Hill's
Transforming Lives™

SPARK A CONVERSATION. SPARK HIS METABOLISM.

Focus your weight conversation on metabolism, and make it easier for pet parents to commit to weight loss success for their dog or cat.

1. Weight gain can be a sign of a **slowing metabolism**, which happens naturally over time

2. Prescription Diet® Metabolic is the only nutrition clinically proven to **activate metabolism**[1]

Helped **96% of dogs lose weight** in two months at home[2] — even though owners didn't know their pet was on a weight loss plan

TURN OVER AND FIND OUT MORE.

For best results, feed Metabolic as directed in the feeding guide.

[1] Hill's data on file. Based on current therapeutic products in market.

[2] Veterinarian-supervised feeding study with 351 client-owned pets; 314 pets completed after 67 days. Data on file. Hill's Pet Nutrition, Inc.

HillsVet.com

Hill's
Transforming Lives™

DOES THE WEIGHT LOSS CONVERSATION CALL FOR A HIGH FIBER, CALORIE RESTRICTIVE APPROACH?

Satisfy the need with Hill's® Prescription Diet® r/d® — your better choice over Royal Canin® Satiety® Support.

For more than 60 years, veterinarians have trusted the proven weight loss nutrition of Prescription Diet® r/d® for treating their overweight patients. And while Prescription Diet® r/d® dry and Royal Canin® Satiety® Support dry are both high fiber and restrictive calorie options, Prescription Diet® r/d® is a better value for your clients.

	r/d® Dry	Satiety® Support Dry
Restricted calories	✔	✔
Blend of soluble and insoluble fibers	✔	✔
Formulated to help pets feel full	✔	✔
Great taste	✔	✔
Better value*	✔	✖

HillsVet.com

*Based on a comparison of the current MSRP of canine and feline products

dvm360 Find it all here.™

May 2018 | Volume 49 | Number 5 | dvm360.com

New York Times on roundworm risks

Veterinarians can help highlight the link between animal and human health

page 8

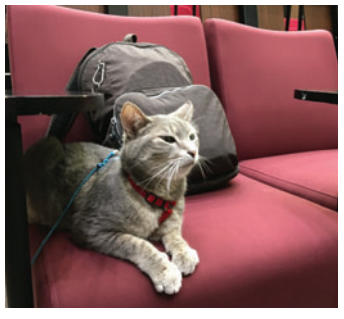
dvm360 leadership challenge

What you didn't learn in vet school

Is there a disconnect between veterinary education and the skills needed for everyday practice? Our research says yes—new grads feel inequipped for a number of key clinical and nonclinical areas when they leave school. What can bridge the gap? Mentorship! We bring you a pep talk and guide rolled into one, with supporting data exclusively from dvm360. Plus, what several vet schools are doing to make sure grads are prepared.

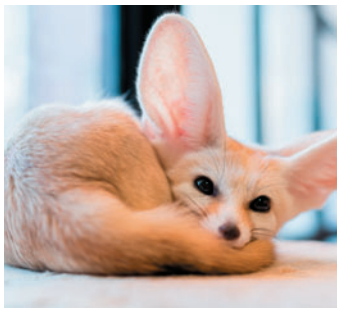
fetch dvm360 CONFERENCE™

See Fear Free tactics live at Fetch dvm360 this month page 6



Innovation Summit: Good vet vibes—plus a cute cat! page 14

Those itchy dogs: Which medications should you try first? page 35



What does the (pet) fox say—and is it even legal? page M1

UBM

Make killing fleas & ticks

DELICIOUSLY SIMPLE.

Preferred by dogs[1] and dog owners[2] – NexGard® (afoxolaner) makes it easy to protect your canine patients against fleas and four of the most common species of ticks in North America.

Please see brief summary on page 03

[1]Data on file at Merial.
[2]Data on file at Merial. Based on veterinary dispensed dose data.

NexGard is a Merial product.
Merial is now part of Boehringer Ingelheim.

Boehringer Ingelheim

IMPORTANT SAFETY INFORMATION: NexGard® (afoxolaner) is for use in dogs only. The most frequently reported adverse reactions included pruritus, vomiting, dry/flaky skin, diarrhea, lethargy, and lack of appetite. The safe use of **NexGard** in pregnant, breeding, or lactating dogs has not been evaluated. Use with caution in dogs with a history of seizures. For more information, see full prescribing information or visit www.NexGardForDogs.com.

dvm360 Find it all here.

