that this idea will become widely adopted, particularly if university funding continues to shrink. It is an excellent way for institutions to share resources and expertise for the benefit of the entire profession. Twenty-first-century computer-based technologies greatly facilitate this model, an exciting development for the near-future.

It is irrational to cling to the sentimental James Herriot image of every veterinarian ministering to all creatures great and small.

Colleges need to be especially prudent in the way they admit undergraduate students to their programs. A strong prior academic record is a good indicator of success in the veterinary curriculum, but it is not necessarily an accurate predictor of career success. To effectively assess students' life-skills, admission interviews need to be mandatory and include comprehensive evaluation of communication skills, interpersonal behavior, creativity and leadership potential. Merit should be given to applicants with a broad range of experiences, both academic and extramural, and formulated prerequisites should be minimal. Interview teams must be well-trained and should involve appropriately qualified veterinary practitioners and non-veterinarians, including human behaviorists. Successful student selection is critical to the profession's future.

Reconsider the traditional all-purpose eight-year curriculum

There is no reason why six-year, European-style veterinary education could not be successful in North America. One approach would be to admit students to a four-year veterinary program after two years of appropriate undergraduate education. The AVMA Council on Education (COE) has already granted full accreditation to 10 prestigious foreign universities with five- or six-year veterinary degree completion times. Students benefit from reduced tuition and out-of-pocket costs, smaller debt loads, and opportunities to earn income two years earlier. The time has come for "accelerated" veterinary education to be realized.

It is irrational to cling to the sentimental James Herriot image of every veterinarian ministering to all creatures great and small. Building on a common core of broad-based biomedical One Health education, the clinical curriculum should provide for in-depth elective concentrations (tracks) with strong practice themes, including public and corporate veterinary medicine. By linking the area of study to a student's career path, graduates will exercise better medicine than when they have too many diverse responsibilities.

Make veterinary education more relevant

Biomedical science is unquestionably the underpinning of clinical medicine; therefore, we must ensure that the content of the first half of the four-year curriculum is well-aligned with the needs of veterinary practice. Biomedical faculty's job is to help create competent future veterinarians, not biomedical scientists.

Some medical schools have introduced a "clinical immersion" approach, which teaches basic medical science through the solving of clinical problems—for example, one learns practical anatomy and physiology from a patient, not a book. Clinical immersion places internists, surgeons, pathologists and others

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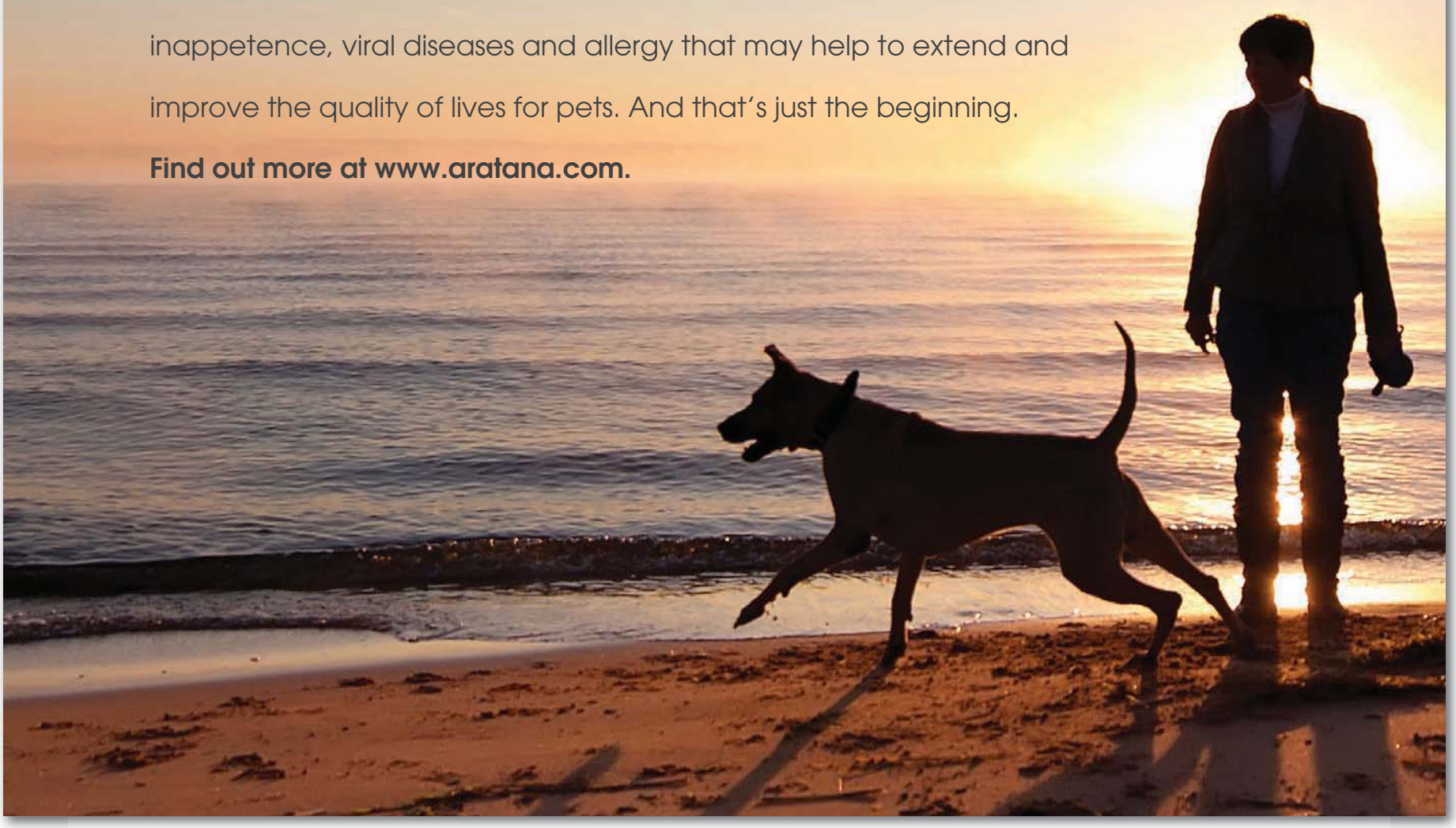

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on biomedical teaching teams, and it includes clinical presentations of body systems of individual animals and populations in a variety of animal species. This vertically integrated, problem-solving approach is a major advance in biomedical education.

Another way to make veterinary education more relevant is via distributed, community-based clinical experience. In an increasingly economically challenged and competitive world, university teaching hospitals are facing diminishing caseloads and are augmenting this with offsite training. Studying outside the academic campus is an excellent way for students to develop real-world, hands-on experience with a wide variety of animals, owners and communities. Also, it gives practicing veterinarians an integral role in education. Additionally, students learn interprofessional skills and protocols with technicians and nurses in private practice, and with PhD scientists, physicians and others in government and corporate settings.

The four newest veterinary colleges (three U.S. and one Canadian) have decided not to construct a teaching hospital on campus but to use community-based clinical training instead. Two such colleges are fully accredited by the COE, and two provisionally. Thus they are an established constituency. The current controversy in which some veterinary leaders are condemning the COE for accepting them is contradictory and counterproductive.

Distributed education requires excellent oversight, including careful selection of practice sites and practitioner-preceptors. Specific faculty members should be assigned to manage the program, and sufficient dedicated teaching time and resources must be made available. Preceptors and students alike need to adhere to well-defined educational goals and evaluation procedures. Where feasible, participating practitioners should be recognized and rewarded as salaried part-time faculty.

Leverage technology

Unquestionably, technology will continue to unite medical education. However, it is impossible to extrapolate with certainty the advances that will occur during students' careers; thus, the best way to prepare them is to include technological education and training prominently throughout the veterinary curriculum.

Soon, veterinary students may study anatomy on virtual dissecting tables and learn surgical techniques on virtual operating tables rather than on cadavers and patients. Embedded sensors may be used to gather, store and transmit data from the animal's body to a veterinarian's wearable device. And downloadable software no doubt will be available for every imaginable application in medicine and business. Eventually, advances in distance diagnostics (telemedicine) will effectively serve animal health needs in any location—potentially linking all areas of practice.

Veterinary students are often the victims of their emotional expectations of a career in veterinary medicine, and this fiscally impaired vision can make them easy prey to financial institutions eager to lend them money.

Veterinarians will also benefit from genomic technologies that define the molecular basis of diseases and their prevention and treatment. The immense computer power of the future, coupled with advanced informatics and 3D printers, will allow us to manufacture customized prosthetic devices and possibly even create new tissues and body parts.

Perhaps the biggest effect of technology on the veterinary curriculum may be the growth of online coursework. "Education without borders"—any place, any time—is an apt metaphor for 21st-century learning. In medical education, so-called blended learning (which integrates online and onsite teaching) will become more common as it combines the advantages of both. Veterinary students will increasingly enroll online in courses outside their home campus, which will provide education in areas where the college has limited expertise and expand their options for focused electives. Using simulation and interactive technology, students will be able to obtain virtual clinical experience online. If enough accredited online courses became available from multiple veterinary colleges internationally (a virtual world campus), a student would be able to earn his or her degree asynchronously or at an accelerated pace. It might even be possible to earn a veterinary degree largely online at greatly reduced cost. This notion has enormous political implications.

Although digital technology will inevitably play a dominant role in the future, we must never forget that the human-animal bond and doctor-patient-client relationships are the foundation of veterinary care.

Bolster business acumen

The term "financial literacy" has entered the vocabulary of higher education, although it is ill-defined and inconsistently applied. Ideally, every university student should understand and use sound financial principles, including knowing the costs of education and the earning potential in their chosen fields. Veterinary students in particular should receive customized training in personal finance, money management and small business insight, which can be achieved with robust courses throughout the curriculum. Why? For the same reasons they are taught medicine and surgery!

Veterinarians are the "products" of higher education, and ensuring the financial viability of that product must be a responsibility of the colleges. Training for clinical competency without imparting a keen understanding of the economic ramifications of that training is weak at best and disastrous at worst. Veterinary students are often the victims of their emotional expectations of a career in veterinary medicine, and this fiscally impaired vision can make them easy prey to financial institutions eager to lend them money. The enormous debt load carried by growing numbers of students is the principal factor keeping them from a satisfactory lifestyle, home ownership and practice ownership.

Online modules containing consistent, high-caliber finance and business information taught by well-qualified professionals should be a requirement in veterinary education. Complementary resources available through the AVMA and the Veterinary Business Management Association can augment the curriculum. Additionally, students should be required to study the various business models they encounter during their education, e.g. teaching hospitals, private practices, corporations and government organizations. Solid finance and business acuity is essential to the economic success of all veterinarians, irrespective of employment setting.

Want more ideas? Stay tuned for more proposed changes for veterinary education in part two of this commentary series. **dvm360**

Reference

1. Cohn TJ. In: Nolen RS. For Cohn, relevance of AVMA and profession is front and center. *J Am Vet Med Assoc* 2014;245:462-464.

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For this roundtable, experts in veterinary behavior, infectious disease, and feline practice came together to discuss ways to improve preventive care of feline patients, including a discussion of the importance of effective parasite control and the use of flea and tick collars for cats. The participants discuss how they educate clients about the importance of annual visits and preventive care programs. They also share tips for decreasing cat stress during these visits and describe tools, practices, and products that they consider cat friendly (*i.e.*, atraumatic or easy to apply) and that may help owners implement new therapies at home, including the use of collars.

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Dr. Joe Hostetler (Moderator): Today's roundtable discussion will focus on the feline patient and the challenge and opportunities that cats and their owners present when providing veterinary care.

The recent *Bayer Veterinary Care Usage Study III: Feline Findings* found that fewer than 50% of all cats receive routine annual wellness examinations. The study pointed out the four primary reasons that cats aren't receiving routine veterinary care:

- Lack of pet owner knowledge about appropriate veterinary care of cats
- Resistance and reluctance of cats to get into carriers and the use of carriers and travel in general
- The stress that both the cat and owner experience and associate with veterinary visits
- Lack of pet owner understanding of the benefit and value of regular veterinary visits to increase the quality and longevity of life for cats versus the economic cost of those visits.

Clearly, veterinarians have an opportunity to increase the number of feline visits and their practice revenue by addressing these issues.

In your practice experience, what do you find works best in communicating with cat owners about the necessity for and the benefits of routine feline veterinary examinations?

Dr. Wayne Hunthausen: What is useful in relaying value once the pet owner is in the door is getting the owner involved in the examination process. As you go through the examination, explain what you're doing and what you're looking for. Make it obvious that there are things that we can see during an examination that the owner can't see at home.

Dr. Susan Little: I agree, and that's why I narrate every step of the exam. Owners often don't know what we're doing in an exam. We know what we're doing and why, but they don't. In addition, changing the owner's perception of why an examination is important can be useful. For example, I don't like the term *annual wellness examination*. A cat owner thinks, "My pet looks well. Why do I need to come in to the veterinary clinic to have you confirm that for me?" I think our terminology should focus on *preventive care*. That's got value, and we can hang some hooks on that — whether it's parasite control, vaccinations, obesity, or behavior problems.

Dr. Debra Horwitz: I think you also have to make the owners partners in their pet's care. They assume certain things indicate wellness when perhaps they don't. For example, if their cat doesn't groom itself they may think he's just a messy cat. But this could be a sign of illness or anxiety, and they're not aware of that. Cats are mysterious and some people want a cat because, while it's loving, the interaction and the need for care appear to be less. However, we need to emphasize that the need for care may actually be greater than for a dog because cats are so covert in so many things that illness may be missed. Educating owners would help them to be a partner in patient care. Together, we are going to help guide this cat through a long, healthy life.

Dr. Michael Lappin: I think we can capitalize on the fact that clients seem to know more about dogs needing care. When it comes to cats' preventive health needs, cats are not that different from dogs, and we need to communicate to the owners that we also need to identify health issues early in cats.

A healthy cat asleep on a windowsill looks a lot like a really sick cat asleep on a windowsill. They just don't look much different to pet owners.

Dr. Little: It speaks to cats' subtle signs of illness, doesn't it? Somebody once told me that a healthy cat asleep on a windowsill looks a lot like a really sick cat asleep on a windowsill. They just don't look much different to pet owners. A lot of behavior changes can also be medically driven and owners may not be aware of that.

Dr. Horwitz: One thing that can really upset a cat owner is changes in their cat's litter box habits, yet owners usually don't realize that this can occur for a medical reason. They are often unaware that the jump from two wet spots in the litter box to five wet spots can be a big deal and signal a medical problem.

Dr. Little: Cat owners actually may not know their cats as well as they should or as well as they think they do.

"WE'RE GOING WHERE?!" STRATEGIES FOR REDUCING THE STRESS OF VISITING THE CLINIC

Dr. Hostetler: What steps have you taken to help reduce the stress that owners and cats experience before, during, and after the clinic visit for those preventive care examinations?

Dr. Horwitz: One of the first things I tell clients is, "Don't ever put your cat carrier away." The cat carrier should be like a piece of furniture. If you don't like the way it looks, decorate it, do something else, but it should always be out. Cats are suspicious of novel things, so the carrier should be left out and the owner should put something inside that the cat likes (e.g. food, catnip, something soft to nap on).

Dr. Hunthausen: We recommend pheromones, which can help keep cats calm for the trip to the veterinary clinic. When a cat owner makes an appointment, the receptionist should say, "If you might have or have had problems getting your cat in a carrier, go to our website for an article on what type of carrier your cat would be most comfortable with, how to get your cat acclimated to it, and other things that make it helpful to get your cat in."

Dr. Little: It's all about pre-visit planning, so we spend a lot of time on that. Our reception staff are trained to be proactive and ask clients before the clinic visit, "Do you need help?" or "Have you had a problem getting Fluffy in the carrier before? Is there something we can help you with?" We also post a lot of helpful materials on our website, blog, and Facebook page.

Dr. Hunthausen: Using social media is really important for veterinarians. Social media is a great way to regularly remind people about the importance of bringing their pets in for routine examinations.

Dr. Horwitz: Apps for mobile devices that help assess cat health and behavior are available. Veterinarians should be proactive and, if they are so inclined, help develop apps. We need to move the bar so that owners know what to look for.

Dr. Little: We're going to be behind the times if we don't keep up with new technologies, new tools, new ways of communicating.

Dr. Horwitz: Of course pre-visit planning doesn't reach owners who aren't thinking of coming. Having a discussion with someone who's already made an appointment makes it better for him or her. But it can be difficult to move the bar on those 50% who don't come in for a veterinary visit.

In the clinic, I think having separate cat rooms and separate entrances can help minimize stress. It's also helpful to provide elevated places for the cats in their carriers, so they're not on the floor.

Dr. Hunthausen: Towels are helpful to gently handle the cat instead of scruffing it.

Dr. Little: Towels are also good for covering carriers so the cat doesn't feel so exposed. We also provide loaner carriers in case an owner comes in with a cat in his or her arms.

> Surrounding cats in the veterinary clinic with smells that are cat friendly helps calm them.

Dr. Horwitz: We use pheromones, as Dr. Hunthausen mentioned. The pheromone we use most often in practice is Feliway® (Ceva). It is a synthetic feline facial pheromone and helps the cat feel more relaxed and more comfortable. It comes as a spray, a diffuser, and wipes. The wipes are effective in our practice to use on tables and carriers. Not every cat is pheromone-responsive, but many of them are.

Dr. Little: We also have owners treat the carrier before they even bring the cat in the clinic.

Dr. Hunthausen: Even several days before they get the cat in the carrier, it is helpful so the cat is becoming calm for several days before it goes in the carrier and comes to the clinic.

Dr. Horwitz: Our pets live in a world that's rich with smell, and we don't capitalize on that enough. Surrounding cats in the veterinary clinic with smells that are cat friendly helps calm them, and pheromones contribute to that effort.

DON'T UNDERESTIMATE THE IMPORTANCE OF CAT-FRIENDLY PRODUCTS IN YOUR TOOLKIT

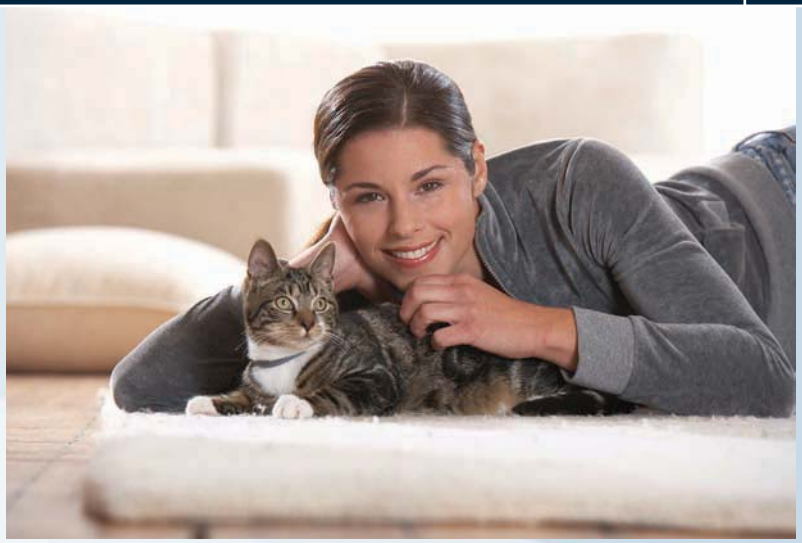
Dr. Hostetler: So those things help with stress and prepare a cat and owner for the clinic visit. How about for cats that require antimicrobials, parasiticides, or other medications? Are there some medications or vehicles you prefer over others?

Dr. Horwitz: We talk a lot about preconditioning, specifically if it is for a medication that the cat doesn't need right away. We teach owners to call the cat and feed it a treat at the same time every day for a number of days. Cats are very suspicious so we make handling a fun thing. We use things like Nutri-Cal® (Tomlyn) or anchovy paste, something the cat really likes.

Dr. Little: That's something veterinarians don't think about often enough. Not every medication needs to be started today. Maybe you could take a day or two to precondition the cat.

Dr. Hostetler: Is there anything that would be a little more cat friendly than a pill?

Dr. Lappin: On the subject of pills, we know that cats can have an issue with taking pills because of their poor secondary esophageal peristalsis. There have been many studies that have shown that pills or capsules can lodge in the esophagus at the level of the carina and may still be there more than five minutes after administration. If medication is given in the form of a treat, coated with butter or a vitamin supplement like Nutri-Cal, or followed by 2 ml of liquid, the pill or capsules are in the stomach within a minute or two.[1]



It's very easy to bruise the owner's relationship with a cat by forcing it to accept something it doesn't like.

Dr. Hunthausen: Overall with medicating cats, the less interaction, the better, whether it's something oral or something topical. For example, delivering medication in food or in a transdermal carrier is better than forcing a pill down a cat's throat. For cats that are very averse to handling, a flea and tick collar that lasts for several months might be more readily accepted than monthly topical treatments. It's very easy to bruise the owner's relationship with a cat by forcing it to accept something it doesn't like.

Dr. Horwitz: Unless you precondition them to accept interaction as something that's worthwhile. I would also like to see cat-friendly medications that are formulated. I think it's a great idea to compound the medication so the cat will eat it, but we don't know if it's actually bioavailable to the cat. There are some transdermal medications that do work and are useful for treating cats.

Dr. Hostetler: There are also products on the market such as Veraflox® (pradofloxacin; Bayer), which cats take very well, and we do have the pharmacokinetic data available for that.

Dr. Little: It's really important to explore alternative ways of getting

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medications into cats. What Dr. Lappin brought up (the pill hangup) is an underestimated issue. In human medicine, there's a long list of medications that cause esophageal discomfort or erosions and irritations. In cats, we know of a handful of drugs that do that, and I'm sure there are more. Owners often report that it went well for the first day or two, but now can't get them to take the medicine. Don't you wonder if that's what could be going on?

Dr. Lappin: Thankfully, I don't think there are many medications irritating enough to cause the 270 degrees of inflammation thought to be required to lead to a stricture. But, imagine how weird it feels to the cat to have a pill hung up in their throat.

Dr. Little: We teach owners never to dry-pill any medication because I just assume they all could be uncomfortable. So they all receive a treat or food afterward and that also helps with conditioning the cat to take the pill.

Dr. Hostetler: How do you address parasite prevention and control and factor that into your client conversations and recommendations for their pets?

Dr. Little: We talk about the myth of the indoor cat. I practice in a big city and a lot of my patients never go outside, but there are many ways that indoor cats can be exposed that owners are not aware of — whether it's mosquitoes, creepy crawlies, a dog that lives in the same house, or other pets in an apartment building.

Dr. Horwitz: Owners have the mistaken idea that because their cat doesn't go outside that it cannot get fleas or ticks. If they also have a dog, we must remember to tell them it's not true. Cats are so clean that you wouldn't necessarily know if they had had external parasites on them. We must have these discussions with clients so that they understand normal cat grooming habits and how grooming might skew the visualization of external parasites on the cat.

Dr. Lappin: We've known since 1970 that roundworms can be transmitted by flies. "Have you ever seen a fly in your house, Mrs. Smith?" As for mosquitoes, they follow CO_2. "Have you ever seen a mosquito in your house, Mrs. Smith?" Cockroaches can also carry larvated roundworm eggs. We need to shift the owners' thinking to understand that all of these transport hosts can get into the house, regardless of where they live.

The owner's activities come into play too. If you hike, like I do during the summer, you'll occasionally bring back ticks.