Mission

Through its extensive network of news sources, **dvm360** provides unbiased multimedia reporting on all issues affecting the veterinary profession.

Content

News Channel Director | **Kristi Reimer Fender**
kristi.reimer@ubm.com

Business Channel Director | **Brendan Howard**
Medicine Channel Director | **Mindy Valcarcel**
Team Channel Director | **Portia Stewart**
Content Marketing Director | **Adrienne Wagner**
Senior Content Specialist | **Jennifer Gaumnitz**
Associate Content Specialists | **Katie James, Sarah Dowdy**
Assistant Content Specialist | **Hannah Wagle**
Clinical Techniques Course Manager | **Jennifer Vossman, RVT, CMP**
Digital Content Director | **Jessica Zemler**
Digital Design Director | **Ryan Kramer**
Associate Art Director | **Nicholette Haigler**
Designers | **Angela Miller, Roxy Townsend**
Marketing Copywriters | **Gabrielle Roman, Ericka Cherry**
Multimedia Producer | **Troy Van Horn**

Contributing Authors | Advisory Board

Christopher J. Allen, DVM, JD | Jan Bellows, DVM, DAVDC
Bo Brock, DVM | Jeremy Campfield, DVM
Ed Kane, PhD | Robert M. Miller, DVM
Michael Paul, DVM | Marc Rosenberg, VMD
Sarah J. Wooten, DVM

Sales

Sales Director | **David Doherty**
(913) 871-3870 | david.doherty@ubm.com
Account Manager | **Angie Homann**
(913) 871-3917 | angie.homann@ubm.com
Account Manager | **Kelly Main**
(913) 871-3872 | kelly.main@ubm.com
Account Manager | **Emma Pierce**
(913) 871-3873 | emma.pierce@ubm.com
Account Manager | **Terry Reilly**
(913) 871-3871 | terry.reilly@ubm.com
Account Manager | **Heather Townsend**
(913) 871-3874 | heather.townsend@ubm.com
Digital Data Analyst | **Jenny Shaffstall**
913-871-3854 | jenny.shaffstall@ubm.com
Sales/Projects Coordinator | **Anne Belcher**
(913) 871-3876 | anne.belcher@ubm.com
Books/Resource Guide Sales | **Maureen Cannon**
(440) 891-2742 | maureen.cannon@ubm.com

UBM Animal Care

Vice President & Managing Director | **Christie McFall**
913-871-3810 | christie.mcfall@ubm.com
Vice President, Digital Product Management | **Mark Eisler**
Group Content Director | **Marnette Falley**
Medical Director | **Theresa Entriken, DVM**
Fetch dvm360 Director | **Peggy Shandy Lane**
Business Manager | **Chris Holston**

UBM Americas, Life Sciences Group

Executive Vice President &
Senior Managing Director | **Tom Ehardt**

Subscriber Services: Visit dvm360.com to request or change a subscription, or call our Customer Service Department toll-free at (888) 527-7008. **Reprints:** Call 877-652-5295 ext. 121, or write to bkolb@wrightsmedia.com. Outside the U.S. and U.K., direct-dial (281) 419-5727 ext. 121. **Books and Resource Guides:** Visit industry-matter.com. **List Rental Sales:** Call Anne Belcher at (913) 871-3876, or write anne.belcher@ubm.com. **Editorial Offices:** UBM Animal Care, 11140 Thompson Ave., Lenexa, KS 66219; 913-871-3800. **Websites:** dvm360.com; fetchdvm360.com; UBMAmericas.com.

UBM

Painting pets, building teams

Decorate your practice and uncover hidden talents.

Recently the dvm360 team moved into a swanky new office building. For the most part the walls are bare, and while there's something to be said for the clean, blank-slate look, the dearth of animal images is not quite the thing for a group of pet-loving employees.

So our Fun Committee took matters in hand, combining a team-building activity with the creation of art for our walls. Here's how it worked: We each submitted our favorite pet photo to a local Wine & Design franchise, which turned it into a black-and-white canvas ready for paint. They provided the supplies and the instruction—"Yes, the eyes look weird at first, but once you add the fur it'll all come together"—and we did our best to master our insecurities and get fearless with our brush strokes (wine helped).