Dr. Little: We also focus on the ease of prevention versus the challenge of some treatments. It's much easier to prevent a problem in the first place.

Dr. Lappin: It is good to have on your clinic reminder cards and other communications that clients should remember to bring a fecal sample in so that the pet can be evaluated for parasite control issues.

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EDUCATION IS KEY TO EFFECTIVE INFECTIOUS DISEASE CONTROL

Dr. Hostetler: What specific tips do you have for relaying to clients the importance of protecting their cats from fleas and ticks and educating them on the infectious agents those parasites can transmit?

Dr. Lappin: It is a bit of a double-edged sword because we want to use the importance of parasite prevention to emphasize coming in for preventive care, but we don't want to frighten owners. I think it's very important to mention to them that fleas aren't just itchy and gross but that they also can transmit infectious diseases; however, we need to do this responsibly and in a way that doesn't scare them away from owning a cat. There is also the concern with tick-borne diseases like cytauxzoonosis, which can have a very high mortality rate in non-treated cats.

Dr. Little: Most owners are not even aware of the diseases that fleas and ticks transmit.

Dr. Horwitz: There is the misperception that because cats are so clean, and owners might have never seen fleas, that there is no need to worry about flea control or infectious diseases.

Dr. Little: An important part of our job is to raise awareness to help protect susceptible, immunocompromised individuals in homes as part of our One Health initiative. So we need to think of not just the client who's in the exam room, but also who needs to be protected at home.

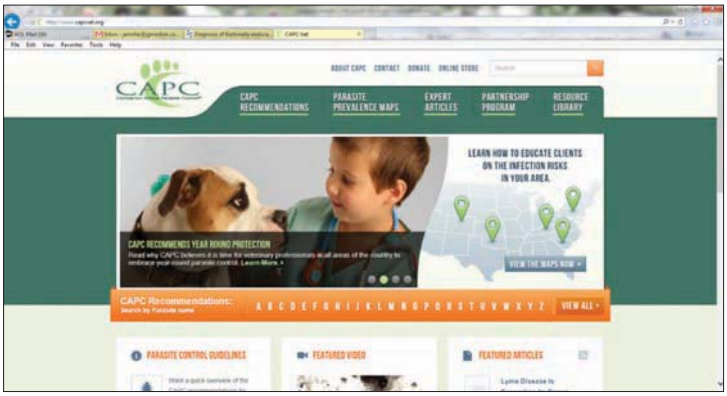
Dr. Horwitz: We need to ask about the family composition — for example, are there small children or immunocompromised individuals in the house? Bringing the whole family in, making them a partner in the wellness of the cat is going to impact the quality of life of the cat.

Dr. Lappin: I support the American Association of Feline Practitioners (AAFP) and Companion Animal Parasite Council (CAPC) because the more we have national or international groups suggesting these things, the better. Information from these organizations and their websites can help with client education to show them that these are national and international parasite control guidelines, not just individual clinic policy. And CAPC says it very clearly — it's all pets, it's all the time, no matter where you live. The CAPC website also has U.S. infectious disease prevalence maps for dogs and cats.

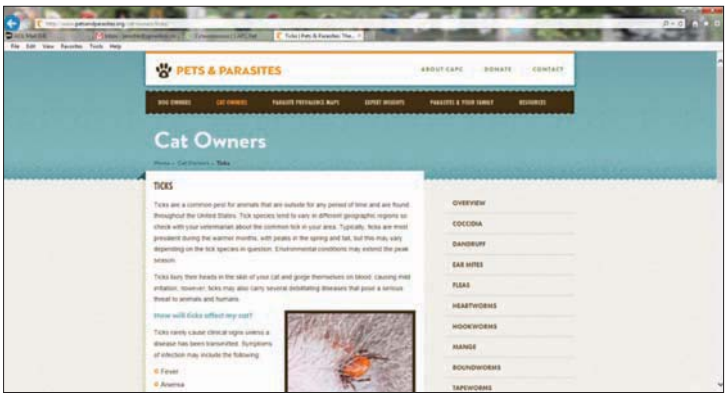
(See sidebar: *Helpful parasite prevention websites for veterinarians and clients* [right].)

HELPFUL PARASITE PREVENTION WEBSITES FOR VETERINARIANS AND CLIENTS

The Companion Animal Parasite Council (CAPC) maintains two websites, one for veterinarians and one for pet owners.



CAPCvet.org contains user-friendly, searchable, up-to-date information for veterinarians. The website states, "The mission of the CAPC is to foster animal and human health, while preserving the human-animal bond, by generating and disseminating credible, accurate, and timely information for the diagnosis, treatment, prevention, and control of parasitic infections." To that end, **CAPCvet.org** contains numerous parasite prevalence maps, expert articles, and CAPC's recommendations and guidelines for parasite protection for cats and dogs.



CAPC's **petsandparasites.org** contains similar information, but it is written for pet owners. It provides content to help them easily understand the threats parasites pose to their pets and families. Veterinarians can familiarize clients with this site during a clinic visit.

Dr. Horwitz: Many veterinarians may not know about these maps. But if they are more aware of the disease prevalence in their area, then they're going to initiate that conversation about parasite control.

Dr. Lappin: We definitely need to educate veterinarians, which is what we're trying to do at the **CAPCvet.org** website. The **petsandparasites.org** site is written more for the layperson. Veterinarians' social media and reach-out messages to pet owners should relay that parasites are important and provide links for more information before the visit. Once clients are in the exam room, if they give pushback about not needing flea control for their cat, you can bring up the CAPC site on the exam room computer to validate your recommendations quickly.

Dr. Horwitz: These sites are informational; they're non-commercial. These are wonderful tools veterinarians have right at their fingertips. Veterinarians can display them on an iPad, tablet, or computer right in their exam room. When talking to a client, you can just click on a link and that helps initiate a conversation. People want information, and they look to the veterinarian to get it.

Dr. Hostetler: CAPC has also unveiled a Parasite Map app for use in the exam room.

EASE OF USE IS CRITICAL FOR COMPLIANCE

Dr. Hostetler: When considering products for flea and tick control, what are the disadvantages and advantages that come into play as you make a decision about what to recommend to a client?

Dr. Hunthausen: Ease of application is really important. If the pet owner can't get the medicine into the pet or onto the pet, you've lost right there. The pet's environment and the owner's activities are important considerations. The cost of the medication influences what we recommend or when we recommend preventives.

Dr. Little: Today I have more owners asking about safety than I used to. I get more questions about things they perceive as a chemical being applied to their pet. We've made sure that our staff members are well versed in talking to owners about safety studies. Fewer owners voice concerns about efficacy.

Dr. Hunthausen: And the questions are about safety not only for the pet, but safety for the children in the home, for other adults.

Dr. Horwitz: Or even for in-contact animals. The ease of application is a big concern for cat owners because they don't like their cats to be mad at them or avoid them because they're administering something that they know is good for the pet's health but is adversely affecting the bond. So it's that balance of making sure that we've provided them with the right tools to administer the product in an easy way. A lot of products are easy for veterinarians to administer, because we've pilled or treated lots of cats. But it's not right to make that assumption that it's easy for the pet owner to do because it's so easy for us.

Dr. Little: Owners need a demonstration about how to use topical products. So we'll put the first dose on the cat in the exam room.

Dr. Lappin: Even when we demonstrate and educate, and then a month elapses and the owner thinks, "So, now it's the next month. How did they do this again?"

Dr. Hostetler: As for compliance with feline patients, you've mentioned less interaction is important, as are ease of administration, duration of efficacy, and safety. Are there any other concerns that relate to compliance, and how are you addressing compliance? What are your recommendations to your clients that relate to tick and flea control?

Dr. Hunthausen: It just keeps coming back to ease of use. That's important not only to make sure the pet gets the medication it needs, but also to maintain the relationship the owners have with the pet. For the owner, there's nothing worse than to walk into a room and have the cat look up and walk away because it doesn't like what the owner has been doing to it. You don't want treatments to damage the owner's relationship with the cat.

Dr. Little: Owners are very sensitive about that relationship with the cat, and they are quite easily put off if they feel that that relationship has been damaged in any way.

Dr. Hostetler: So with all that in mind — the bond to the cat, efficacy,

For cats, even though the topicals have really revolutionized things, there is a big gap because few topical products are efficacious against ticks on cats.

safety, ease of administration — what products do you recommend for flea and tick control for cats?

Dr. Little: What you pick is going to depend on what parasites are prevalent in your region and what your patients' needs are. For cats, even though the topicals have really revolutionized things, there is a big gap because few topical products are efficacious against ticks on cats.

Dr. Hostetler: Are collars in that mix as it relates to topicals?

Dr. Little: The veterinary profession has traditionally steered owners away from collars. Now that we have Seresto® (Bayer), we're going to have to change our thinking. It'll be a real turnaround, because Seresto® is a breakthrough product that lasts 8 months.

Dr. Horwitz: I think owners will need to be educated about how to use collars correctly and how long to leave them on. If owners use the product improperly and it doesn't work, the fact that they used it improperly doesn't factor into their opinion about the product.

Dr. Lappin: At Colorado State University, we've been strongly aligned with topicals ever since they became available for cats. Now with a product like Seresto®, it addresses some of the compliance issues.

Dr. Horwitz: Owners don't like the fact that collars can create hair loss and hair breakage. So that when they remove the collar, it's still there. There's still that change.

Dr. Little: Even if it's just cosmetic.

Dr. Lappin: The other concern people have with collars is that they may get hung up on things.

Dr. Little: We can't underestimate that there is a risk that needs to be addressed.

Dr. Hostetler: The Seresto® cat collar actually has two safety release mechanisms. If you look closely at the collar, there's an area that, should a small amount of force be applied, the collar is going to snap. This is designed to snap at about 80 newtons, the equivalent of a handshake. The ratchet mechanism for securing the collar also will give way at about that same force.

Dr. Horwitz: Have you had cats do it?

Dr. Hostetler: Yes. There is a phone number on the back of the package for the owner to call to talk to Bayer representatives. Over the past year and a half, however, it has been a nonissue.

Dr. Horwitz: In your research, how many cats have taken the collars off? Do you know?

Dr. Hostetler: It's been a very miniscule percentage. The ultimate test is in the market. The collar has been available in Europe a year prior to launching here in the U.S., so there is another year's worth of real-world experience with it. Loss of collars, cats getting caught in trees or on fences, has been a nonissue. It's not something we took lightly, but we found it was not a problem.

Dr. Lappin: In one study we completed, even cats in multi-cat households did not spontaneously remove their collars. (We did have one cat that got the Seresto® collar entrapped

on his lower mandible twice, and so he was removed from the study.) We also compared Seresto® collars to a placebo collar in that study and, overall, there were no greater side effects with either collar. In contrast, group-housed research cats will occasionally succeed in removing collars from their "friends," usually by chewing them.

Dr. Little: Some cats are chewers and some aren't.

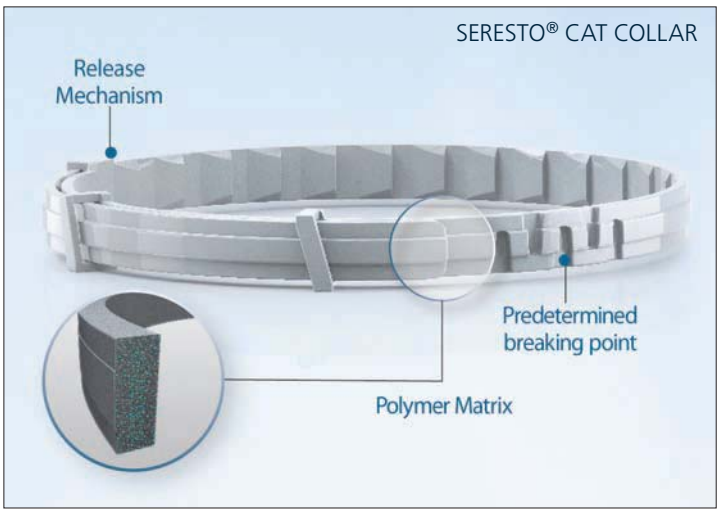
BENEFITS OF 8-MONTH FLEA AND TICK PROTECTION

Dr. Hostetler: Do you have other thoughts about Seresto® versus any other products as far as it relates to flea and tick prevention and specifically the repellency, efficacy, convenience, and ease of administration?

FEATURES OF THE SERESTO COLLAR

- Seresto® delivers the performance you expect from a topical treatment in an easy-to-use collar against fleas and ticks for 8 months.
- The active ingredients, imidacloprid and flumethrin, are provided in a non-greasy, odorless, and convenient collar.
- Bayer's Polymer Matrix is designed to slowly and continuously release the active ingredients over 8 months.
- The Seresto® cat collar features a release mechanism (with predetermined breaking point). In the unlikely event of a cat becoming trapped, the cat's own strength is sufficient to allow for quick release.*

*Data on file.



Dr. Hunthausen: The repellency of the Seresto® collar is a nice quality because if you can prevent these little critters from feeding, that can be a step in avoiding transmission of some of these more serious diseases.

Dr. Lappin: One of the things that we downplayed in cats to this point was tick-borne infection. Along with cytauxzoonosis, we know there are other tick-borne illnesses in cats, such infections with *Anaplasma* and *Ehrlichia* species. When you look at vector distribution, these infections cover the majority of the U.S. Therefore, as we learn more about tick-borne diseases in cats, we should be thinking not just about fleas, but also about protection against ticks. Compliance is important. The 8-month flea and tick protection of Seresto® makes it a real game changer.

Dr. Hostetler: It's a big paradigm shift for us.

Dr. Little: It's important to know what the history is that has pushed veterinarians away from flea collars. Those are exactly the things that we need to address. Seresto® is just a different delivery system, but it's still a topical.

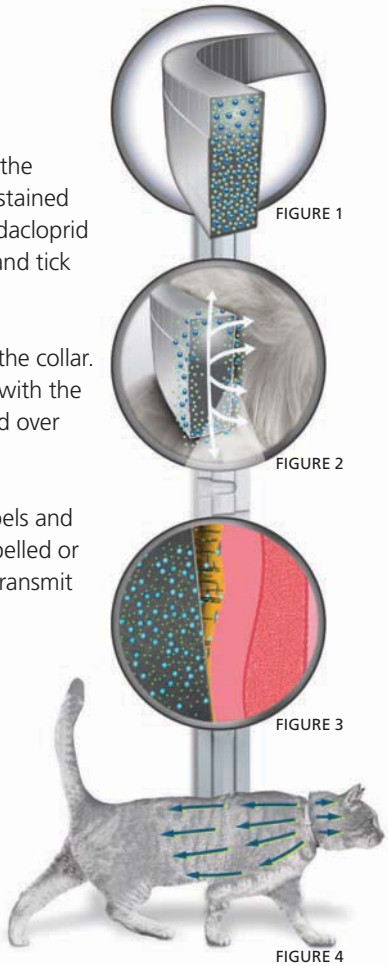
Dr. Lappin: One of the things that surprised our group was that it's not that powdery type collar.

Dr. Little: Yes, that's a good point.

Dr. Horwitz: In the past, the powdery texture and the smell have been big owner complaints with other types of collars for cats that dispensed a product topically. (See sidebars: *Features of the*

HOW THE SERESTO COLLAR WORKS

- The unique Bayer Polymer Matrix of the Seresto® collar (*Figure 1*) allows a sustained release of the active ingredients, imidacloprid and flumethrin, for continuous flea and tick prevention that lasts 8 months.
- Active ingredients are stored within the collar. They are slowly released on contact with the hair and skin and are then distributed over the body (*Figures 2-4*).
- The Seresto® collar kills fleas and repels and kills ticks for 8 months. If a tick is repelled or killed, it cannot attach to a cat and transmit organisms that may cause disease.
- Seresto® aids in the control of flea larvae in the cat's immediate surroundings following contact with a cat treated with Seresto®.
- The Seresto® collar is easy to apply, non-greasy, and odorless.



Seresto® collar [p. 10] and *How the Seresto® collar works* [above].)

IT IS A MYTH THAT CATS WON'T WEAR COLLARS

Dr. Hostetler: A 2010 study by Dr. Linda Lord and her colleagues looked at owner perceptions of whether their cats would wear collars.[2] In your opinion, what were the primary findings of this study as it relates to cats and collars?

Dr. Little: I love the fact that many owners in that study had a preconceived notion that their cat wouldn't wear the collar and were surprised when the cat did wear the collar for the whole six months of the study. It's one thing for us to say that, but it's another thing to be able to point to some data and say this has been studied, and not in just 20 cats, but in hundreds of cats.

Dr. Horwitz: The take-home message is that we know that cats will wear collars. It is worth pointing out, however, that their sample was all from veterinary schools, and owners in the general public may be more inclined to think that their cats would not tolerate a collar. About 25% of the veterinary students who took part in the study thought that their cats wouldn't tolerate collars well.

Dr. Little: Our clinic cats all wear collars and ID tags. We try to make sure that any image of a cat that we use in materials or on our website is a cat with a collar and an ID tag. So you've got to walk the walk, if you're going to be recommending collars.

Dr. Hostetler: Dr. Lappin shared his experience and thoughts about Seresto® use on cats. Now that you know a little more about Seresto®, are you considering including it in your options for flea and tick control with cats and why? What would make you consider it?

Dr. Hunthausen: Some of the things that I'm considering in regard to adding it to our practice would be the tick control, especially for some of the pet owners that have cats that are at high risk for exposure and some of the more serious consequences of tick infestation. And then ease of use for some owners. There are some owners who I'm sure would be open to the fact that they only have to apply the product once every 8 months.

Dr. Horwitz: I agree. For ease of compliance, it is a great option for cat and dog owners so that you know your pet has protection for a fairly long period without having to reapply. That is really a useful modality to have available to you.

Dr. Little: I'll echo that. I think the compliance is going to be a big step forward for us with cat owners.

Dr. Lappin: I would add that I was very impressed at how well tol-

erated the collar had been by our research cats. In the client-owned cat study we just completed, there seemed to be an adjustment period within the first two weeks with either the placebo or Seresto® collar, and then they were fine. Initially they would scratch at the collar and there was some local alopecia and very mild crusting. If we can provide some tips for getting cats used to wearing a collar and they can make it through that first two weeks, then they should be fine.

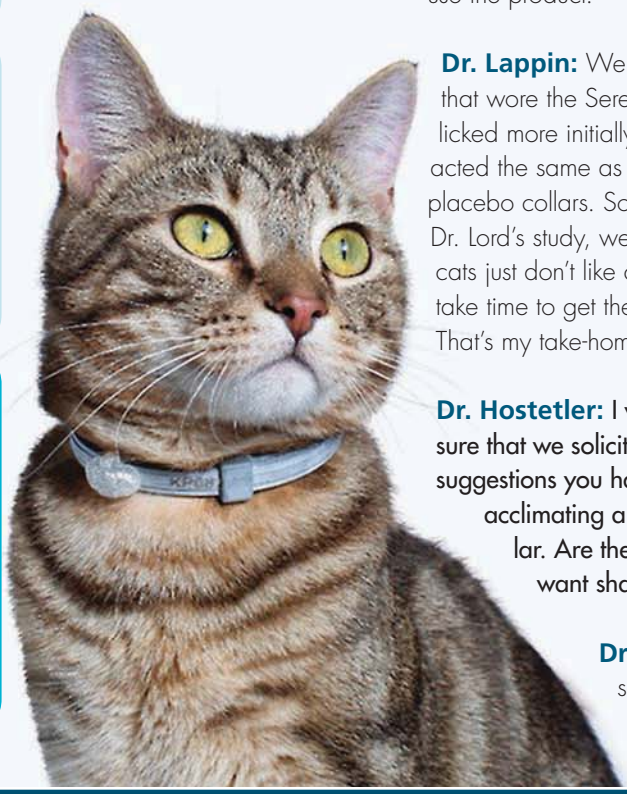
Dr. Little: So an acclimation period more or less, and then they stopped.

Dr. Horwitz: You thought the crusting was self-inflicted and not due to the collar itself?

Dr. Lappin: Yes. Licking at the collar site was by far the most common side effect. And then some cats licked other cats' collars if they were in multiple-cat households. Our assessment of the ones that did have crusting, erythema, or any local disease was that it was self-inflicted. We had only one out of 96 total cats that self-traumatized enough that he needed to be treated.

Dr. Little: It may be worth making a follow-up phone call with the owner within a week or two to assess how the cat is doing during that two-week period.

Dr. Horwitz: Also, tell the owners what might happen within the two weeks, because information is knowledge. Two weeks would be a timeframe in which most owners would take the collar off if they see problems. However, if they knew the response was transitory, they might be more likely to continue to use the product.



Dr. Lappin: We saw that cats that wore the Seresto® collars licked more initially, but otherwise acted the same as the cats with the placebo collars. So, coupled with Dr. Lord's study, we know that some cats just don't like collars and it will take time to get them used to it. That's my take-home message.

Dr. Hostetler: I wanted to make sure that we solicit all the tips and suggestions you have related to acclimating a cat to this collar. Are there any tips you want share?

Dr. Lappin: We saw that the cats that have already had a history of wearing collars were more tolerant of Seresto® or the placebo collars than were cats that hadn't worn a collar in the past. So basically you just need to acclimate a cat once. Once they're acclimated to a collar, then having this collar probably won't cause any major issues.

Dr. Little: So it could be important to know if they've worn a collar before.

Dr. Lappin: Yes, and that was statistically significant in our group. They were less likely to have a side effect if they had a collar history of any type. And most of those were ID collars, not flea and tick collars.

Dr. Horwitz: The owners will also need to be shown how to put on the collar. My experience has been that cats protest more about collars that are too tight. Owners should associate putting on the collar with something positive, like treats. Also, if they notice that the cat is pawing at the collar a lot initially, distract the cat with play. We need to be upfront about telling owners what to expect and what to do.

Dr. Little: I would elaborate on that and say we need to start by training the veterinarian and the team members just as much as pet owners. They likely have misconceptions about collars as well. Having staff members use the collars on their own cats could be valuable too. You make them advocates for your product. The best sales pitch to clients is to have clinic cats wear the collars. There's honestly nothing more powerful than my clinic cat wearing one.

Dr. Hunthausen: Acclimating the cat to the collar starts at ground zero in teaching the cat to tolerate and be comfortable with novel things in its environment and being handled. So if we can introduce the owner to the idea of putting a collar on the cat from a young age, that sets the cat up to be more comfortable with a Seresto® collar later on in life. And then teaching owners of older cats how to acclimate as well, maybe by using a paper collar and treat rewards.

Another thing we might want to recommend, to increase the success rate, would be to trim the cat's nails before applying a collar.

Dr. Lappin: So they're less likely to cause trauma.

Dr. Little: Yes, that's something to train team members to do at the time the collar is dispensed — to include a complimentary nail trim.

Dr. Horwitz: The other thing we want to do is set people up for success. That's what we try to do in our practice. If we're going to institute something, like wearing a new collar, we try to do it when they're going to be home. And tell them what to expect, both the good and bad. I think it's better that way. Nobody likes surprises. Cats don't. People don't.

I also give owners these tips for introducing collars to cats:

- Don't ambush the cat. "Oh, he's sleeping quietly. I'll grab him and put the collar on." That'll freak the cat out if they do it that way.
- Always associate the collar with something positive. Put some treats on the floor and put enough treats down so that the cat stays busy eating throughout the process of putting the collar on.
- Start out using a regular identification collar for a short time and, if the cat is bothered by it, distract the cat until it is calm and not paying attention to the collar and then take it off. Repeat the process again with treats or food, and cats will usually acclimate to it. Once the cat is acclimated to a regular collar, then apply the Seresto® collar.
- Distract the cat. If a cat is pawing at the collar a lot initially, owners can distract the cat with play or put it on with food rewards. Over time the cat is likely to wear the collar without a problem.

If we talk to clients up front about the process, and that it can be done in stages, we can anticipate possible pitfalls and answer questions.

Don't ambush the cat. "Oh, he's sleeping quietly. I'll grab him and put the collar on." That'll freak the cat out.

Dr. Little: Right. So that'll be part of the whole team training thing too, to make sure staff know. Seresto® is going to shift a paradigm, and it's going to need a more critical investment in education to make this work.

Dr. Hostetler: The ***Bayer Veterinary Care Usage Study*** revealed that cats are a major opportunity for increases in number of visits and revenue in practice. What are your best recommendations for successful client follow-up, whether it be making sure the clients understand their cat's examination results that day, your health care recommendations until the next visit, and the timing of the next scheduled visit. How do you go about communicating all of that?

Dr. Hunthausen: One thing we talked about earlier is educating the owner during the examination about what's being done and what your findings are. Take-home examination reports are a good idea. It's a lot easier for somebody to read something they have in their hand even though people are more Internet savvy these days. It's very important to ask if the owner has any questions about the exam or treatment options, or if they have any questions in general. And then depending on the situation, a follow-up phone call after the visit is a good idea.

Dr. Little: Maintaining that contact is a big thing. So even some routine follow-up after a preventive care visit would be helpful. I do a lot of email follow-up too, and maybe send them a link to a website we talked about (*e.g.* **petsandparasites.org**).

Dr. Lappin: And the other important thing is if it's a type of problem that's going to require a follow-up visit, don't just allow the owner to go out there and make an appointment on their own. Escort them out and say to your receptionist, "Mrs. Smith would like to bring Fuzzy back in a few days. Please make that appointment."

Dr. Little: Yes, walk them out and make it.

Dr. Lappin: One of the things I've found to be interesting over the years is that owners are fascinated that dogs and cats get some of the same diseases that people do. I think we can capitalize on them recognizing that animals get the same types of diseases, but it happens in a compressed timeline. This is why annual visits are so important so that we can catch things early. It gets back to the preventive maintenance.

We need to gently reiterate that ectoparasites can negatively affect the health of your pet.

Dr. Little: Right. And we need to get better at communicating the value of what we do instead of assuming that people know what we do and what the value is.

Dr. Horwitz: Another part of it is understanding that the client comes in with his or her own narrative, which may or may not include all the information we need to successfully care for the cat. Our job is to elaborate on that narrative until we have enough information to properly do our job — diagnose the problem and treat the pet for optimal health and welfare.

Dr. Little: Owner observations are useful, but their conclusions are not always useful.

Dr. Horwitz: So the veterinarian has to be prepared to listen to the client and ask about certain things like litter box use changes, changes in appetite, or changes in the home situation, anything that can also cause a change in the health or behavior of our patient.

Dr. Little: It's an environmental assessment, isn't it?

Dr. Horwitz: It's really important to do the environmental assessment. We also need to discuss what will happen when the owner brings the cat back home to a multi-cat household after its visit to the veterinarian. Reentry, especially with other cats in the home, can be tricky and cause problems.

Dr. Little: Especially if you come home with a new collar on.

Dr. Horwitz: Correct. It's important to have that discussion and to have tools on the clinic website where the owner can go for information.

Dr. Little: Reentry could be a real issue. It's important to know if there are any other cats in the house. We do a household census at each visit, so when the client comes in our staff is trained to check the file and verify which cats are in the house. Then we can get a better sense of what the exposure risks are too.

Dr. Hostetler: We've discussed a lot of things — managing stress, acclimating to carriers, flea and tick control. What are a couple of statements that convey your recommendations related to the opportunities for flea and tick protection in cats in a compliant cat-friendly way?

Dr. Little: I'll circle back to what I said earlier. I'll talk to the owner about the ease of prevention versus the challenges of some treatments. Many of the things that we worry about in cats are easy to prevent but they can be a real challenge to treat. That can be really helpful for owners to understand.

Dr. Horwitz: With respect to parasite control, owners need to understand that the diseases that are a result of parasite infestation are often hidden for a long time. By the time they become serious enough that they're obvious, the pet can be very sick and owners may mistake that for an age-related change. "He's just slowing down."

Dr. Lappin: I would say we need to gently reiterate that ectoparasites can negatively affect the health of your pet. We've found that up to 80% of cat fleas have either *Rickettsia felis*, *Bartonella henselae*, or hemoplasmas, so they pose a real risk.[3-5]

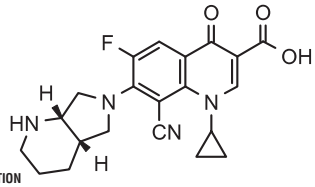
Veraflox®
(pradofloxacin)

Oral Suspension for Cats

25 mg/mL
Do not use in dogs.
Federal law prohibits the extralabel use of this drug in food-producing animals.

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

DESCRIPTION
Pradofloxacin is a fluoroquinolone antibiotic and belongs to the class of quinoline carboxylic acid derivatives. Its chemical name is: 7-[(4aS) octahydro-6H-pyrrolo [3, 4-b] pyridine-6yl]-8- cyano-1-cyclopropyl-6-fluoro-4-oxo-1,4-dihydro-3-quinoline carboxylic acid. Each mL of VERAFLOX Oral Suspension provides 25 mg of pradofloxacin.



INDICATION
VERAFLOX is indicated for the treatment of skin infections (wounds and abscesses) in cats caused by susceptible strains of *Pasteurella multocida, Streptococcus canis, Staphylococcus aureus, Staphylococcus felis,* and *Staphylococcus pseudintermedius.*

DOSAGE AND ADMINISTRATION
Shake well before use. To ensure a correct dosage, body weight should be determined as accurately as possible. The dose of VERAFLOX is 7.5 mg/kg (3.4 mg/lb) body weight once daily for 7 consecutive days. Use the syringe provided to ensure accuracy of dosing to the nearest 0.1 mL. Rinse syringe between doses. A sample of the lesion should be obtained for culture and susceptibility testing prior to beginning antibacterial therapy. Once results become available, continue with appropriate therapy. If acceptable response to treatment is not observed, or if no improvement is seen within 3 to 4 days, then the diagnosis should be re-evaluated and appropriate alternative therapy considered.

CONTRAINDICATIONS
DO NOT USE IN DOGS. Pradofloxacin has been shown to cause bone marrow suppression in dogs. Dogs may be particularly sensitive to this effect, potentially resulting in severe thrombocytopenia and neutropenia.
Quinolone-class drugs have been shown to cause arthropathy in immature animals of most species tested, the dog being particularly sensitive to this side effect.
Pradofloxacin is contraindicated in cats with a known hypersensitivity to quinolones.

WARNINGS
Human Warnings:
Not for human use. Keep out of reach of children.
Individuals with a history of quinolone hypersensitivity should avoid this product. Avoid contact with eyes and skin. In case of ocular contact, immediately flush eyes with copious amounts of water. In case of dermal contact, wash skin with soap and water immediately for at least 20 seconds. Consult a physician if irritation persists following ocular or dermal exposure, or in case of accidental ingestion. In humans, there is a risk of photosensitization within a few hours after exposure to quinolones. If excessive accidental exposure occurs, avoid direct sunlight. Do not eat, drink or smoke while handling this product. It is recommended that used syringes be kept out of reach of children and disposed of properly.

Animal Warnings:
For use in cats only. The administration of pradofloxacin for longer than 7 days induced reversible leukocyte, neutrophil, and lymphocyte decreases in healthy, 12-week-old kittens (see Animal Safety section). If an unexplained drop in leukocyte, neutrophil, and/or lymphocyte counts is noted during pradofloxacin therapy, discontinuation of treatment is recommended.

PRECAUTIONS
Prescribing antibacterial drugs in the absence of a proven or strongly suspected bacterial infection is unlikely to provide benefit to treated animals and may increase the risk of the development of drug-resistant animal pathogens.
The use of fluoroquinolones in cats has been associated with the development of retinopathy and/or blindness. Such products should be used with caution in cats.
Quinolones have been shown to produce erosions of cartilage of weight-bearing joints and other signs of arthropathy in immature animals of various species.
The safety of pradofloxacin in immune-compromised cats (i.e., cats infected with feline leukemia virus and/or feline immuno-deficiency virus) has not been evaluated.
Quinolones should be used with caution in animals with known or suspected central nervous system (CNS) disorders. In such animals, quinolones have, in rare instances, been associated with CNS stimulation that may lead to convulsive seizures.
The safety of pradofloxacin in cats younger than 12 weeks of age has not been evaluated.
The safety of pradofloxacin in cats that are used for breeding or that are pregnant and/or lactating has not been evaluated.
DRUG INTERACTIONS: Compounds (e.g., sucralfate, antacids and multivitamins) containing divalent and trivalent cations (e.g., iron, aluminum, calcium, magnesium, and zinc) may substantially interfere with the absorption of quinolones resulting in a decrease in product bioavailability. Therefore, the concomitant oral administration of quinolones with foods, supplements, or other preparations containing these compounds should be avoided.
The dosage of theophylline should be reduced when used concurrently with quinolones. Cimetidine has been shown to interfere with the metabolism of quinolones and should be used with care when used concurrently. Concurrent use of quinolones with oral cyclosporine should be avoided. Concurrent administration of quinolones may increase the action of oral anticoagulants.

ADVERSE REACTIONS
In a multi-site field study, 282 cats (ages 0.3 to 19 years) were evaluated for safety when given either VERAFLOX at a dose of 7.5 mg/kg (3.4 mg/lb) or placebo (vehicle without active ingredient) at a dose of 0.14 mL/lb (0.3 mL/kg). Each group was treated once daily for 7 consecutive days. Adverse reactions are summarized in Table 1.

Table 1: Number of Adverse Reactions Among Cats Treated with Pradofloxacin (N=190) or Vehicle (N=92)*

Adverse Reactions	Pradofloxacin	Vehicle
Diarrhea / loose stools	7	2
Leukocytosis with neutrophilia	4	6
Elevated CPK levels	4	4
Sneezing	4	1
Hematuria	2	2
Hypersalivation	2	1
Pruritus	2	0
Inappetence	1	3
Lethargy	1	2
Cardiac murmur	1	1
Reclusive behavior	1	1
Vomiting	1	1
Bacteriuria	1	0
Lymphadenopathy	1	0
Polydipsia	1	0
Upper respiratory infection	1	0

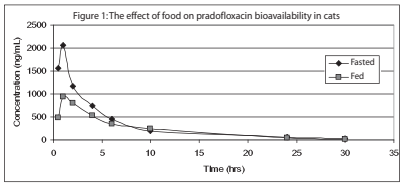
* Some cats may have experienced more than one adverse reaction or more than one occurrence of the same adverse reaction during the study. The Material Safety Data Sheet (MSDS) provides additional occupational safety information. For customer service or to obtain product information, including a copy of the MSDS, contact Bayer HealthCare at 1-800-633-3796. To report suspected adverse events, contact Bayer HealthCare at 1-800-422-9874.

For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.fda.gov/AnimalVeterinary/SafetyHealth

CLINICAL PHARMACOLOGY
Pharmacokinetics:
Pradofloxacin is rapidly absorbed following oral administration of VERAFLOX to fasted cats, with peak serum concentrations occurring in less than 1 hour. However, food markedly diminishes the serum bioavailability of pradofloxacin; mean peak serum concentrations (Cmax) are reduced 53% and mean exposures (AUC) are decreased by 26%. The relative bio-availability of pradofloxacin, when administered as the 2.5% oral suspension to fed and fasted cats, is provided in Table 2 and Figure 1.

Table 2. Mean (1 SD) serum pradofloxacin derived pharmacokinetics parameters in cats (N =12) following a 5mg/kg oral dose of VERAFLOX under fasted and fed conditions.

	VERAFLOX 5 mg/kg Dose	
Parameter	**Fasted**	**Fed**
Cmax (ng/mL)	2116 (549)	999 (400)
Tmax (hr)	0.8	1.4
AUC0-24	9111 (1939)	6745 (1524)
Half-Life (hr)	7.3 (1.7)	6.4 (1.2)



Approximately 30% of the total drug concentrations are bound to plasma proteins in drug concentrations ranging from 150 to 1500 ng/mL. Dose proportional increases in drug concentrations are observed when the oral suspension is administered to fasted cats in doses ranging from 2.5 mg/kg to 10 mg/kg. Due to its short elimination half life, there is minimal pradofloxacin accumulation following multiple daily administrations.

Pharmacodynamics:
Pharmacodynamics was determined using *in vitro* susceptibility that showed the pathogens *Pasteurella multocida, Staphylococcus pseudintermedius,* and *Streptococcus* spp. had a pradofloxacin MIC_{90} of ≤0.015 to 0.12 ug/mL. The pharmacodynamics metrics (C_{max}/ MIC_{90} and AUC/MIC_{90}) were estimated using linear regression analysis of free drug steady-state pradofloxacin pharmacokinetics parameters from fasted cats and a pradofloxacin MIC_{90} value of 0.12 ug/mL. The 95% Confidence Intervals about predicted mean $Cmax/MIC_{90}$ and AUC/MIC_{90} values were 15 to 17 and 70 to 81, respectively. It was concluded that the magnitude of the C_{max}/MIC_{90} and AUC/MIC_{90} values is predictive of product effectiveness when an oral dose of 7.5 mg/kg body weight of the pradofloxacin liquid formulation is administered to fasted cats. In addition, effectiveness was shown for cats dosed at 7.5 mg/kg body weight and fed free choice, or within two hours of dosing, in a field study.

Microbiology:
VERAFLOX is bactericidal, with activity against Gram-negative, Gram-positive, and anaerobic bacteria. The mechanism of action is dual targeting through inhibition of DNA gyrase and topoisomerase IV.
The minimum inhibitory concentrations (MICs) for pradofloxacin against *Pasteurella multocida, Streptococcus canis, Staphylococcus aureus, Staphylococcus felis,* and *Staphylococcus pseudintermedius* isolated from skin infections (wounds and abscesses) in cats in a U.S. field study from 2008 to 2009 are listed in Table 3. Only two isolates from two pradofloxacin Treatment Failure cases had elevated pradofloxacin MICs (non-hemolytic *Staph. aureus* - MIC = 2 µg/mL; *E. coli* - MIC = 4 µg/mL).

Table 3. Activity of VERAFLOX against Pathogens Isolated from Cats Treated with VERAFLOX in a Clinical Trial in the US in 2008.

Disease	Pathogen	Clinical Treatment Outcome	Number of Isolates	Sample Collection (Time Relative to Treatment)	MIC_{50} µg/mL	MIC_{90} µg/mL	MIC Range µg/mL
Skin Infections	*Pasteurella multocida*	Success	40	Pre-Treatment	0.008	0.015	≤ 0.004 - 0.03
		Failure	11	Pre-Treatment	0.008	0.008	≤ 0.004 - 0.015
	Streptococcus canis	Success	13	Pre-Treatment	0.12	0.12	0.03 - 0.25
		Failure	2	Pre-Treatment			0.06 - 0.12
	Staphylococcus aureus	Success	10	Pre-Treatment	0.12	0.12	0.015 - 0.12
		Failure	0				
	Staphylococcus felis	Success	13	Pre-Treatment	0.03	0.06	0.03 - 0.12
		Failure	1	Pre-Treatment			0.06
	Staphylococcus pseud-intermedius	Success	10	Pre-Treatment	0.06	0.06	0.03 - 0.06
		Failure	1	Pre-Treatment			0.03

EFFECTIVENESS
The clinical effectiveness of VERAFLOX was demonstrated in a multi-site (16 sites) field study. In this masked and randomized study, the effectiveness of VERAFLOX was compared to a placebo control (vehicle without active ingredient). Of the 282 cats enrolled in this study, 190 were treated with VERAFLOX once daily at 7.5 mg/kg (3.4 mg/lb) body weight for 7 consecutive days and 92 were treated with placebo once daily at 0.3 mL/kg body weight for 7 consecutive days. The effectiveness database included 182 cats: 66 placebo (vehicle)-treated cats and 116 VERAFLOX-treated cats. The analysis of this effectiveness database showed that the cure rate was greater in the VERAFLOX group on Day 15, as summarized in Table 4. Study cure rates were determined approximately 15 days after initiation of therapy. The statistical evaluation of the primary effectiveness endpoint (Study Cures) showed that VERAFLOX was different from placebo with 73.4% VERAFLOX study cures versus 38.9% placebo study cures.

Table 4: Day 15 Case Classification

Treatment Group	Percent Cures
VERAFLOX N= 116	73.4%
Placebo N= 66	38.9%
P-value	0.0053

ANIMAL SAFETY
Target Animal Safety Study: Safety was evaluated in 32 healthy, 12-week-old kittens administered VERAFLOX once daily at doses of 0, 7.9, 23.7, or 39.5 mg/kg (0, 1, 3, and 5 times the recommended dose) for 21 consecutive days. Additional control (0X) and high-dose (5X) animals were maintained for 45 days after treatment cessation.
There were statistically significant decreases in neutrophils, lymphocytes, and monocytes in the 3X and 5X groups compared to the controls. During the treatment period, one 3X cat and three 5X cats had absolute neutrophil counts below the reference range. Bone marrow cytology results consistent with bone marrow suppression (myeloid hypoplasia) were seen in the 3X neutropenic cat and two of the three 5X neutropenic cats. The 3X cat was neutropenic on the last day of the study prior to scheduled euthanasia, while absolute neutrophil values for the three 5X cats returned to normal either during treatment or after the cessation of treatment. The most frequent abnormal clinical finding was soft feces. While this was seen in both treated and control groups, it was observed more frequently in the 3X and 5X kittens.
Ocular Safety Study: Ocular safety was evaluated in 20 healthy adult cats using pradofloxacin in capsules administered orally, once daily at doses of 30 mg/kg and 50 mg/kg for 23 days. No effects were seen in the following investigated ocular parameters: ophthalmic examinations, ERGs, and optical coherence tomography. Cats receiving 50 mg/kg/day of pradofloxacin showed mild weight loss. Cats receiving 30 and 50 mg/kg/day of pradofloxacin exhibited hypersalivation and vomiting throughout the study. Dose-dependent reductions in white blood cell counts were noted in the pradofloxacin-treated cats. One cat receiving 30 mg/kg/day of pradofloxacin exhibited minimal photoceptor degeneration on light and electron microscopy of a type that differed from enrofloxacin-treated cats (comparator used in this study); the effects of pradofloxacin on these retinal changes is unknown.
Pilot Toxicity Study: In an oral toxicity study, 4 cats received pradofloxacin at 50 mg/kg/day for 25 days. All cats exhibited vomiting and hypersalivation. One cat exhibited fluoroquinolone-induced neurologic signs (decreased mobility, staggering, and vocalization) on Day 5 of the study.

STORAGE CONDITIONS
Store below 30°C (86°F).
After initial opening, VERAFLOX has demonstrated in-use stability of 60 days.

HOW SUPPLIED

Code Number	Bottle Size
84364593	15 mL
84364607	30 mL

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84364593 / 84364607, R.0
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Bayer

Bayer HealthCare LLC
Animal Health Division
Shawnee Mission, Kansas 66201, U.S.A.
17928
May, 2012

Dr. Hunthausen: Owners need to understand that we're not just controlling the "ick" factor or the irritation factor. Controlling those parasites goes beyond that in regard to controlling more serious things that they might not be aware of. If we want to help keep the pets healthy and happy and around for a long time, that's just something we want to pay a lot of attention to.

Dr. Hostetler: Anything else that you want to share with the practitioner relating to cats or a cat-friendly practice?

Dr. Horwitz: Increasing cat visits and improving preventive care will make the cats' lives better and improve their welfare. It's not just about the income for the practice; it is about providing good patient care through all the life stages of the cat so that families can enjoy their relationship for as long as possible. It will help the cats, but it's also great for the veterinary profession as a whole to do that.

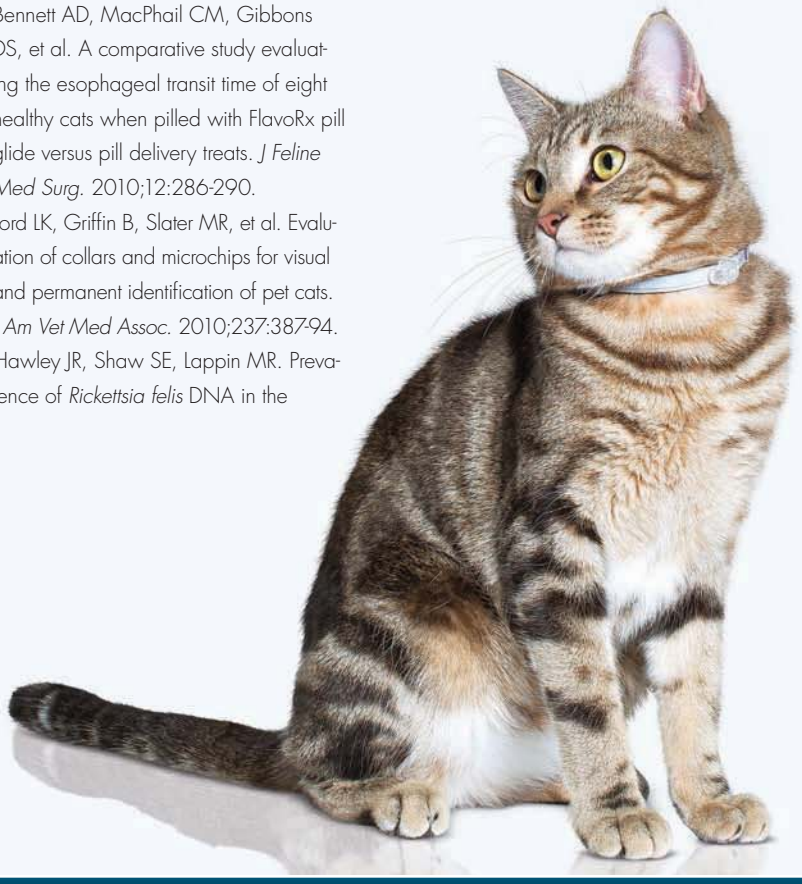
Dr. Little: Generally good medicine means good business. One tends to follow the other.

The *Bayer Veterinary Care Usage Study* has shown that pet owners don't always understand the value of preventive care visits and, as a result, cats in particular may not be receiving the care that they need. As our pets live longer and infectious diseases are less geographically isolated, the need for routine care becomes even more important. Veterinarians are in a unique position to have a significant positive impact on human and feline health by educating clients, staff, and colleagues to ensure all aspects of preventive care are being addressed.

Veterinarians are in a unique position to have a significant positive impact on human and feline health.

REFERENCES

1. Bennett AD, MacPhail CM, Gibbons DS, et al. A comparative study evaluating the esophageal transit time of eight healthy cats when pilled with FlavoRx pill glide versus pill delivery treats. *J Feline Med Surg.* 2010;12:286-290.
2. Lord LK, Griffin B, Slater MR, et al. Evaluation of collars and microchips for visual and permanent identification of pet cats. *J Am Vet Med Assoc.* 2010;237:387-94.
3. Hawley JR, Shaw SE, Lappin MR. Prevalence of *Rickettsia felis* DNA in the blood of cats and their fleas in the US. *J Fel Med Surg* 2007;9:258-262.
4. Lappin MR, Griffin B, Brunt J, et al. Prevalence of *Bartonella* spp., *Mycoplasma* spp., *Ehrlichia* spp., and *Anaplasma phagocytophilum* DNA in the blood of cats and their fleas in the United States. *J Feline Med Surg* 2006;8:85-90.
5. Lappin MR, Hawley J. Presence of *Bartonella* species and *Rickettsia* species DNA in the blood, oral cavity, skin and claw beds of cats in the United States. *Vet Dermatol* 2009;20(5-6):509-514.