The results were remarkable. The resident designers and visually creative types ended up with masterpieces, of course. But we also discovered artists among us whose identity as such had heretofore been unknown. Even those of us who simply attempted to get blobs of paint in approximately the right colors in approximately the right places had something to be proud of (as I am of Lucy Jean up there on the right).

Plus, the whole experience was downright inspiring. Creating something with your hands taps into a piece of the spirit that nothing else can, even if you're no Van Gogh, like yours truly. It was thrilling to see what coworkers and friends were capable of. We stared intensely at images of our pets for two-and-a-half hours, trying to do justice to their soft fur and soulful eyes, and fell even more rapturously in love with them as a result.

It occurred to me that this would be a fantastic activity for a veterinary practice to undertake. Throw a party, get creative, inspire one another and maybe even yourself, and end up with a whole passel of original art for your hospital walls. I promise you'll love it.

This painting started out as an iPhone photo snapped while Lucy was "helping" me make the bed. To see more from the team, visit **dvm360.com/petpaintings**.

On any given day, you're dealing with ...

Money problems
Job performance woes
Relationship struggles
Medical emergencies
Frustrated coworkers
Fractious furballs ...

And you know what? We can't stand it any longer.

We think these issues are critical. So, you'll find the support you need at every Fetch dvm360 conference.

What does that look like?

- Sessions where your peers talk openly about the solutions to keep from totally losing it on everyone in their lives
- Opportunities to invest in your emotional health, because sanity is something worth fighting for
- Healthy physical activities that change the way you learn and open your mind to new ideas.

All that, and the CE you need to nurture your mind and get back to enjoying your life and work. **Register today.**

UBM

Join us in

Baltimore

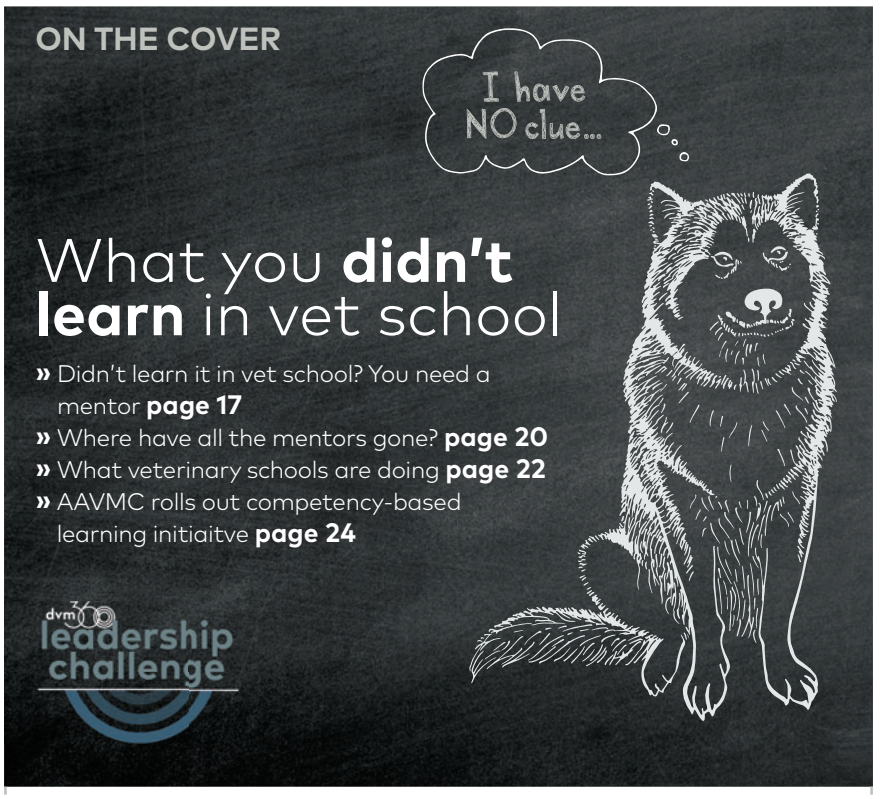
May 2-5, 2019!

fetch™ dvm360 CONFERENCE

Kansas City, August 17-20, 2018
San Diego, December 13-16, 2018
Baltimore, May 2-5, 2019
Go to fetchdvm360.com to learn more and register.