Simply getting along with low-cost clinics isn't only issue

Expansion of services hurts full-service clinics.

With great personal interest, I read the November dvm360 Leadership Challenge: Working with shelters. After 40 years of practice, I don't feel it's an overstatement to say I now regard 501(c)s to be the greatest single threat to the future of private practice for several reasons—some of which I address here.

If this were simply a matter of learning to "collaborate" with shelters or rescue groups, I don't feel that 501s would be a problem. The problem is far more pervasive than your November issue describes and I would consider myself fortunate if only a shelter (or two) were involved. Allow me to explain.

Almost 10 years ago, a nonprofit was established in my hometown, which has a population of 120,000, to "provide affordable preventive care for pets owned by the less affluent." A small strip-center lease clinic opened that was not associated with any shelter or rescue group and offered no adoption or foster services whatsoever. It was only about capturing high-volume, high-net preventive services under an altruistic 501(c)3 banner with catchy slogans.

The reality was that pets were in by 9 a.m., out by 4 p.m., with no overnight stays or spays over 60 pounds or 8 years old allowed. "Don't bother us with infected ears—we have 50 spays to do." Initially, services were limited to spays, neuters and primary vaccines for those with restricted incomes. (Still no problem, and I might add that I haven't lost any sleep fretting over "cheap spays or neuters.") Over time, however, services were expanded to annual boosters, dentistry, heartworm prevention, and other elective procedures, including declawing of cats. As your story mentioned, many of these patients arrived riding in a Mercedes.

As I write today, after 10 years, this "nonprofit" clinic is now the largest veterinary employer in town with 28 full-time employees. Its (non-DVM) executive director has reported annual personal income in excess of $400,000 solely from this operation, which has since opened satellites in several nearby cities and towns—all tax-free. Guidestar, which reports on U.S. nonprofits, indicates that the top three spay-neuter surgeons this clinic employs received 2014 incomes in the $170,000 to $190,000 range.

Everyone is painfully aware of social media and the "poison pill" described in the *dvm360* coverage. I have privately discussed this situation with veterinary consultants and their only suggestion is to open a competing nonprofit sponsored by local veterinarians with meaningful benefits beyond cost for pet owners, like actual emergency medical assistance funding, for example. I've also filed Form 13909 with the IRS challenging the 501(c) status of this group and discussed this matter with state licensing board officials and my state veterinary association. All express "deep concern" but have been otherwise powerless to help. We realize this is almost a no-win situation for traditional full-service clinics.

If it were just a matter of leveling the playing field tax-wise, it would be bad enough, but there are greater consequences on the horizon for pet owners as well as full-service DVMs. How so? Higher profit margins realized by traditional clinics for preventive care in past decades have (silently) subsidized the fixed costs of providing full-service care. Seldom do pet owners pay the true costs of full-time staffing or overhead to set a fracture or handle a pyometra. Without reasonable traffic in preventive care, traditional clinics will face a choice of closing their doors or raising fees to fully fund treatment and diagnostics. That only risks further damage to the false perception of us as "greedy" vets. Our established clinic can go days without seeing a healthy pet, and a reduced caseload of seriously ill and aged only further stresses team morale and practice owners struggling to make payroll. I don't know where this all ends, but it's an unsustainable situation as it is now.

I just felt compelled to say thanks for your coverage and the opportunity to comment. I hope this matter will remain in focus with *dvm360* and future discussions will continue for the good traditional practices and pet owners as well.

David Zoltner, DVM

Get in touch

Contact us on Twitter: @dvm360, on Facebook: facebook.com/dvm360, via e-mail: dvmnews@advanstar.com or online at dvm360.com/community.

Low-cost clinics aren't inadequate

It is possible to serve a different group of clients while still practicing high-quality medicine.

In recent weeks I've read articles concerning the relationship between nonprofit veterinary clinics (with or without a shelter association) and for-profit clinics. Most discuss the fact that the relationship is far from pleasant for many and that it takes finesse to achieve a balance that allows them to work side by side.

Those discussions relate to the declawing conversation (in a roundabout way, so please be patient).

My gripe is this: For-profit veterinarians who feel superior to nonprofits love to say, "You get what you pay for. We charge for what we do and make sure folks know what they get for their money." These doctors' spay packages,

dentals and so on show an itemized list of all services provided with the cost at the bottom.

This implies my clinic is inadequate.

I am proud to say that in less than two years my high-volume, high-quality spay-neuter practice has spayed and castrated more than 10,000 cats and dogs (including serious pyometras referred to us by local veterinarians whose clients could not afford their prices), with minimal complications of importance and a loss of only four cats (though certainly significant to those owners). I don't try to be fast when assigned 50 cats in one day; I strive to do it right and be consistent every time. I've naturally become fast.

All cats that can be handled are examined by a veterinarian before sedation. All dogs and cats receive gas anesthesia for maintenance. Dogs are intubated, cats only when nasal congestion or another issue is apparent (I can spay a cat faster than many people take to intubate one, so I don't routinely tube them). We give subcutaneous fluids and vitamin B12 injections to any cat that appears remotely dehydrated (during winter this includes most feral cats) at no charge. We monitor breathing visually and attach a pulse-oximeter. Recovery is on a heated bed within eyesight of at least three people at any given time.

I could go on, but I think this disclosure issue when comparing clinics is a non-issue. It does, however, bring up a challenge I make to these same veterinarians who want to "show folks what they're paying for." I dare you to include in your declaw package offered to every kitten owner who comes in the door everything they are receiving, making it obvious exactly what a declaw is!

I've been interested in the Paw Project, started by Jennifer Conrad, DVM, and have started asking people who declawed their cats whether they knew exactly what the procedure involved. Of the 18 I've asked so far, none had any idea, and most where disturbed and not sure they would have gone through with the surgery had they known. As veterinarians we are obligated to disclose exactly what we are doing for everything we do to someone's pet.

I used to do declaws, but I stopped more than a decade ago after seeing too many strays beat up on the streets come into the shelters I worked with.

So, all you veterinarians who like to list on estimates and invoices what clients are getting for their money, are you brave enough to include "amputation of distal phalanx" and be sure your clients are aware of what that is? If not, I think your bottom line is the dollar. Maybe it will take clients suing for misrepresentation to catch your attention.

Jennifer Doll, DVM
Solon, Iowa

I disagree with Dr. Joan Freesh's statement in "Why all the fuss about low-cost clinics" (November 2014) that "low-cost providers that do not require proof of financial need aren't really reaching those most in need."

I own a low-cost (*not* nonprofit) veterinary clinic. We do basic medicine only and work closely with nearby full-service clinics for procedures, surgeries, etc. Because our overhead costs are low, we are able to provide decent veterinary care at a lower cost to the owner. We flat-out tell new clients that we are *not* just an inexpensive version of the clinic up the street. Those clinics provide valuable, sophisticated diagnostics and treatments not available at our clinic.

When opening in 2006, we considered requiring proof of income before taking a client. We opted not to for one reason. There are plenty of folks on government subsidies for a number of reasons. There are also people who are trying to make it the old-fashioned way. They're working hard, holding multiple jobs, saving and trying to make an honest, decent life for their families and pets. There was no way I was going to turn them away because they could not produce Section 8, disability or food stamps paperwork.

Thankfully, we do have plenty of clients who can absolutely afford the full-service clinic. They come to us because of the care they receive and because they want to support our little storefront veterinary clinic. I accept them happily because they *can* afford to do more for their pets and, to be quite honest, their transactions increase my average transaction fee so that I can stay open to help the others.

Susan McMillan, DVM
Burlington, Vermont

dvm360 readers fondly wish Dr. Obenski farewell

I was so sorry to hear that Michael Obenski was hanging it up ("Obenski's final bow," December 2014). He has been on the mark for as long as I have been in practice (30 years). His column was the first thing I read in your publication every month and always evoked comment and agreement from the veterinarians in our practice. Hopefully there is someone out there to fill in the void. Great magazine, by the way. Being a mixed practice, we always enjoy Dr. Brock's discourses as well.

Mike Meeboer, DVM
Torrington, Wyoming


dvm360
WHERE DID I GO WRONG?
Michael A. Obenski, DVM
Obenski's *final* bow
Longtime columnist bids farewell to this page after 37 years.
ADVANSTAR

It was very emotional for me to read the last of Mike Obenski's Where Did I Go Wrong columns. Though I have never met him, it feels like losing an old friend. His incisive and insightful musings have been a monthly highlight for me for most of those 37 years. His depth of understanding of the human-animal condition and ability to frame that understanding with such coruscating literary flair was as inspirational as any soliloquy by Shakespeare. Best wishes for retirement, Mike Obenski!

Peter Lugten, DVM
Lindenhurst, New York

I wanted to thank Mike Obenski for making me laugh every month. Some days I wonder why I ever became a veterinarian, and while I love animals and medicine, I really love the people. He nailed all those personalities that make my day so interesting.

Bethany Summers, DVM

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See brief summary on page 44

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Column reflects inaccurate understanding of ProSal

Method described is not how ProSal was designed to be used.

I have read Dr. Christopher J. Allen's article "Put ProSal out to pasture" and I could not disagree with it more. It is time that people really understand ProSal and allow all associate veterinarians to reap the benefits of it. As the "author" of the ProSal compensation method, it amazes me how many people think they are paying associates using the this method of compensation when, in fact, they are not.

It appears that the author has two major misunderstandings regarding ProSal. First, there is never a negative carryover with ProSal. At the end of the year, if the associate is not paid the guaranteed base, he or she would be owed the difference. Period. There is no carryover. The associate cannot be paid less than the guaranteed base; he or she can only be paid more. Second, Dr. Allen seems to think that associates are getting a lower guaranteed base salary when they are paid on ProSal. This is not the intent of ProSal. Associates should receive a fair guaranteed base that's the same as they would have been paid if they were paid on straight salary.

In my consulting firm we have negotiated many compensation packages for associates. Typically, if a veterinarian has been employed previously, we use his or her previous year's salary, or more, as a base. If the veterinarian has not been previously employed, we normally use the regional average to determine the base salary.

I truly believe ProSal is, by far, the best way to pay associate veterinarians. They can't make any less than their guaranteed base; they can only be paid more using the method. When I teach at veterinary schools, every year I talk with the students about the various methods of compensation. Students see the value of ProSal. I've even had graduates come and relate to current students how well it has worked for them.

Dr. Allen also writes that, in his opinion, ProSal worked well when the economy was doing well, but now when the economy is faltering, it's not as effective. My firm and I personally work with many veterinary practices on a daily basis and it is my opinion that veterinary medicine is doing quite well and has been doing well for quite some time. Most every practice we work with has had a significant increase in both their gross income and their net income year over year.

He seems to indicate that ProSal has caused a rash of people to seek out legal advice. If this is the case, I apologize. The last thing I would want is to be responsible for more money leaving our profession and going to the legal profession. It is unfortunate that the name ProSal is so often invoked to describe a method of compensation that is actually not the method of compensation that we designed. ProSal should provide a fair guaranteed base (not a lowball one) that is paid without any negative carryover. Associates paid on ProSal receive fair compensation based on the services they provide to their clients. It also promotes optimum patient care by giving the associate veterinarian an incentive to provide a full-service approach to clients.

Mark Opperman, CVPM
President, VMC, Inc.
Evergreen, Colorado

Client's refusal to vaccinate puts herself, veterinary team at risk

Possible exposure to rabies is not something to take lightly.

I couldn't disagree more strongly with Marc Rosenberg's December column "Safety—or client's preference—first?" I try to tailor vaccination recommendations and administration to individual patents, to neither undernor overvaccinate. But rabies vaccination is legislated, not primarily for animal health but for human health. Cats need to be vaccinated against rabies, even if they're kept inside.

That cats are probably "dead-end hosts" and not an actual threat to humans is a moot point. When an infinitesimal chance of rabies exposure is suspected, tens of thousands of dollars will be spent (and in the case of cats, wasted) on testing for people exposed only by imagination! Other pets may be euthanized and there are legal liability issues—it's a nightmare for the pet, the client and the veterinarian—so the veterinarian can and should have a say in the decision.

Although it's highly unlikely that a pet would get exposed to rabies in an animal hospital, the same cannot be said for other infectious diseases. More and more pediatric practices are refusing to care for children whose parents refuse "core" vaccinations. If I see an animal in an exam room that is not properly vaccinated against rabies or an unvaccinated young animal that is at risk for distemper, parvovirus or upper respiratory infection and the client refuses vaccination, I take care of the pet and the problem at hand and inform the client I will not see the pet again unless it has been vaccinated (unless I decide there is a medical contraindication). But if the pet needs to be hospitalized, I refuse to do so without permission to vaccinate.

When so many veterinarians now refuse to do even simple, safe procedures without hundreds of dollars' worth of lab work or refuse to euthanize a vicious dog because it is healthy, I fail to understand a reluctance to insist on minimal vaccina-

tion. Whlie the client has the right to accept or decline the protocol recommended or required by the veterinarian, the veterinarian also has the right to decide how to handle clients who do not accept that protocol.

One final comment: I can't imagine considering the client described as an excellent client who comes in routinely. In my experience, the person described only comes in when desperate, argues every recommendation and rarely follows the recommendations of any mainstream professional.

Patricia Burke, DVM
Providence, Rhode Island

I don't know the laws in New Jersey, but in many states there are laws concerning possible exposure of pets to wild animals. Tuffy went out of the house and came back with a laceration. Where did it come from? Could Tuffy have tangled with a rabid skunk or raccoon? We can't rule out that possibility. In my state, animal control officers would be notified and apprised of the situation. The ethics problem as described here would increase significantly if Tuffy were taken care of by the veterinarian, showed odd behavior a few months later, and bit his owner—who would then be at risk of contracting rabies.

Personally, I have an inflexible policy on rabies vaccinations. All cats and dogs over the age of 4 months are required by Virginia law to be vaccinated for rabies, and I insist on it. If a client turns down a distemper or feline leukemia vaccination, the worst thing that happens is that the pet dies. But if a rabies vaccination is declined, a client could be put at genuine risk. I would not want that on my conscience.

Ruth E. Chodrow, VMD
Fishersville, Virginia

I do agree with Dr. Rosenberg. While I respect the decision of the team members who declined to assist in treating Tuffy, I would have been one who assisted the doctor in this situation. And I would have used gloves and a towel to wrap the cat in for sedation.

The owner, while a good client, is foolish not to vaccinate her cat, especially for rabies, and I think Dr. Summer acted most appropriately in insisting Tuffy be vaccinated. Rabies is deadly, and treatment is expensive and may not work after symptoms appear. Not even an excellent client is worth the risk. However, no one could know if Tuffy had come in contact with a rabid animal while out where he got hurt. In my area, rabies is rare and found primarily in the bat population, thus lessening the chance of infection through a laceration. If Tuffy had been playing with a bat when he got hurt, it would have been a much different scenario.

Ila Fetterly, CVT
Rainier, Oregon

Let's bring positive news about the profession to the front

I was disappointed by the choice of full-page veterinary news articles in the December 2014 issue:

> Veterinarian indicted, suspended

> Brother charged in death of veterinarian

> Four dead dogs found at Ill. clinic

> Man goes on stabbing spree at two hospitals in Washington state.

Now, the naked veterinary students story was amusing, but is *dvm360* following the media guideline of "If it bleeds, it leads"? In all seriousness, those stories are rather depressing and as such don't deserve a full or nearly full page each. There's lots of good stuff going on in our profession that goes underreported. Let's focus on that, please.

Happy trails to Dr. Obenski. We'll miss him.

John S. Parker, DVM
Novi, Michigan

Veterinary students' nude calendars in poor taste

Call me an old fuddy-duddy, but I feel that the "get naked" calendars done by the Australian veterinary science students in the December 2014 issue, "Australian veterinary students get naked to cover costs," are in extremely poor taste and unprofessional, to put it mildly. To me the end goal—raising money—does not justify the means. Just my two cents.

Julie Roane, DVM
Ruston, Louisiana

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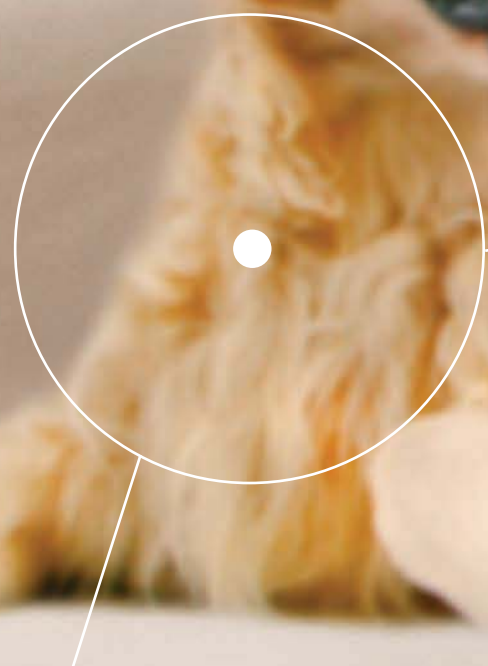

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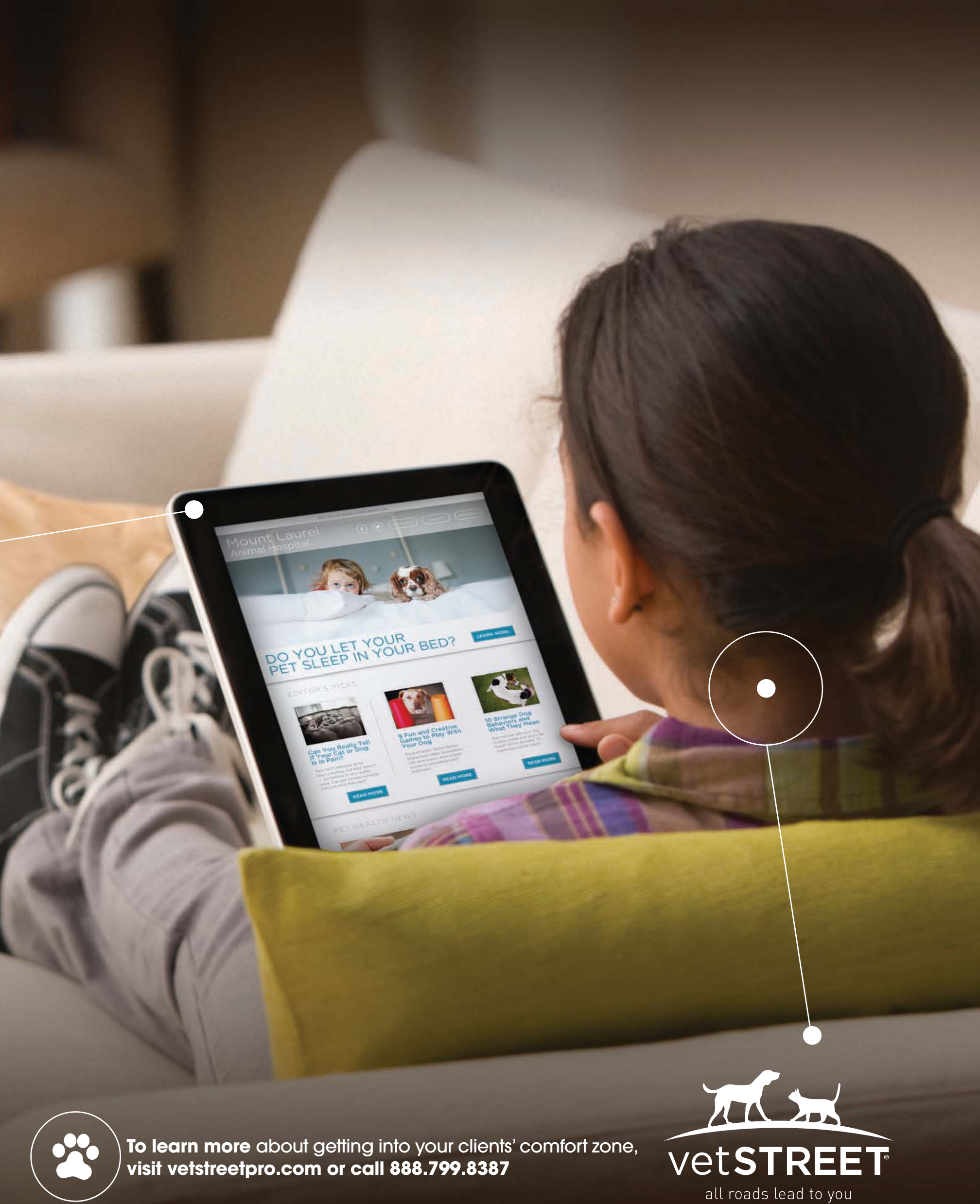

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all roads lead to you

My proudest moment: Becoming a zero

Paying off your veterinary school debt—as soon as possible—is the best thing you can do for yourself.

One of my fondest memories in the past decade is the day I became a zero—that is, the day my net worth became $0.00.

I remember it well: sweaty palms logging on to the hated student loan payment site, gritting my teeth and delivering the final blow to the lead balloon of my student debt. Afterward, I wanted to run outside and raise my hands and exclaim to the world, *"I am a zero! I am finally worth nothing!"* But we lived in a quiet neighborhood at the time, it was late at night, and I was a little worried the neighbors would call the cops.

Two hundred thirty thousand dollars. That was the breaking point.

Here's what I mean: In hindsight, knowing what I know now (I graduated in 2008), I can see that $230,000 is the absolute maximum amount I would have borrowed without feeling like I'd made a poor decision or should have pursued a different career. Anything above that mark would have eventually caused me to regret my decision to become a veterinarian and my financial decisions along the way.

Yet when I look back at my feverish pursuits to gain admission to veterinary school, one thing is clear. I wouldn't have listened to anyone about the dangers of student debt back then. Even if I'd met the time traveler version of myself coming back from the year 2020 to slap me around and tell me to be careful with my loans, I would have told that freak to get back in his DeLorean and leave me alone 'cause ain't nobody got time for that.

I wouldn't have listened to anyone about the dangers of student debt back then. Even if I'd met the time traveler version of myself coming back from the year 2020 to slap me around and tell me to be careful with my loans, I would have told that freak to get back in his DeLorean and leave me alone 'cause ain't nobody got time for that.

The good news is that I graduated owing $110,000. I realize this is a paltry number in comparison to current averages and the burden of many of my new DVM friends. But it was still a major challenge to deal with. Through austerity and hard work, my wife and I have finally put that debt to rest for good and I couldn't be happier about it.

But the death of this debt, like any death, leaves opportunity for reflection and lessons.

First of all, I'm going to stubbornly adhere to my idea that in the economy I lived through after graduation, paying down my debt as quickly as possible was the only strategy that made sense. You've all heard the argument that we need to start saving from day one, debt or no debt. The examples go something like, "If Jack saves $1 a month starting at 10 years old and Jill saves $10 a month starting at 20 years old, who has more money by the time they retire?" In those examples, neither Jack nor Jill owed $200K accruing 6 percent interest annually. And somehow Jack and Jill were seeing steady returns on their investments, which

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I can't say I've experienced in the current economy. Yes, it's essential to create an emergency cash fund before you start eliminating your debt. Beyond that, though, any delay will cost you dearly.

There's also the viewpoint that life is a marathon—that debt is something you'll be paying for over the marathon of your career and you shouldn't worry about it. (I'm pretty sure a lender came up with that one.) Forget that. Life is a bunch of marathons. Marathon number one is slaughter that debt so you can move on to the next marathon of owning what you have instead of the bank owning you. Owning your home. Owning your practice. Building actual wealth by keeping all of those teensy little tenths of percentages out of lenders' pockets and safely in your own.

Now that I've eliminated one big debt, my next challenge will be finding any peace with debt in the future. Quite simply, I hate it. Once you make a concerted effort to offer your debt a swift and humane death, you more intensely realize exactly how much that debt costs you—in dollars, yes, but also in quality of life and overall well-being. I now know exactly how hard I have to work—and for how long—to stalk that huge, ugly financial beast and send it to its final bloody resting place. I bear the scars. No wonder I want to strangle the real estate agent telling me we should buy the brand new house in the upscale neighborhood instead of the starter home at a third of the cost.

Why am I an expert on debt? Because mistakes add wisdom and I have made every darned financial mistake there is. Often when I think back on purchases or decisions I made in the past, it's clear that the sum of many less-than-good decisions amounts to a whole bunch of money I would rather have in the bank now.

Student debt isn't an isolated problem, and there's no easy fix. But one thing you can do now is help yourself. You can cut costs, sacrifice, work hard and kill the debt to create a better future for yourself. Once you've dragged your scraped, bruised, bleeding, exhausted skeleton out from under that enormous pile, you may then move on to helping reshape the financial future of our profession. I would agree that we don't have a responsibility to spread bad news to young kids who want to go to veterinary school. However, I do argue that we have a responsibility to educate the brightest and most promising veterinarians-to-be on doing everything they can to minimize their borrowing, starting right now.

The fact that I no longer have to deal with my own student debt doesn't mean I'm giving up the fight to prevent this problem from taking a Bellator-style rear naked chokehold on our profession. My personal war against student debt ain't over, even though I've squarely won the first battle—to become a zero. **dvm360**

Dr. Jeremy Campfield works in emergency and critical care private practice in Southern California.

Elsewhere in dvm360

Consultant Christopher Allen, DVM, JD, presents a different point of view in his Letter of the Law column in this issue—he says debt is not evil, just something to be managed. **See page 54.**

Dental disaster *sinks its teeth* into this doctor

Transparency helps avoid nasty veterinary client surprises.

Dr. Clery had owned a two-doctor small animal practice for 28 years. He didn't bother with social media—no Facebook or Twitter presence for him. Rather, he believed that compassionate, competent pet care was the key to a successful practice. He took time to communicate directly with his clients and their pets. He thought forms and releases hindered his ability to treat his clients and patients like family. Pet birthday cards and informational reminders had served him well all these years.

Fluffy Hacket, an 11-year-old poodle, was recently diagnosed with dental disease. Ms. Hacket was distressed at the news, but Dr. Clery patiently explained that older small-breed dogs often required dental care even when cared for by the most diligent of owners. He told Ms. Hacket that Fluffy might need an extraction or two, and the tartar needed to be removed from his teeth. "Will it affect his smile?" she asked. Dr. Clery replied, "Just leave things to me. I'll take good care of Fluffy."

Once Fluffy was anesthetized, intubated and prepared for his dentistry, Dr. Clery began the procedure. He evaluated the dog's mouth and began to remove the extensive calculus from the teeth. As is often the case, the tartar removal revealed loose, unsalvageable teeth that were essentially being held in place by the calculus buildup. Dr. Clery began doing the necessary extractions. After all was said and done, Fluffy had lost 16 teeth. Dr. Clery thought to himself, "This dog is going to feel a heck of a lot better."

Fluffy recovered uneventfully, and the practice let Ms. Hacket know that her beloved dog could go home that evening. Chief technician Lea Johns personally discharged all dental patients and allowed ample time for post-procedural questions and instruction. Ms. Hacket arrived with Fluffy's doggie coat and stroller. She met with Johns, who told her the dog had lost 16

teeth due to severe dental disease that was not discovered until Dr. Clery was well into the procedure.

The color drained from Ms. Hacket's face. "Sixteen teeth! What have you done to my dog?" she shouted. She'd been prepared for the loss of a tooth or two, but 16 was unbelievable. "Why didn't the doctor call me so that I could participate in the decision?" she asked. At this point Dr. Clery came in to speak with Ms. Hacket and explained the necessity of the extractions. But the client was inconsolable. "You never told me what you might have to do. You could have consulted with me before pulling all those teeth," she said.

She went on to say that the actions of the practice were unforgiveable. "You have not heard the end of this, Dr. Clery," she said. She and Fluffy exited the office in a huff. Soon afterward, Dr. Clery received a notice from an attorney as well as a letter of inquiry from his state board. He was upset at this turn of events but confident that he'd done the right thing. He believed the patient's well-being and medical needs prevented him from stepping away during the procedure to call the pet owner. In addition, he had informed Ms. Hacket of the dental disease and she'd agreed with his request to "to leave things to me" to take care of. The state board wrestled with the case but concluded that Dr. Clery had not violated any state practice statues.

The civil action did not end as well—Dr. Clery's insurance carrier agreed to settle a significant amount of money on Ms. Hacket. Dr. Clery wrote off the whole series of events as the result of an extreme overreaction from a pet owner and ultimately believed he'd done his best for the dog in spite of the chaos Ms. Hacket created.

Do you agree with Dr. Clery?

Rosenberg's response

Never forget that there is always a pet owner attached to the patient. The clinician is always caring for both the owner and the pet. In this case, Dr. Clery forgot that the owner was part of the treatment protocol.

When he discovered that many extractions were necessary, he should have called and consulted with the owner. In addition, he should have presented an informative release form for Ms. Hacket to sign so that everyone was aware of the agreed-upon medical care.

Forms and releases do not prevent a veterinarian from treating his clients and patients like family, but rather it offers the courtesy of written documentation for all to consider. This assists in a complete understanding of the pet's care.

Dr. Clery was well-intentioned, but he was wrong. "Just leave it to me" was a statement made by doctors years ago when propriety dictated that a doctor never be challenged. In this day and age, honesty and transparency are the secret to quality pet care and satisfied clients. dvm360

Dr. Marc Rosenberg is director of the Voorhees Veterinary Center in Voorhees, N.J. He is a member of the New Jersey Board of Veterinary Medical Examiners. Although many of his scenarios in "The Dilemma" are based on real-life events, the veterinary practices, doctors and employees are fictional.

4 TRICKS to pay off debt *faster*

Avoid credit cards and recognize the reality of interest-only loans.

Everybody in our profession is talking about debt. It's drowning new veterinary graduates, and clients' household debt prevents them from visiting our practices for wellness visits. While the topic of debt seems to be on everyone's lips, many of us could better understand the intricacies of borrowing, interest rates, repayment schedules and other financial realities. Albert Einstein once called interest the most powerful force in the universe. As veterinarians we can learn to manage it—and it can even be used for our benefit.

1 Realize that debt is not evil

First and most importantly, we need to realize that debt and interest are not inherently evil—contrary to the opinion of my parents, whose Great Depression experiences convinced them debt was to be avoided at all costs. Borrowing is the life blood of commerce, education, development, poverty mitigation, capital accumulation and sound financial planning. Saying that paying interest is a bad thing is like believing that fire is evil because the White House burned down during the War of 1812. Debt and fire are not bad things. Both just need to be respected, monitored and actively managed.

2 Learn the Rule of 72

Second, we need to heed the Rule of 72. While older readers are likely familiar with this concept, our debt-burdened younger doctors may not know about it or realize its significance. The rule works this way: you can roughly calculate the amount of time it will take for a debt (or an investment) to double by dividing the compound interest rate into 72. The result is the number of years it will take the amount to double.

So, for example, inflation at the rate of 7.2 percent (as it has been at times in the past) means prices will double in about 10 years. Or, more saliently speaking, if you have credit card debt at the rate of 18 percent, your debt would nearly double in four years if you did not make payments. The power of an interest rate that high makes it such that making the minimum monthly payment barely reduces the principal balance. Consequently, it can take decades to retire credit card debt.

So Einstein wasn't kidding! The take-home point is this: you should do almost anything necessary to avoid incurring credit card debt. Current law allows credit card companies to hit you with an interest rate that was only charged by mobsters when I was a kid. However, usury is no longer a felony. It is an established business model designed to make the unaware owe his or her soul to somebody's company store.

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Elsewhere in dvm360

For a different point of view, see Dr. Jeremy Campfield's Death to Debt column, where he asserts that, at least psychologically speaking, debt is certainly evil. **See page 50.**

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3 Understand long-term loans

Third, understand the significance of an interest-only mortgage or loan product. This concept has become increasingly popular with young borrowers because it provides a route to acquiring the thing you want—a house, a veterinary practice, a student loan refinancing arrangement. It's based on the assumption that you'll have more income with which to pay down the debt principal in the future.

Unfortunately, this assumption is half right and half wrong. Later in life, you probably *will* have more income as your career advances. What you will also have, however, are more financial obligations—babies, property taxes, medical bills, car payments and so on—which will lead to you "sitting" on this never-abating debt principal.

So with a long-dated debt obligation, you have very little equity in your purchase until near the end of the loan period. If you buy a house or a clinic building with a 30-year mortgage, you owe nearly as much 10 years into the mortgage as you did at the beginning of the loan. That may not seem all that important, but it will be when you go to apply for a second mortgage to finance a kitchen remodel or construction of a new kennel room.

4 Leverage debt to win

Lastly, harness the power of debt and compound interest for yourself! With the caveat that *you need to discuss any strategy with a qualified CPA*, I submit that you may want to look carefully at "recategorizing" your debt and interest payments. These strategies let you 1) take some of the steam out of the Rule of 72 and 2) get the federal and/or state government to lighten your burden of debt repayment. Here are a few of the many approaches I have used for my clients and myself:

Make the interest tax-deductible. When I was starting out as a veterinarian, all interest was deductible from income taxes, which effectively meant the government was willing to pay anywhere between 20 percent and 50 percent of my interest payments. Sadly, those days are long gone as far as retail debt, credit card debt, car loan interest and so on. However, mortgage interest is still deductible. Therefore, if you've decided where you want to live, consider buying a home sooner rather than later. If you're disciplined, you can pocket major tax savings from your deductible interest expense and use it to pay off your credit card or other kind of nondeductible debt.

Utilize margin interest. Again, consult your tax advisor before taking any steps, but think about this: If you put your savings and investments into a free brokerage account with Schwab or Fidelity, you can actually borrow against those investments up to a certain amount. Used with care, these margin loans can be used to pay off credit card debt. In so doing, tax filers who itemize deductions may be able to take a deduction for investment interest (margin loans). In the current world of the Federal Reserve's "quantitative easing policy," margin interest rates are running well below credit card rates and sometimes below student loan rates.

Accelerate your plans to buy a practice. If you're still paying off student loans, it may seem impossible to imagine buying a veterinary clinic or buying into an existing partnership. But delicately handled, practice ownership may not be as unattainable as it seems. Think about this example: Assume that you are burdened by credit card debt of $10,000 at 18 percent interest and $50,000 in student loan debt at 8 percent. Thrilled with your veterinary skill and productivity, your boss offers you the chance to buy into 25 percent of his million-dollar practice and will finance the buy-in at 8 percent.

Assuming the deal is otherwise on the up-and-up, your employer's offer could yield a net increase in your annual disposable income—which you could use immediately to pay down the credit debt. The interest rate on your buy-in loan is no worse than your student loan interest rate, and it is probably deductible as business loan interest. In effect, you've used your employer's money to secure a business rate of return of (if the hospital is well-managed) 15 to 20 percent.

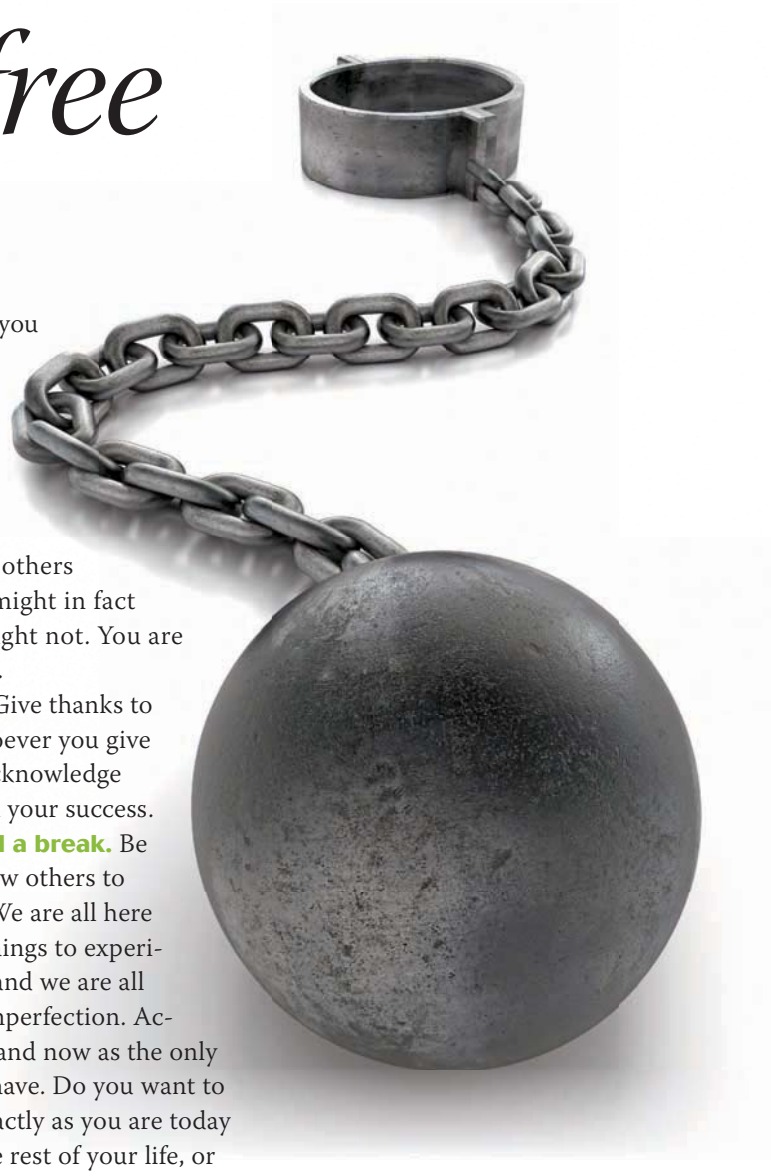
If paid as a dividend from the practice, payments will be taxed more favorably than your salary. The extra dough will retire that credit balance, and eventually the student loan, faster than if you hadn't bought into the practice. You've successfully used the Rule of 72 in your favor.

These strategies prove that you don't need to fear debt and interest. You can harness the most powerful force in the universe instead of being subjugated and strangled by it. dvm360

Dr. Christopher Allen is president of Associates in Veterinary Law PC, which provides legal and consulting services to veterinarians. Call (607) 754-1510 or e-mail info@veterinarylaw.com.

Stuck in a rut?
Here's how to break free

Identify what things are holding you back—and don't let the fear of failure keep you from pursuing your dreams.



I was talking to a friend the other day and he was bemoaning the fact that he felt stuck in a rut in his life. When I asked him why he felt stuck, he said he really didn't know, but he thought his life was becoming mundane. He knew he needed to break out but didn't know how.

I think all of us have at one time or another felt like we were somewhere we didn't want to be. Remember the '70s song "Stuck in the Middle with You" by Stealers Wheel? It became part of the soundtrack for *Reservoir Dogs* nearly 20 years later. Listen to the song, watch the movie and you will hear the desperation that comes along with being stuck in a deep rut.

You know me—that got me to reading. Recently I came across a blog by Amandah Blackwell published on the *Huffington Post* about 10 beliefs that will hold you back in life. Once again, I have learned things I can not only share but also apply to my own life.

How to get unstuck

The primary reason we stay in our ruts is fear—mostly fear of failure. So how do we avoid or at least overcome fear of failure? Here are a few strategies to help you:

Don't expect perfection. We almost never get it right the first time.

Be prepared. Examine your skill sets. Get your arms around what you want. What you have been trained to do may not be the same as what you enjoy doing now.

Stop caring about what other people think. Just because another person would love to be in your position doesn't mean you have to love it.

Stop feeling like you have to please everyone. The only person you can really please is you.

Check your beliefs. Some beliefs can be very limiting—even toxic. These include believing you have to be everything to everyone or believing you have to be liked by everyone. Thinking you must stay in a career or job you don't like can hold you back as well.

Determine the real problem. Is the issue with your work (what you do)? Or is it your job (where you do it)?

Stop believing it's too late to pursue your dreams. Ten years from now you will be 10 years older, whether you're doing what you want or still stuck in a rut.

Believe you deserve happiness at every level

Believe in yourself and what you can do. Be confident and at the same time humble enough to admit when you need input. You may be asking yourself, "What do I do now?" Well, if you can't answer the "what," ask yourself "who." Who can you share with? Who can you talk to? Who can you ask for advice?

While there may not be an instruction manual or road map to guide you, there are many people who can tell you what worked for them. Watch videos, read books, attend seminars and network with other people on a journey of transition.

Notice I said "transition," not "change." Much of what traps us in a rut exists inside us. Sometimes when we address change from an internal perspective, the rut disappears—or at least gets smaller. Here are some ways to do this:

Take the wheel. Stop being a passenger in your own life. Take responsibility for your well-being and break the cycle of blame. Where you are today is solely the result of your choices and actions. Where you will be tomorrow is a result of things you do or don't do today. Your circumstances and your results are your responsibility. Yes, many external factors are beyond your control, but you can change how you feel about them.

Don't fear shortfalls. Let go of what might happen, or should happen or what others will think. You might in fact fail—but you might not. You are not your results.

Be grateful. Give thanks to whatever or whoever you give thanks to, but acknowledge your own role in your success.

Cut the world a break. Be yourself and allow others to be themselves. We are all here with the same things to experience and learn, and we are all perfect in our imperfection. Accept you as you and now as the only time you really have. Do you want to lead your life exactly as you are today every day for the rest of your life, or do you want to reach out and grab the brass ring?

In a 2014 graduation speech at the Marashi University of Management, the speaker stressed the need to focus on the present—the only time that really exists. He admonished new graduates and attendees not to make decisions based on fear disguised as practicality:

"'Oh you can't do that! It isn't realistic! What if it doesn't work out?' This often keeps one in a rut professionally and personally," he said. "You could fail at what you don't want to do, so why not risk failing at doing what you love?"

The speaker? Actor and comedian Jim Carey. **dvm360**

Dr. Michael Paul, @mikepauldvm on Twitter, 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

Chronic ulcerative paradental stomatitis: *When 'kissing' isn't a good thing*

This dental condition, also called *kissing lesions*, can be extremely painful in affected pets and requires immediate and dedicated care.

By Jan Bellows, DVM, DAVDC, DABVP, FAVD

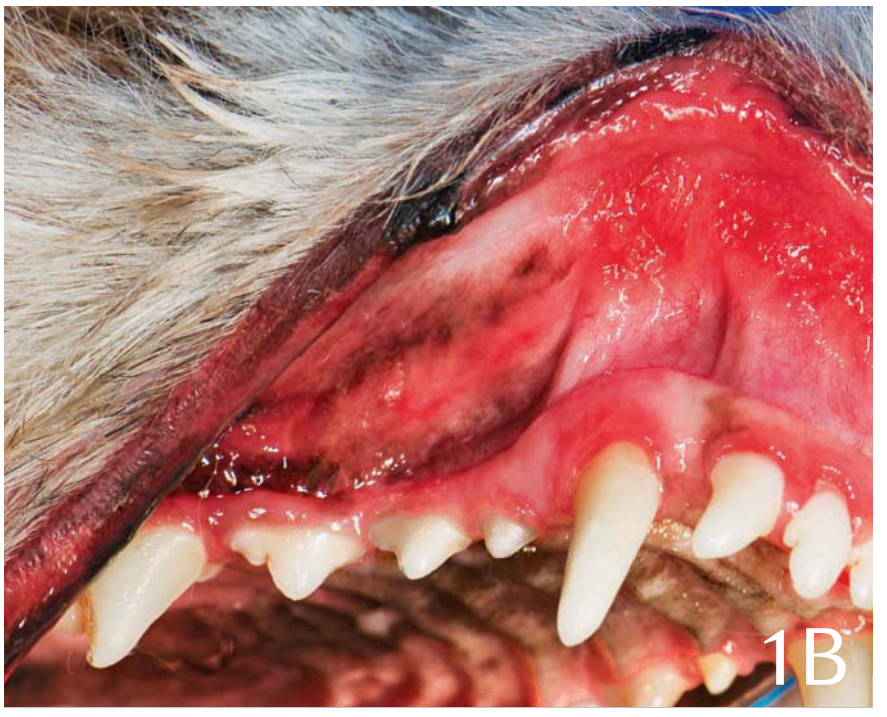
As soon as I walked into the exam room, I knew the patient on the table was in trouble. The odor emanating from the dog's mouth was overwhelming. When queried, the owners said they had barely noticed and had only noted that their dog had stopped eating. Putrid saliva flowed onto the exam table (Figure 1A).

The 14-year-old Maltese cross had an advanced case of contact mucositis with ulceration. The dog's owners had been dealing with it for years. Multiple professional teeth cleaning visits with the dog's primary veterinarian, antibiotics, corticosteroids, a few extractions and even immune modulators met with little success. Lately, the dog had been in so much pain that tooth brushing was out of the question.

What is CUPS?

Chronic ulcerative paradental stomatitis (CUPS), also called *contact mucositis*, *contact mucositis with ulceration* and *kissing lesions*, affects the paradental mucosal tissues that lie next to the teeth. The oral mucosa, palatal mucosa, lining of the buccal pouch and epithelial lining of the tongue are most commonly affected (Figures 1B-1D).

The lesions may present as solitary or multiple discretely circumscribed or diffuse areas of inflammation with or without ulceration (Figures 2A, 2B and 3). The lesions may also present with fresh fibrinous pseudomembranes (Figure 4), pustular pseudomembranes (Figure 5) or chronic pseudomembranes with evidence of hemorrhage and necrosis (Figure 6).



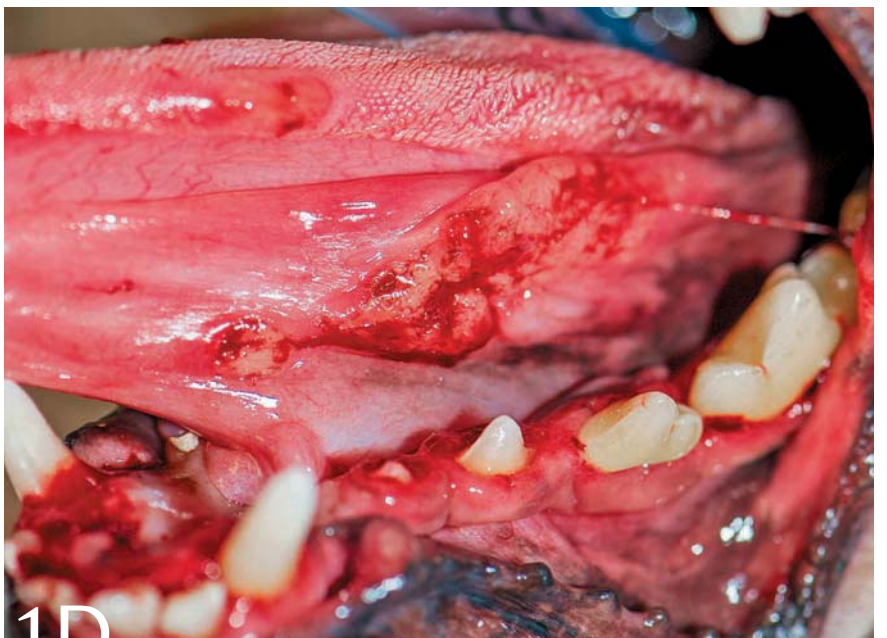
>>>Figure 1A: A patient with thick ropey foamy saliva secondary to contact mucositis and ulceration.
>>>Figure 1B: "Kissing" lesions evident on alveolar mucosa apical to the adjacent teeth in the dog in Figure 1A.

PHOTOS COURTESY OF DR. JAN BELLOWS

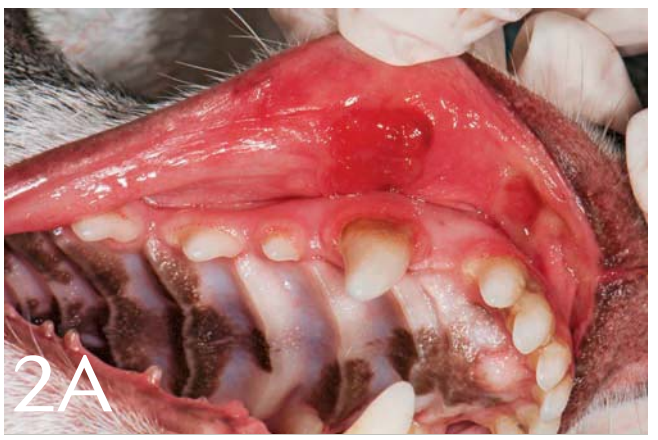
In cases in which the tongue's lateral surfaces are severely eroded, the patient is often in so much discomfort that it stops eating (Figure 7). Occasionally the paradental infection is so marked that the necrotic buccal mucosal damage extends through the skin (Figures 8A-8C).

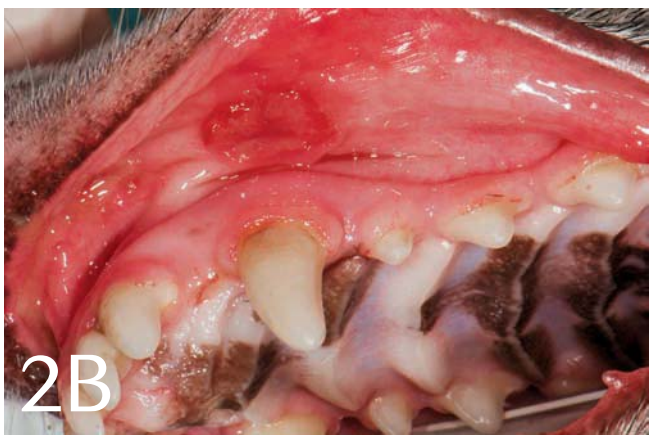
Contact mucositis with ulceration differs from periodontal disease that affects the socket holding the tooth—the cementum, periodontal ligament, alveolar bone and gingiva. Some patients have both contact mucositis *and* periodontal disease (Figure 9).

The specific etiology is unknown. Maltese, Cavalier King Charles spaniels, Labrador retrievers and greyhounds are overrepresented. Affected animals may have a hyperimmune response to the bacteria and proteins in plaque. Other syndromes that may mimic contact ulcerative mucositis include autoimmune diseases such as mucous membrane pemphigoid, bullous pemphigoid, pemphigus vulgaris, epidermolysis bullosa and epitheliotropic T-cell lymphoma. Additionally drug reactions (early toxic epidermal necrosis) and foreign bodies appear similar. Keep in mind that



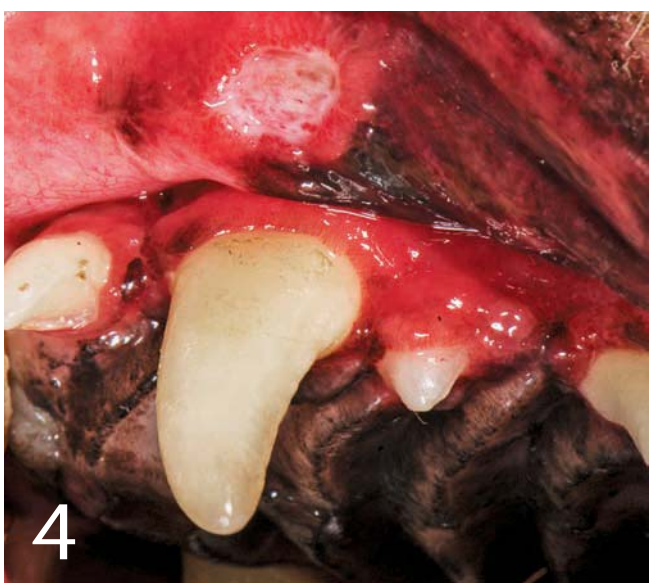
>>>Figure 1C: An inflamed right buccal vestibule caused by plaque on the caudal cheek teeth.
>>>Figure 1D: Epithelial damage of the tongue and unilateral sublingual pyogenic granuloma caused by trauma from the caudal mandibular cheek teeth.





>>>Figures 2A and 2B: Discrete alveolar mucosa "kissing" lesions adjacent to the right and left maxillary canines and incisors with minimal periodontal inflammation, plaque or tartar.

>>>Figure 3: A diffuse ulcerated alveolar mucosa lesion with ulceration secondary to contact with the right maxillary canine.



>>>Figure 4: A fresh pseudomembrane formed over a contact ulcer.

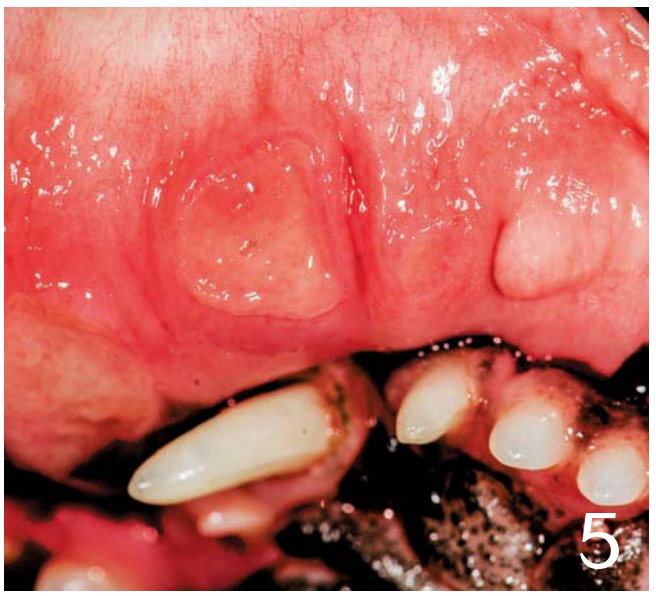
in cases of pemphigus, other mucous membranes including the inner surfaces of the eyelids and the rectum can also be affected.

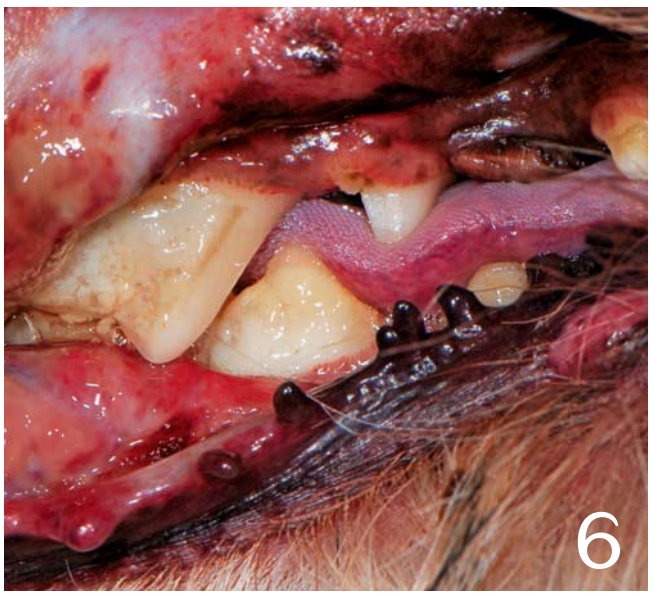
Unfortunately most affected patients are in so much pain they will not allow an oral examination. As part of patient assessment, laboratory tests including organ function profile, thyroid function, urinalysis and lesion biopsy should be performed. Expect elevated protein concentrations due to the chronicity of disease. In patients in which elevated alkaline phosphatase levels are reported, tests to rule out Cushing's disease should also be performed.

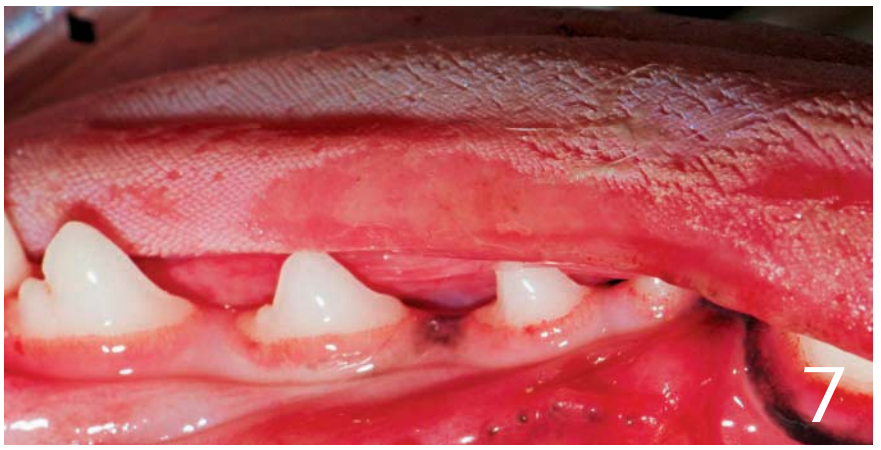
Treatment

The treatment of patients with CUPS lesions involves medical intervention, surgical intervention or a combination of the two.

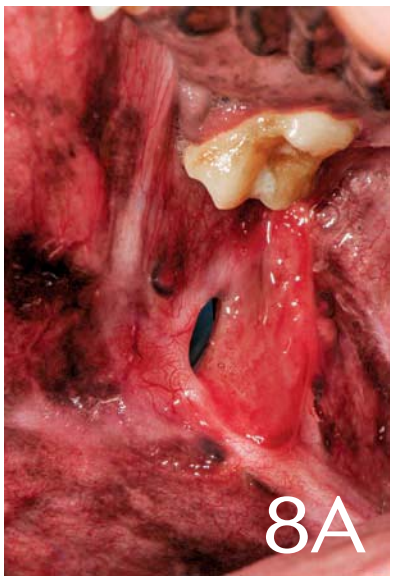
Medical. Affected patients are extremely sensitive to plaque. Even a small amount can initiate the ulcerative inflammatory reaction. Initial care involves dental scaling—both above and below the gum line—irrigation and polishing followed by diagnostic probing

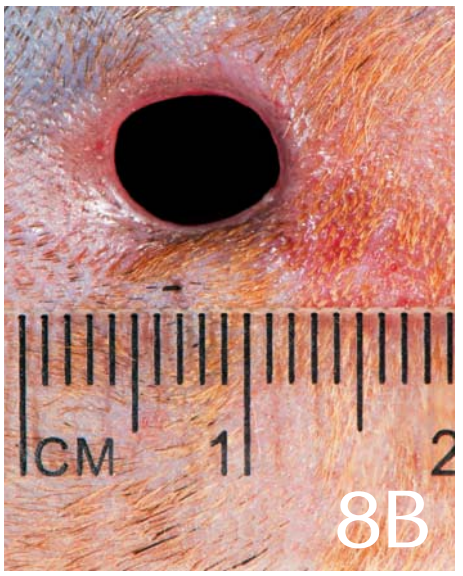






>>>Figure 5: Multiple large contact ulcers in the labial mucosa overlying the right maxillary canine, incisors and premolar.
>>>Figure 6: A chronic necrotic ulcer with hemorrhage overlying the caudal cheek teeth covered with plaque and tartar.
>>>Figure 7: Erosion of the lateral tongue epithelium with normal-appearing mandibular premolar teeth.





>>>Figure 8A: Contact ulceration from the right maxillary second molar causing destruction of all tissues.

>>>Figure 8B: Destruction visible from the facial surface.

and intraoral radiography. Extract teeth with grades 3 and 4 periodontal disease. A dental sealant is recommended to help decrease plaque accumulation.

Antibiotics approved for dental infections are indicated to help treat severe presentations. Pentoxifylline (patient < 7 kg: 100 mg t.i.d.; 7 to 16 kg: 200 mg t.i.d.; > 16 kg: 400 mg t.i.d.) can be prescribed to decrease inflammation. Niacinamide with equal dosages of tetracycline (patient < 20 kg: 250 mg t.i.d.; > 20 kg: 500 mg t.i.d.) may also be helpful. Pain relief medication is also indicated. Pulsed antibiotic therapy (antimicrobials administered the first five days of each month) is not recommended.

The use of corticosteroids to control CUPS is controversial. Home care, including brushing the pet's teeth twice daily, applying a gel or an oral rinse containing zinc and applying plaque prevention gel (OraVet Plaque Prevention Gel—Merial), helps with plaque control and ulcer treatment.

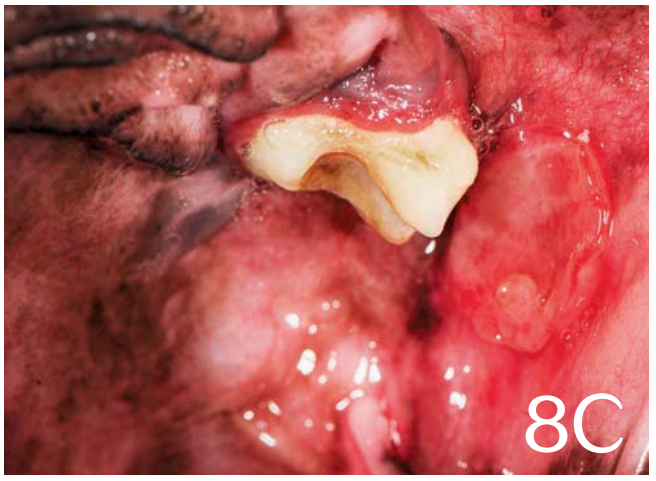
Surgical. Photovaporization with a carbon dioxide laser helps in the treatment of contact mucositis and mucositis with ulcerative lesions

Home care, including brushing the pet's teeth twice daily, applying a gel or an oral rinse containing zinc and applying plaque prevention gel, helps with plaque control and ulcer treatment.

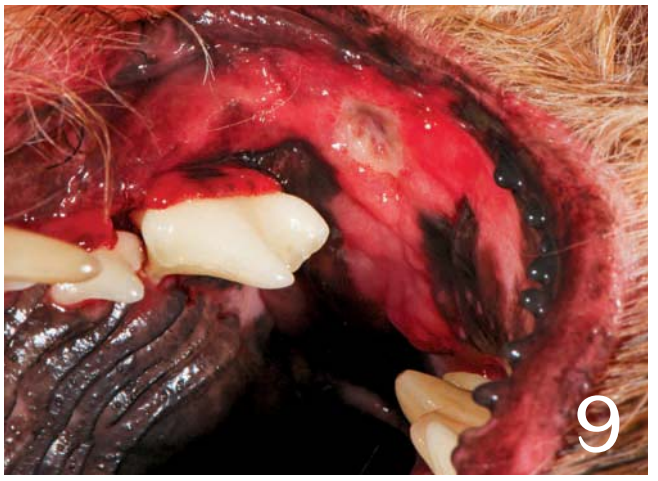
when combined with strict plaque control. The laser should be set between 3 and 6 watts in continuous mode (Figures 10A-10C).

In advanced cases in which the owner cannot provide twice-daily plaque control or if such care does not meet with clinical success, removal of the teeth adjacent to the ulcerated areas (Figures 11A an 11B)—and in some cases all the teeth, as in the case of the dog discussed at the beginning of this article (Figure 12)—results in rapid elimination of all infection and pain. This may seem over the top, but giving your client a "new dog" that smells great, eats well and can truly enjoy life is worth it. dvm360

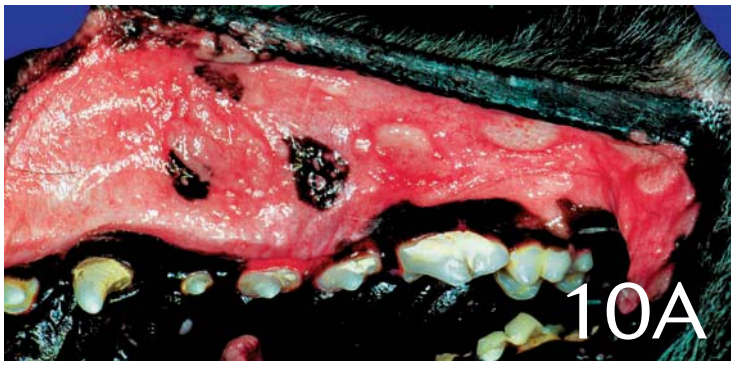
Dr. Jan Bellows owns All Pets Dental in Weston, Florida. He is a diplomate of the American Veterinary Dental College and the American Board of Veterinary Practitioners. He can be reached at (954) 349-5800; email: dentalvet@aol.com.

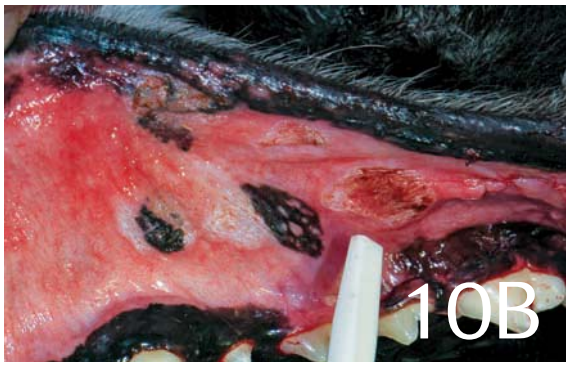


>>>Figure 8C: A large contact ulcer on the contralateral side.

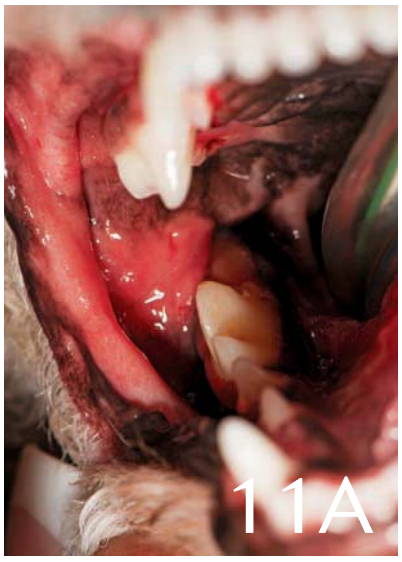


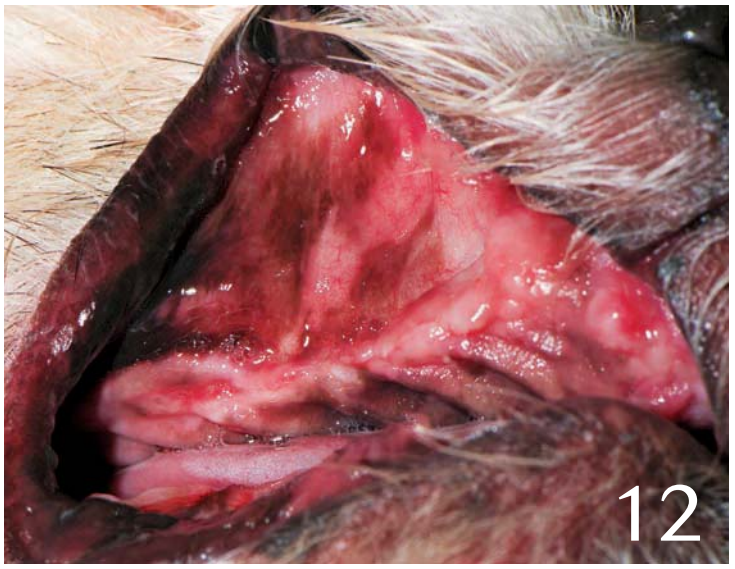
>>>Figure 9: A chronic ulcer and pseudomembrane in the buccal mucosa and advanced periodontal disease affecting the left maxillary fourth premolar.





>>>Figure 10A: Multiple contact mucositis kissing lesions affecting the left maxillary alveolar mucosa in an 11-year-old Labrador.
>>>Figure 10B: Ulcer vaporization of the lesions of the patient in Figure 10A using a carbon dioxide laser.
>>>Figure 10C: Resolution of lesions after laser treatment and strict plaque control.





>>>Figure 11A: Right causal buccal pouch inflammation secondary to contact mucositis.
>>>Figure 11B: Resolution of inflammation after selective extraction of the caudal cheek teeth.
>>>Figure 12: Resolution of the inflammation in the 14-year-old dog from Figures 1A-1D one week after full-mouth extraction.

6 tips for clients with backyard chickens

These gentle birds are a great way to start with avian species. *By Kristi Reimer*

Chickens make wonderful avian patients, says Tracey Ritzman, DVM, DABVP (avian and exotic mammals), a practitioner in Michigan who spoke at CVC San Diego in December 2014. In fact, veterinarians who want to start seeing more birds could do worse than to start with chickens.

"Chickens are gentle," Ritzman told a room full of veterinarians. "They're not aggressive, they'll sit still on the table if they have good footing, and they're easier to handle than other birds, such as parrots."

Chances are that with the urban poultry trend continuing to climb, you probably already have a number of clients who have these birds roaming their yards. Here are some basic tips you can offer them, even if you end up referring these patients to an avian veterinarian nearby.

1 Chickens need to forage

In addition to providing needed nutrients, foraging is normal behavior for chickens. If they can't engage in this behavior, "they get a little wacky," Ritzman says. Owners can allow chickens to forage by using moveable housing that can be placed in different locations around the yard.

2 It's normal for egg production to drop

Clients may mention that their hens aren't laying as many eggs as they did initially, and they may think this indicates a health problem. Barring abnormal exam findings, you can reassure these owners that it's normal for a hen's egg laying to decrease as her age increases.

3 Chicks will tell you if they're comfortable

Young chicks under a heat lamp have very specific temperature requirements, Ritzman says, and they'll react to incorrect heat levels in specific ways. If they're too warm, they'll disperse around the periphery of their enclosure, as far away from the lamp as they can get. If they're too cold, they'll huddle underneath the lamp in a clump. And if the temperature is just right, they'll be distributed evenly throughout the enclosure. Owners who notice anything other than this even dispersal can adjust the heat level accordingly.

4 A mister helps keep chickens cool in high temperatures

Ritzman told her audience that chickens can experience heat distress and even death at temperatures above 95 degrees F. One CVC attendee, a veterinarian from Tucson, Arizona, told fellow veterinraians that a mister is a great way to help chickens keep cool in high temperatures. Covering food and bedding with a metal roof can help prevent moisture-related fungal growth that can be harmful to the birds, he added.

5 Salmonellosis is a serious concern

U.S. outbreaks of salmonellosis in the fall of 2014 were linked to backyard poultry flocks whose birds all originated with the same mail order hatchery, Ritzman said. The disease can cause serious disease and death, and clients need to take precautions. It's not recommended that children under the age of 5, along with elderly or immunocompromised people, handle chicks or raw eggs, Ritzman said. The U.S. Centers for Disease Control has created educational resources for backyard poultry owners.

6 Diet affects stinkiness of manure

A veterinarian in Ritzman's CVC audience—one who owned a few backyard chickens himself—mentioned that you can "be a better neighbor" by feeding vegetarian-based feed (which is formulated to meet birds' dietary protein needs as well as animal-based feed). It's far less stinky, he says. **dvm360**

GETTY IMAGES

The 10 most-read clinical articles of 2014

Our sister magazine, *Veterinary Medicine*, has compiled the most-read clinical articles to show what topics are resonating with readers. Using dvm360.com analytics, we compiled 2014's top posts. Visit **dvm360.com/top10clinical** for links to the articles.

1. Chronic vomiting in cats: Pictorial pointers for diagnosis

This photo gallery provides resources on what to consider when treating chronic vomiting, how to collect biopsy samples, and diagnostic guidelines.

2. The physiologic effects of fear

Research suggests patients' fear is an underestimated problem in veterinary medicine. Scared animals are less likely to show signs of illness, their stress responses taint sample collections, and their long-term mental health can suffer.

3. Wound repair techniques: Single pedicle advancement flaps

Patients with rectangular-shaped skin injuries can be treated with this technique. This photo gallery shows how skin flaps can be mobilized by undermining and advancing into the wound without altering the pedicle plane.

4. Using clonidine and trazodone for anxiety-based behavior disorders in dogs

One anti-anxiety medication might not be enough for some behavior patients. Clonidine can address such issues as noise phobias and separation anxiety, and trazodone can be effective with general anxiety disorders. Side effects and dosages are discussed.

5. How to perform a scrotal urethrostomy

The procedure treats recurrent urethral blockage by diverting urine flow.

6. Gossypiboma-induced abdominal fibrosarcoma in a German shepherd

A case study demonstrates why accounting for sponges during surgery can be a matter of life or death.

7. Those frustrating vomiting cats!

Two veterinarians discuss how they researched chronic vomiting in felines and discovered the root cause is often small bowel disease.

8. Mind Over Miller: A cartoonist's conflict

Dr. Robert Miller shares a story about famed author James Herriot insisting on writing an introduction for his book to persuade the publisher to include some of Dr. Miller's cartoons. Miller's work is featured in a photo gallery.

9. Skills Laboratory: Eyelid laceration repair

The photo gallery details the proper surgery response to eyelid trauma.

10. Clinical Rounds: Transitional cell carcinoma

Explore the case of a senior Chihuahua with this form of neoplasia from many different viewpoints. Transitional cell carcinoma is the most common urinary tract cancer in dogs, and the article explores the perspectives of clinical and anatomic pathology, radiology, medical, surgical, and medical and radiation oncology. dvm360

>>> Dr. Fong Wong, right, a prosthodontic specialist and faculty member in the University of Florida's College of Dentistry, collaborated with Dr. Amy Stone, center, from the UF College of Veterinary Medicine, to affix a metal prosthesis to the inside of Darryl's mouth.

Metal prosthesis implanted in cat's mouth

Veterinary, human specialists at University of Florida resolve oral palate problem.

A Siamese-mix cat's ability to eat was restored after a team of veterinary and human dentistry specialists closed a hole between his oral and nasal cavities.

After being unable to eat for more than a year, Darryl received a metal prosthesis in his mouth. The palate injury surgery, which was performed at the University of Florida Small Animal Hospital last fall, attached the device to the roof of Darryl's mouth.

Fong Wong, DDS, an associate professor of prosthodontics and maxillofacial prosthetics in UF's College of Dentistry, performed the procedure with Amy Stone, DVM, PhD, a clinical assistant professor in UF's College of Veterinary Medicine.

Wong performs the procedure in human patients suffering from cleft palates or following their oral cancer surgeries.

The patient's unique situation presented challenges, Stone says.

"This was a different approach than has ever been done before," she says in a university release. "We have not had an exact procedure for palate issues that is entirely successful for every species, and Darryl's problem was one likely caused, or at least exacerbated, by injury."

Darryl's surgery reversed a standard trend.

"Usually medical procedures are first tried in animals, and then, when successful, used in human patients," Wong says. "In this case, it was the animal that benefited from a procedure that is routine in humans but has not been part of routine veterinary medicine."

Darryl was rescued from Alachua County Animal Services, where he had been slated for euthanasia. Despite the gaping hole in his hard palate, his friendly nature made him a staff favorite, says Julie Levy, DVM, PhD, a professor of shelter medicine at UF who fostered Darryl and later adopted him.

"Despite struggling to eat and being extremely messy with his food, he was always affectionate and craved attention from staff and volunteers," Levy says in the release.

But his condition made adoption impossible, so Darryl became a long-term resident of the humane society. Meanwhile, Levy sought solutions to his health issue. The cat was transferred to the Maddie's Shelter Medicine Program at UF.

Katherine Polak, DVM, a former UF shelter medicine resident, examined him. Nick Bacon, VetMB, an associate professor of small animal oncology, biopsied an oral lesion to rule out cancer. A feeding tube helped Darryl gain weight without suffering.

Levy took Darryl into her home as her foster pet in order to provide the intensive care he needed. Soon after, Levy contacted UF's College of Dentistry seeking assistance, Wong got involved and proposed a prosthodontic solution. She made a cast of the cat's mouth and built a custom acrylic prosthesis, and it was sutured to cover the hole.

The surgery was a success. Darryl's feeding tube was removed two days later, and he was able to eat normally for the first time in more than a year.

"He is doing great," Levy says in the release. "Many thanks to the entire team who pitched in to help this lovely cat." **dvm360**

PHOTO BY MINDY CHERISSE MILLER, COURTESY OF UNIVERSITY OF FLORIDA

EQUINE | Orthopedics

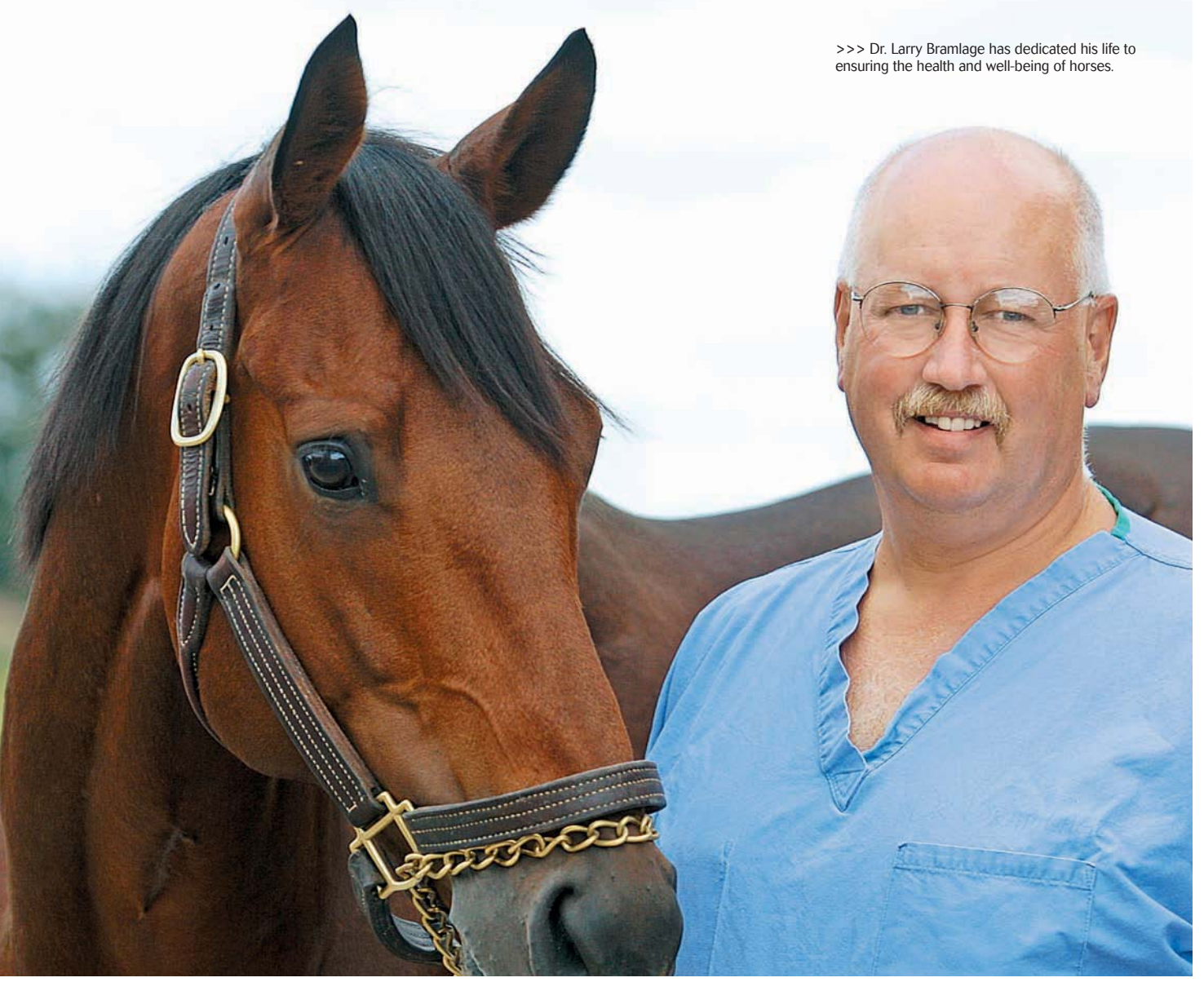
Dr. Larry Bramlage: A career dedicated to *healing horses*

This renowned orthopedic surgeon says his success has been due to a lot of luck and stumbling into the right mentors along the way.

By Ed Kane, PhD

Growing up in Frankfort, Kansas, Larry Bramlage, DVM, MS, DACVS, thought he was destined to become a bovine veterinarian. His father worked for a cattle company and ran a sale barn. "That was the only veterinary medicine that I knew," says Bramlage, now an orthopedic surgeon and a partner at Rood & Riddle Equine Hospital in Lexington, Kentucky.

His father's veterinarian was

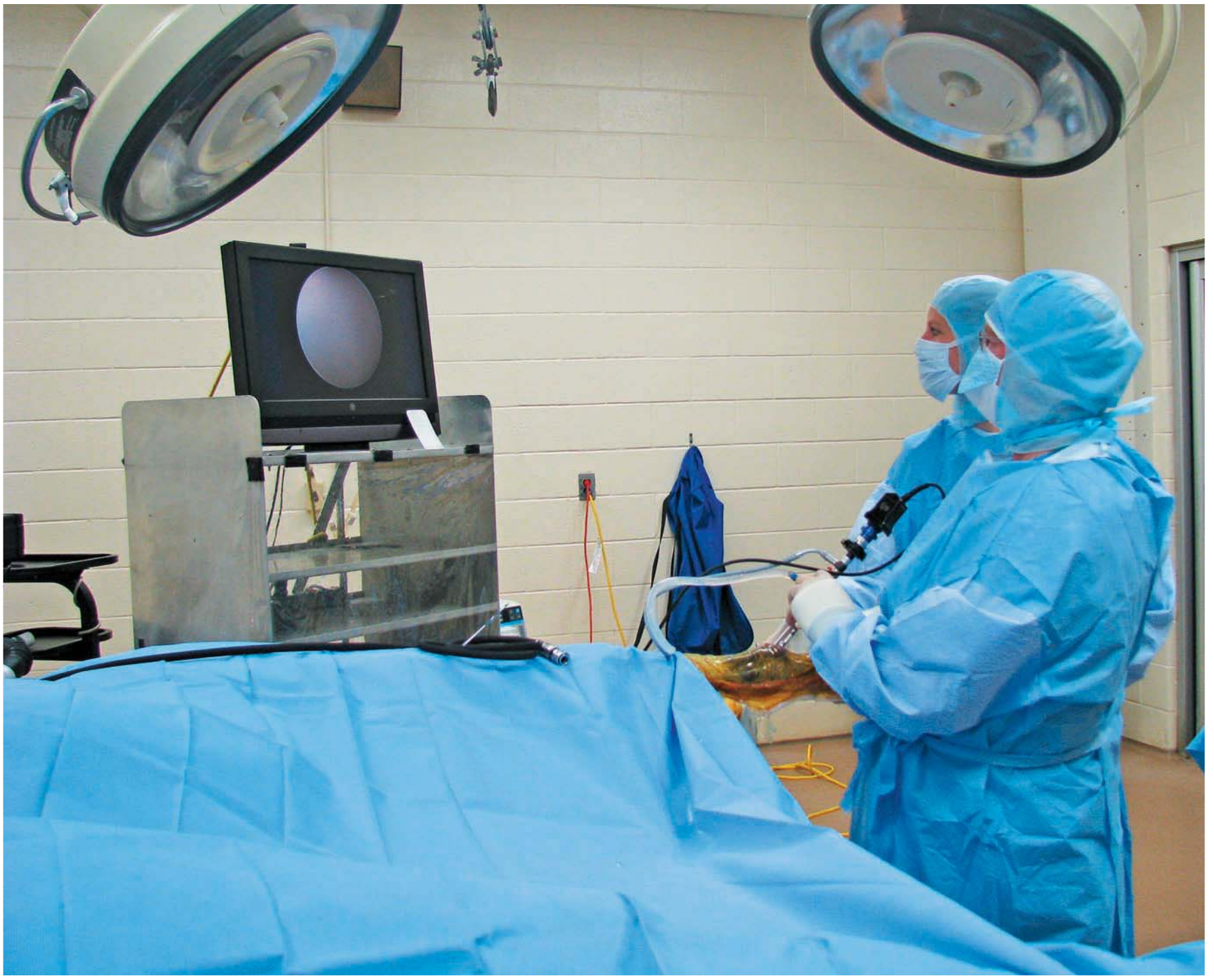


>>> Dr. Larry Bramlage has dedicated his life to ensuring the health and well-being of horses.

PHOTO COURTESY OF THE AMERICAN ASSOCIATION OF EQUINE PRACTITIONERS

ORTHOPEDICS **E5**
Recent advances in laminitis

dvm360.com/equine
Equine veterinary news, medicine and business



>>> Bramlage performs surgery on a horse at Rood & Riddle Equine Hospital, where he is a partner.

Bramlage's first professional influence. What's more, this doctor's son was Bramlage's high school classmate and played beside him in basketball, baseball and football. At the end of Bramlage's junior year in high school, the guidance counselor called him in to ask him what his plans were for after graduation. Bramlage didn't have any. The counselor told him to think about it over the weekend and come in to discuss it the following week.

It just so happened that Bramlage was helping his dad work cattle over that weekend. The veterinarian, Dr. Keith Beeman, came out to do some work and Bramlage assisted him as he always did. He reported back to his guidance counselor that next Monday and stated, "I want to be a veterinarian." The counselor, an influential and diligent mentor, replied, "The school you'll go to is Kansas State University (KSU)—you'll have preferential admission." He advised Bramlage on how to apply and receive financial aid. After taking the advice, Bramlage went off to veterinary school.

From bovine to equine

While at KSU, Bramlage met another key mentor, Dr. Gene Schneider. "He took an interest in me and was the first person who took me to the racetrack—to Fonner Park in Grand Island, Nebraska," Bramlage recalls. But instead of going to the races, they spent the morning watching horses training.

"I went there in awe of the thoroughbreds, though I'd been around cattle horses all my life," Bramlage says. "Watching the thoroughbreds train, I thought I'd never seen anything like it. I fell in love to what they were doing and how they were doing it."

After Bramlage earned his DVM from KSU in 1975, he did an internship at Colorado State University (spending six months with Dr. O.R. Adams, author of the first *Lameness in Horses* text) and then ended up in a residency at The Ohio State University (OSU) College of Veterinary Medicine with Dr. Al Gabel. "Dr. Gabel was probably as influential about life as he was about veterinary medicine," Bramlage says. "He gave his residents lots of encouragement and guidance."

Bramlage stayed on at the OSU College of Veterinary Medicine as

PHOTO COURTESY OF ROOD & RIDDLE

a young faculty member. While at OSU, he developed a strong interest in plating bones—a new technique at the time. Some work had been done by Dr. Jacques Jenny at the University of Pennsylvania (who had established the specialty of orthopedic surgery in the horse) and Dr. Bruce Hohn, an orthopedic surgeon at OSU who in 1976 performed the first total hip replacement in a dog. Dr. Hohn taught Bramlage about the new bone plating technology, a procedure commonly done by the Swiss at the time. "That became my hobby," Bramlage says.

Groundbreaking procedures

Eventually Bramlage developed a surgical procedure called *fetlock arthrodesis*, used to treat a catastrophic fetlock injury that used to cause death in most affected horses due to contralateral laminitis. "But once we could fuse the fetlocks painlessly, we saved the majority of those horses, as we do now," Bramlage says.

The fetlock arthrodesis procedure has remained the gold standard for that type of fetlock injury. "That indirectly led me to my friendship with Dr. Robert Copelan, as he too was interested in the procedure, eventually referring me to several horses," Bramlage recounts. "He is and remains a good friend and a strong mentor for me. I learned a lot from him, about the racing business, and about integrity, how you deal with people."

Bramlage says that people in his era were fortunate, coming along in a golden era of veterinary medicine. For one thing, practical general anesthesia had just come of age. "Before the time I was doing the residency, it was not very easy to anesthetize a horse for a couple of hours and have it recover," he says. "But about that time the anesthesiologists became very competent in doing it in horses, and that opened up lots of avenues for me."

>>> Bramlage has pioneered many new surgical techniques in the realm of equine orthopedics to get horses back in the race.

In 1982 Bramlage was doing some work for a woman whose husband, Frank Noyes, was a human physician conducting research at the Air Force base in Dayton, Ohio. Bramlage got to know Noyes through his wife, who owned hunters with lameness problems. Bramlage and Noyes began discussing various injuries and treatments, and as Noyes was hosting one of the first human arthoscopy courses in Cincinnati, he invited Bramlage to attend. "That's how I got started in arthroscopy," Bramlage says. "We came along just as the technology made it practical to operate on horses' joints with arthroscopy, or to plate horses' bones. We had a lot of opportunities just by coincidence."

In 1983, Bramlage moved from Ohio to New Jersey to open a private practice for a year (Sterlingbrook Equine Center in Pittstown), came back to OSU and began consulting in Lexington, Kentucky. Bramlage eventually moved to Lexington, which allowed him to spend more time with his children, coach their baseball teams and eventually practice at Rood & Riddle.

"From there on I've narrowed my career more and more," Bramlage says. "When I began, veterinarians did all kinds of surgery—abdominal surgery, urogenital surgery, throat surgery—we did everything. But Dr. Gabel at Ohio State was one of the first people in the country who said, 'You guys need to separate and get really good at one aspect of what you do.' So we split the surgeons at Ohio State into general surgery and orthopedic surgery."

Bramlage's career has reflected his mentor's advice. He went from doing every kind of surgery to doing mostly orthopedic surgery to only doing orthopedic surgery in racehorses, including lameness exams, a portion of orthopedic surgery.

A couple of fortuitous surgeries

"The first really good animal I fused was a horse named Noble Dancer," Bramlage says. "He was probably the 10th horse I'd fused." Dr. Bill Reed

A distinguished career

Bramlage is a diplomate of the American College of Veterinary Surgeons and a past regent and president of American College of Veterinary Surgeons as well as a past member of the board of directors and president of the AAEP. Bramlage is also a member of the American Veterinary Medical Association, Kansas Veterinary Medical Association and Kentucky Veterinary Medicine Association.

Through the years, Bramlage's orthopedic expertise has provided much to equine practice, and many fortunate horses have benefited from his skilled, gentle hands, which has not gone unnoticed:

- He was recipient of a Gold Medal for Contributions to Thoroughbred Racing from the Jockey Club of America in 1994.
- He won a Special Award of Merit from the British Equine Veterinary Association in 2000.
- In 2001, Dr. Bramlage was recognized by Kansas State University as an Alumni Fellow for the College of Veterinary Medicine.
- He earned a distinguished service award from the AAEP in 2005.
- He received the Joe Palmer Award from the Turf Writers of America for service to Thoroughbred racing in 2007.
- In 2010, the American College of Veterinary Surgeons presented him with its Legends Award for contributions to equine orthopedic surgery.
- In September 2014, he was one of three veterinarians honored by the Thoroughbred Club of America at its 83rd testimonial dinner.
- In 2014, he received the Alumni Recognition Award from Kansas State University as well as a second Distinguished Service Award from the AAEP.

PHOTO COURTESY OF ROOD & RIDDLE

called Bramlage from New York to tell him that trainer Tommy Kelly had a nice horse that just ruptured his suspensory apparatus. Reed had attended a course where Bramlage described the fusing technique and said he wanted to try it on Noble Dancer. "We did the procedure on him, who at the time was just short of $1 million in earnings, a huge amount in 1978! We fused him, and he became a stallion," says Bramlage.

Noble Dancer went on to sire some magnificent stakes winners: Explosive Dancer, Noble Fury, Island Sun, Noble Cookie, Norwegian Dancer and Noble Ringer are just a few of his outstanding offspring.

Bramlage says his favorite case, and one that provided another landmark in his career, was Personal Ensign. He used internal fixation to fix a P1 fracture, putting five screws in the horse's right hind pastern. "She was important not only to me, but also to the profession," says Bramlage. "She was really the first prominent horse that showed that not only could you save those horses for breeding if you did a good job with internal fixation but some of them then could come back and perform well." Bramlage says that in most horses internal fixation surgery is now fairly routine.

"Personal Ensign was such a good horse—an amazing athlete," says Bramlage. "She happened to be such a talented athlete that she made the internal fixation famous."

AAEP On-Call Veterinarian

In 1990, Go For Wand had her major accident in the Breeders' Cup Distaff at Belmont Park and was fatally injured. A group of concerned racing industry leaders decided, "We have to do something different," as the accident was being shown over and over again on TV. Gary Carpenter, executive director of AAEP at the time, developed the idea of having a media-trained AAEP member available to the networks, and, with the support of others in the industry, the On-Call program was started. "That was an epiphany of good thinking," Bramlage says.

"It's really a combination of stumbling into exactly the right mentors and a lot of luck because a lot of technology made it possible for people of my generation to do what we do."

—Larry Bramlage, DVM, MS, DACVS

The AAEP hired two media trainers, Joan McGrath and Myrna Pederson, to coach a group of veterinarians for their new roles.

The first time at the Breeders' Cup, the AAEP sent seven veterinarians each to do a different race. Television executives "hated it," Bramlage says, because there was no continuity and they didn't know the veterinarians. So the program was changed.

In 1991, Dr. Bramlage did his first solo AAEP On-Call assignment at the Breeders' Cup at Churchill Downs doing all seven races. That year, Filago broke down in the Breeders' Cup Turf turning for home. "They interviewed the jockey, who incorrectly noted the horse 'had broken his leg clean off,' which didn't make for very good television," Bramlage says. So Curt Gowdy Jr., the ABC producer, said, "Try the vet."

"I did what I was taught—to describe the injury and bridge forward to describing what's happening next to care for the horse instead of dwelling on the injury," Bramlage says. "One of the fortuitous things was that the injury was what I did—I plated bones, and it was easy for me to talk about that stuff. In fact, I subsequently did the fetlock arthrodesis on Filago and he became a stallion in Argentina."

After this success, ABC asked him to be the On-Call Veterinarian for both the Breeders' Cup and the Kentucky Derby. Bramlage was perfect for the job—his gentle demeanor linked with his equine expertise made for an excellent rapport with the television-viewing public. In future years he was joined at the Breeders' Cup by Wayne McIlwraith, BSVc, DACVS, of Colorado State University College of Veterinary Medicine.

As of 2015, the AAEP is adding new veterinarians to the program, and Bramlage and McIlwraith are stepping down. They'll be sorely missed, and their tenure as AAEP On-Call veterinarians will be hard to follow—especially their careful assessment in cases such as Barbaro's breakdown in the 2006 Preakness and Eight Belles' injury in the 2008 Kentucky Derby.

Bramlage looks back on his career humbly. "It's really a combination of stumbling into exactly the right mentors and a lot of luck because a lot of technology made it possible for people of my generation to do what we do," he says. **dvm360**

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

Recent advances in laminitis

In addition to promising treatment options, veterinary equine researchers are working to identify horses at risk for laminitis before the debilitating disease sets in. *By Sallie S. Hyman, DVM, DACVIM, CVA*

GETTY IMAGES/WESTEND61

Laminitis has been around for millions of years. However, only in the last century (and primarily over the past 25 years) have we dramatically expanded our understanding of the pathophysiology, potential treatment protocols and prevention methods for this equine disease. Our ability to treat and prevent laminitis is still in its infancy, compared with the millions of years it has been afflicting horses.

Laminitis classification

We now understand that there are four main forms of laminitis: endocrinopathic, sepsis-induced or systemic inflammatory response syndrome (SIRS)-associated laminitis, support- or contralateral-limb laminitis and traumatic laminitis.

In endocrinopathic laminitis, hyperinsulinemia and elevated ACTH concentrations (Cushing's disease) are the main triggers. Risk factors include obese horses, those with pituitary pars intermedia dysfunction and those with equine metabolic syndrome (EMS).

Endotoxemia or sepsis may cause sepsis-induced laminitis, which involves increased levels of inflammatory mediators (cytokines) such as chemokines and tissue necrosis factor (TNF),

among others. Matrix metalloproteinases can become up-regulated with the inflammatory cascade and play a role in the breakdown of the basement membrane and separation of the epidermal and dermal lamellar tissue.

Support limb laminitis may be a result of altered blood flow in the foot because of a decrease of loading and unloading. Glucose metabolism may also be affected during overloading of the support limb, which can contribute to lamellar damage.

Disease progression

Each form of laminitis has its own unique triggers, but at some point in the disease progression, the results are the same—an inflamed and damaged lamina (see "Anatomy of laminitis" on page E8). In recent years, we've acquired a better understanding of disease progression. Laminitis is divided into four phases: developmental, acute, subacute and chronic.

Developmental phase. This phase is the period between the initial incident or exposure to the causative agent up to the onset of clinical signs (which may include lameness, increase in digital pulses with or without fever). It generally lasts 24 to 60 hours.

Acute phase. This phase is defined by the onset of clinical signs, including bounding digital pulses, lameness, heat and possible response to hoof testing. If the horse doesn't experience mechanical failure of the foot, the acute phase is over within 72 hours of the onset of clinical signs and is followed by the subacute or chronic phase.

Subacute phase. This phase occurs if there is minimal damage to the lamellae and no radiographic evidence of rotation or sinking of the third phalanx (P3). This is an important time to prevent disease recurrence and to heal the foot. Clinical signs that were seen in the acute phase will resolve in the subacute phase, and the horse will become sound with healing. This phase can last up to several months.

Chronic phase. This phase is initiated if lamellar damage is not controlled and rotation or distal displacement (sinking) of P3 occurs. Chronic laminitis can cause coffin bone remodeling and decreased sole concavity (dropped sole). Development of a lamellar wedge (in other words, disorganized hypertrophied lamella or "scar horn") can also result. This will cause an improper interdigitation of the lamellae between the coffin bone and hoof capsule. There can also be damage to the solar dermis, preventing growth.

Prevention and treatment

Despite our new and better understanding of laminitis pathophysiology, treatment continues to pose a challenge. Ideally, veterinarians would be able to identify horses at risk for developing laminitis and better manage them through diet, exercise and medications (for example, pergolide for Cushing's disease, metformin for EMS) so they never get to the developmental stage of laminitis, says James Orsini, DVM, DACVS, associate professor of surgery and director of the Laminitis Institute at the University of Pennsylvania's New Bolton Center.

Orsini and researchers at the New Bolton Center are looking at improved ways to identify the at-risk horse, using epidemiology studies before the developmental phase sets in and biomarkers during the developmental phase. Their goal is to develop a stall-side test.

Once a horse develops laminitis, there are several newer treatment modalities to address the pain and aid in healing.

Cryotherapy. For horses with sepsis or SIRS, initiating cryotherapy at the start of the illness can be beneficial. How and when the veterinarian institutes cryotherapy is critical to its success. At the University of Pennsylvania, Orsini and Andrew Van Eps, BVSc, PhD, MACVSc, DACVIM, studied the best methods for adequately cooling the feet of at-risk horses. It's generally accepted that cold therapy should be continuous for 48 to 72 hours, during the entire developmental phase and for another 24 hours beyond the end of clinical signs of the primary disease. It's important to include the foot, pastern, fetlock and distal cannon region in the cold therapy for the best results and to maintain intimate cold contact with the limb to achieve therapeutic temperature ranges.

The suggested range for therapy is from 41 to 50 F (5 to 10 C). To achieve intimate contact, crushed ice is preferable to ice cubes. Ice wraps were not suitable because of their size and the air space created between the wrap and the leg. Dry cold therapy provided by a Game Ready Equine system (CoolSystems Inc.) provided the most intimate contact and also provided intermittent pressure that may aid in blood and lymphatic flow. Treatment should continue 24 hours beyond resolution of the primary disease. New studies are demonstrating the benefit of cryotherapy in the early acute phase.

Pain management. Pain management has improved despite the fact that phenylbutazone and flunixin meglumine are still the primary NSAIDS in use. Orsini says that the administration of newer cyclooxygenase-2 (COX-2) inhibitors, such as firocoxib (Equioxx—Merial), make better sense and seem particularly useful in many of the chronic laminitis cases.

Each form of laminitis has its own unique triggers, but at some point in the disease progression, the results are the same—an inflamed and damaged lamina.

Mechanical support. Methods for mechanical support have improved in recent years, and all are designed to relieve forces on the laminar tissue, unload the sole corium (especially at the toe) and move the break-over back to improve comfort and stimulate sole growth. These include roller shoes, synthetic shock-absorbing shoes that reduce vibration and glue-on shoes. Pour-in pad products or dental impression material can also provide sole support. Soft-Ride (Soft-Rider Inc.) boots are another option.

To provide mechanical support and stability that allow the foot to grow, Scott Morrison, DVM, of Rood and Riddle Equine Hospital in Lexington, Kentucky, says that using a deep digital flexor tendon (DDFT) tenotomy combined with derotational shoeing can help many cases. "A normal horse is a toe loader. With rotation of P3, you get pressure on the sole corium that prevents it from growing," says Morrison. "If you cut the DDFT, you move

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the load back. Once you shoe the foot to get the coffin bone parallel to the ground, you have relieved the pressure, and the sole corium will grow."

Bisphosphonates. Both Orsini and Morrison agree that bone disease of P3 is occurring earlier in the disease process than once thought and before it is radiographically apparent. Inflammation of P3 leads to bone loss. Data are still lacking, but science suggests that bisphosphonate drugs such as Tildren (Ceva) and Osphos (Dechra) may be beneficial. By decreasing ostoeclastic activity, the drugs can help stop bone pain, damage and loss.

Stem cell therapy. Also promising, stem cells are thought to help in the repair phase after rotation, and Morrison thinks they can influence healing in the lamellar zone. Treatment is via regional limb perfusion. As the lamellae begin to heal, the process often occurs in an unorganized and a hypertrophied manner. This can result in a lamellar wedge—a thick, rubbery unstable mass of tissue that prevents proper attachment of the coffin bone to the hoof capsule.

The critical period of lamellar wedge formation appears to be 60 days after rotation, so the critical period for stem cell therapy would be before the 60-day mark. Once the lamellar wedge forms, stem cell therapy does not appear to change or improve this tissue. "Cases that are treated with stem cells early after rotation radiographically heal back tighter," Morrison says. Stem cells are an exciting adjunctive therapy, but differentiation of stem cells would be an improvement, he adds. A cell that is more specific and effective for laminar tissue could improve outcomes.

Conclusion

When it comes to laminitis therapies, progress is slow, says Orsini. Future research will include exploring better ways to deliver matrix metalloproteinase inhibitors more cost effectively as a potential treatment for sepsis-induced laminitis, as well as exploring the role of stem cells and other regenerative therapies. **dvm360**

Dr. Sallie S. Hyman is an equine veterinarian and a veterinary writer in Purcellville, Virginia.

GETTY IMAGES/SACHA BLOOR

Anatomy of laminitis

The equine foot is comprised of specialized anatomical and biomechanical elements that allow for absorption and transmission of great weight-bearing forces as the horse ambulates.

The coffin bone (distal phalanx, P3) is suspended in the hoof by a suspensory apparatus, the lamellae attaching to the inner hoof wall, with the deep digital flexor tendon (DDFT) taking up tension from the ventral aspect of the coffin bone. The lamellae are villi-like structures that functionally attach the hoof capsule to the third phalanx (P3). There are about 550 to 600 primary sensitive, or dermal, lamellae originating from the laminar corium, which is contiguous with the periosteum covering the parietal surface of P3. These interdigitate with the insensitive (epidermal), or horny, lamellae of the stratum internum, the deepest layer of the hoof wall. Each of these primary laminae contains about 150 to 200 secondary lamellae, increasing the functional surface area and overall strength of the laminar junction.

The coffin bone acts as a shock absorber and transfers the weight-bearing forces from the hoof wall to the lamellae up to leg's skeletal system. The hoof wall itself also provides shock absorption based on the arrangement of tubules. The tubules are denser on the outside of the hoof and are less dense toward P3. The digital cushion and frog help to attenuate the loads experienced by the hoof. The digital cushion is a mass of flexible material that contributes to the formation of the heels. This structure is one of the primary shock absorbers of the foot. The frog, composed of highly elastic tissue, sits exterior to the digital cushion and is the part of the foot that makes contact with the ground first. At a canter, the frog contacts the ground, assisting in load dissipation. The wedge shape of the frog allows loads to be transferred to the bars and caudal hoof wall. This is then transmitted to the sole and digital cushion.

When the foot is placed on the ground, blood is forced from the foot to the leg by the increase in pressure and by the change in shape of the digital cushion and the frog. The pressure and the change in shape compress the veins in the foot. When the foot is lifted, the compression is relieved and blood flows into the veins again. In this way, the movement of these structures in the hoof acts as a pump.

These specialized elements of the equine foot can also be responsible for or victims of serious pathology, such as in the case of laminitis. Lane A. Wallett, DVM, of the University of Florida's College of Veterinary Medicine recently examined paleontological research collections of equine distal phalanges and found evidence of chronic laminitis in 75 percent of specimens. The specimens ranged from 11,000 to 3.5 million years old.

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Norbrook

Injectable carprofen

Norbrook Laboratories has released a new product: Carprieve (carprofen) Injection for Dogs. Carprieve is a subcutaneous injectable carprofen designed for the relief of pain and inflammation associated with osteoarthritis and for the control of postoperative pain associated with soft tissue and orthopedic surgeries in dogs. The injection contains the same active ingredient, formulation and dosing regimen as Rimadyl (carprofen) Injectable Solution. It is available in 20 ml and 50 ml bottles.

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IDEXX

Canine ECG device

IDEXX Laboratories has launched the CardioPet ECG device, making cardiac screenings, consultations and collaboration with board-certified cardiologists easier. With six leads and pet-friendly clips, the device is DICOM-compliant and offers improved diagnostic quality and patient comfort. Veterinarians can now view the ECG to ensure the quality of tracings before submitting it. Practices can submit cases electronically at their convenience, combining ECGs, radiographs and/or echocardiograms in a single transmission when requesting a comprehensive cardiac consultation.

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Feline FeLV-FIV test

Zoetis' new combination Witness FeLV-FIV Feline Leukemia Virus (FeLV) Antigen and Feline Immunodeficiency Virus (FIV) Antibody Test Kit is now available for preorder. The new test offers veterinarians an accurate and cost-effective point-of-care option that requires no refrigeration or snapping. The test kit uses rapid immunomigration technology to detect the presence of FeLV antigen and FIV antibodies, providing results in approximately 10 minutes. In a series of clinical tests conducted by Zoetis, the Witness FeLV-FIV Test demonstrated excellent sensitivity and specificity.

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For fastest response visit vhub.zoetisus.com

Mason Company

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The Mason Company's Fiberglass Cat Condo is a five-foot-wide unit designed specifically for cats to meet Association of Shelter Veterinarians guidelines. Developed from the popular Quiet Cottage, Mason's Fiberglass Cat Condo has double doors for easy access and a removable center divider that separates litter from living and sleeping areas. Manufactured with durable fiberglass materials, the condos offer a warmer, quieter and more attractive environment than metal cages.

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Dechra

Navicular syndrome treatment

Dechra introduces Osphos, a new intramuscular injection for the control of clinical signs associated with navicular syndrome in horses. The product contains clodronate disodium, a bisphosphonate approved by the FDA for use in horses via intramuscular injection. In a clinical trial in 86 horses, lameness improved in 74 percent of horses by at least one grade 56 days after treatment. The product legally may be administered only by or on the order of a veterinarian.

For fastest response visit equinelameness.com

Patterson Veterinary

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Patterson Veterinary has partnered with Mocom, a manufacturer of sterilization units. Patterson will exclusively offer the Mocom B Classic 28 sterilizer, a unit that offers short cycle times and the ability to sterilize double-wrapped instruments. It includes an LCD screen and keypad and is managed using an ID PIN system to record data that can be downloaded to a USB device and transfered to a PC. In addition, the sterilizer's built-in, fully automated water feed system features water level sensors to ensure proper filling and draining and make sanitation easy.

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Oxford Science

Countertop chemistry analyzer

Oxford Science, a distributer of veterinary laboratory equipment, has announced the U.S. debut of the new Phoenix Chemistry System to provide veterinarians reference laboratory testing capabilities in a compact countertop instrument. The system employs innovative dual linear flow-cell and solid state LED technology, providing veterinarians with accurate, fast results in an easy to operate analyzer. It allows veterinarians to run a chemistry panel or single tests including bile acids, fructosamine and fibrinogen.

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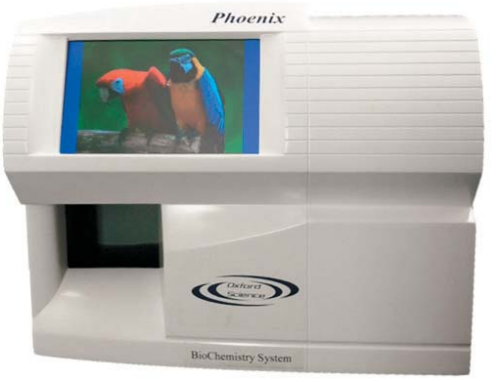

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Midmark has introduced the 255 LED Procedure Light to provide an affordable, high-quality option for lighting in-office procedures. A combination of optics, including a color rendering index of greater than 95 and a color temperature of 4,400 K, enhances clinicians' ability to see color variations in tissue, which can lead to more accurate diagnosis and treatment. Additional features include 7,500 footcandles, a reflector with 1,040 facets and integrated controls on both sides of the light head, which provide convenient access for brightness adjustments.

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LifeLearn

Company rebranding

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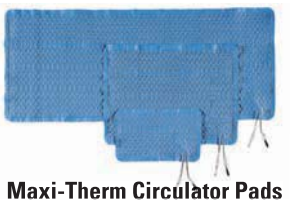

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August 28-31
CVC Kansas City
(800) 255-6864, ext. 6
thecvc.com/kc

December 3-6
CVC San Diego
800) 255-6864, ext. 6
thecvc.com/sd

CVC unconventional

National and international meetings

February 5
Soft Tissue Surgery
Fairfax, VA
(703) 733-0556
dcavm.org

February 9-13
EURASIA Veterinary Conference
Kota Kinabalu, Borneo, Malaysia
49-89-2180-2651
eurasia-vc.com/e

February 27
Music City Veterinary Conference 2015
Murfreesboro, TN
(931) 433-6289
tvmanet.org

Feb. 28-March 7
42nd Veterinary Orthopedic Society Conference
Sun Valley, ID
(517) 381-2468
vosdvm.org/

March 5
Internal Medicine
Fairfax, VA
(703) 733-0556
dcavm.org

March 8-10
Animal Care Conference
Sacramento, CA
(916) 447-1700
cvma.net

March 11
Neurology: Small Animal Veterinary Medicine Seminar
Plymouth Meeting, PA
(215) 284-7050
delawarevalleyacademyvm.org

March 11-13
University of Pennsylvania Annual Conference
Philadelphia, PA
(215) 746-2421
vet.upenn.edu/about/news-and-events/

March 16-19
Principles in Small Animal Fracture Management
Columbus, OH
(610) 695-2459
aona.org/#AONA=

March 28
Veterinary Dentistry & Radiology for the Veterinarian and Technician
San Mateo-Dublin, CA
(941) 276-9141
veterinarydentistry.net/vet-dental-course-san-mateo-california/

Local and regional meetings

February 7
Pennsylvania VMA 11th Annual Winter Conference
Lafayette Hills, PA
(888) 550-7862
pavma.org

February 8
Vermont VMA Winter CE Conference
Burlington, VT
(802) 878-6888
vtvets.org/eweb/startpage.aspx

February 11
Iowa VMA Winter Conference
Altoona, IA
(800) 369-9564
iowavma.org

February 13-15
24th Annual Alabama VMA Conference for Food Animal Veterinarians
Columbiana, AL
(334) 395-0086
alvma.com

February 19-22
Midwest Veterinary Conference
Columbus, OH
(800) 662-6862
mvcinfo.org

February 22
Southwestern Indiana Veterinary Medical Association Annual Conference
Evansville, IN
(812) 305-1865
invma.org

February 22-26
Northern New England Veterinary Alpine Symposium
Bretton Woods, NH
(804) 346-2611
veterinaryskimeeting.com

February 26-28
Virginia Veterinary Conference
Roanoke, VA
(978) 501-2682
vvma.org

March 6-8
Oregon Veterinary Conference
Corvallis, OR
(800) 235-3502
oregonvma.org

March 13-15
California VMA Annual Spring Yosemite Conference
Yosemite National Park, CA
(800) 655-2862
cvma.net

March 22
Feline Medicine Seminar by Louisiana Academy of Veterinary Practice
Hammond, LA
(985) 687-7242
laavp.org

March 28-29
UC Davis Winter Conference
Davis, CA
(530) 752-3905
vetmed.ucdavis.edu/ce/

April 11
San Diego County VMA Veterinary Conference
San Diego, CA
(619) 640-9583
sdcvma.org

April 24-26
West Virginia Veterinary Medical Association Spring Meeting
Greenbrier, WV
(804) 346-0170
wvvma.org/event/greenbrier2015/

May 13
Massachusetts Veterinary Medical Association Spring CE Conference
Marlborough, MA
(508) 460-9333
massvet.org

May 20-21
GA Veterinary Managers Association Meeting & CE
Marlborough, MA
(678) 467-2750
gavma.com

May 20-21
16th Annual Pennsylvania VMA Spring Clinic
State College, PA
(888) 550-7862
pavma.org

June 07-09
Idaho VMA Annual Conference
Sun Valley, ID
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June 18-19,
Vermont VMA Summer CE Conference
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The year the sheep stole the **Super Bowl**

Sometimes the memories we make outlast the things we miss out on.

Does it even seem possible that it's been 15 years this January since we were looking at our stores of bottled water and alkaline batteries and wondering what we were gonna do with them now that Armageddon hadn't happened when 1999 expired? Think about it. People who were 25 at the time are now 40—sheesh, 40 sounds pretty old. Or, even worse, people who were 35 at the time are now 50 (me). Now that's really getting old.

But when I think about notable January events, I always think of the Super Bowl. It's a big deal and I always want to watch, even if I don't care who wins. All the cool commercials and halftime mishaps make the actual game seem like an afterthought. One January, 22 years ago was a bigger deal than Y2K in my eyes, though. And, of course, it happened the day of the Super Bowl.

Gordon's tone of voice was nothing less than extreme. Generally, ol' Gordon speaks in a slow, most monotone manner, but today he was rattling off words so fast I couldn't comprehend what he was saying. This, coupled with a pitch a few octaves higher than his normal baritone, made me take note.

I was just getting settled in my chair and watching the team introductions when the phone rang. If you're not familiar with small town emergency calls, they usually subscribe to Murphy's Law. Anytime you sit around the table with the family to eat a proper meal, you can count on the phone calling you away. If you want to go fishing, the phone will ring. If you want to go to town and watch a movie, the phone will ring. Or they'll stop the movie and page you, which has actually happened to me. If you just stay in the living room, you might get away with no calls.

This time the emergency call was from my good friend Gordon. He raises show sheep and his flock is among the best in the world. There are roughly 100 ewes that live in a pasture just north of his mom and dad's house.

Gordon's tone of voice was nothing less than extreme. Generally, ol' Gordon speaks in a slow, most monotone manner, but today he was rattling off words so fast I couldn't comprehend what he was saying. This, coupled with a pitch a few octaves higher than his normal baritone, made me take note.

It seemed that some rascal dogs had gotten into the herd and chewed up the ewes. Gordon was telling me the number of attacked animals and severity of lesions so fast I couldn't keep up. I finally told him to relax; I would get my sewing kit and be there in 20 minutes. I told him to get the ones that had been injured into a pen and we would get them put back together.

As I approached the pasture from the south, I saw about 10 ewes grazing in the pasture and the rest were in a pen beside the house. What? Maybe Gordon had misunderstood me. Surely those were not the only ewes that had been spared in the attack.

As I pulled up next to the pen I found his two daughters with tears streaming down their cheeks and good ol' Gordon, still talking as fast as an auctioneer. He had penned the ewes that had been attacked—78 to be exact. The lacerations ranged from small puncture wounds to near-skinning for a few animals.

I began categorizing the animals and separating the emergencies from the "these can waits." I got the girls and Gordon shaving wool off the damaged flesh and scrubbing them up so I could start sewing. I called a technician and asked if she could bring more lidocaine and suture material, and we went to work.

Seven hours and more than 90 yards of suture material (almost as long as the football field they play the Super Bowl on) later, we put the last stitch in. Over the next few days, we used almost a gallon of penicillin trying to keep down secondary infections. We got those ewes up every day, washed the wounds and topically treated and flushed the punctures. Even with our best efforts, we still lost three of them.

But here's how life shows us what's really important: I don't even remember who was playing in that Super Bowl. I bet you don't either. I can't remember who sang at halftime or one commercial from that event. But even though I grumbled about having to miss it, I made a memory that day I will never forget. **dvm360**

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

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