CONTENT | Inside

dvm360 Find it all here.
Volume 49, Issue 5



PURINA®
PRO PLAN® VETERINARY DIETS

WHAT IF...

WE COULD SUPPORT CATS WITH KIDNEY DISEASE SOONER?

Introducing two stages of kidney care for one breakthrough approach to support your patients with chronic kidney disease.

EARLY CARE		ADVANCED CARE	
Moderate protein	Restricted phosphorus	Reduced protein	Restricted phosphorus

LEARN MORE ABOUT THIS **BREAKTHROUGH APPROACH TO KIDNEY CARE.**

1-800-222-8387 | PurinaProPlanVets.com | Talk To Your Rep

New York Times puts roundworm risks in mainstream spotlight

A recent report on the prevalence and impact of toxocariasis reminds veterinarians to help people see the connection between animal and human health. *By Sarah Dowdy*

Millions of children in the U.S. have been exposed to a parasite that can cause respiratory, vision, liver and cognitive problems, according to a *New York Times* article, "The Parasite on the Playground." Yet awareness of this issue in the public and among human medical professionals remains low. How can that be?

The parasitic culprits in question are *Toxocara canis* and *Toxocara cati*. Infected dogs and cats shed *Toxocara* eggs in their feces, which can easily find their way into the hands (and, eventually, mouths) of children playing in contaminated playgrounds and backyards, the *Times* article explains. Once ingested, the eggs hatch and release larvae into the body, where they can find their way into various organs, such as the liver, eyes and brain.

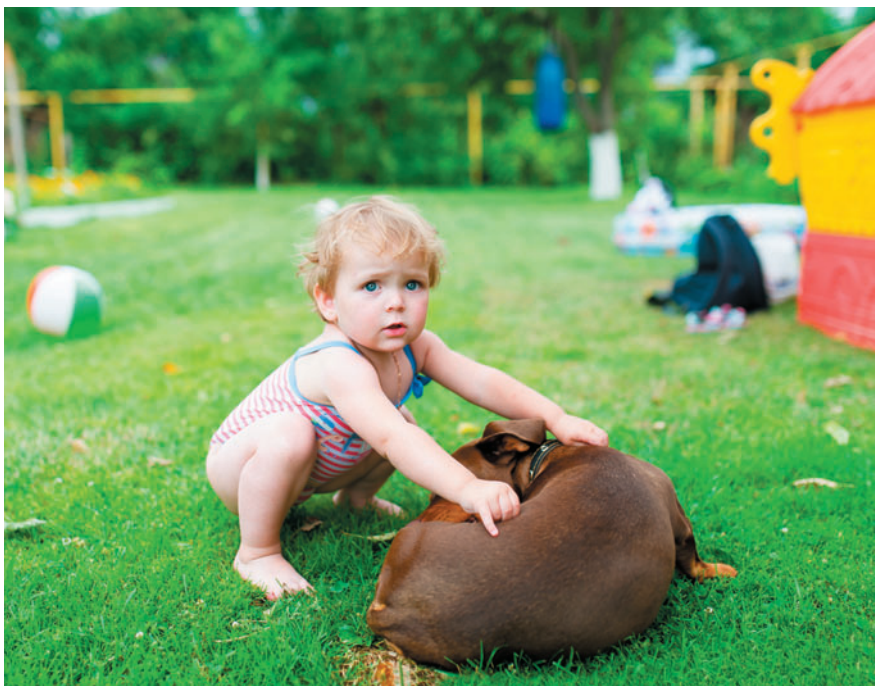
Though children are the focus of the *Times* piece, it includes data to show that they aren't the only age group affected. According to the results of the National Health and Nutrition Examination Survey from the Centers for Disease Control and Prevention published last year in *PLoS Neglected Tropical Diseases*, an estimated 5 percent of the entire U.S. population (roughly 16 million people) have *Toxocara* antibodies in their blood. Still, research on and interest in toxocariasis is lacking. Why aren't these roundworms a household name?

The *Times* article offers a couple of possible explanations. First, the infection rate is higher among African Americans (7 percent) and those living below the poverty line (10 percent). "If this were a disease of wealthy kids in Brookline, Massachusetts, and Bethesda, Maryland, and Westchester, New York, we'd be all over it," says Peter Hotez, MD, PhD, dean of the National School of Tropical Medicine at Baylor College of Medicine in Houston, in the article.

A recent survey of 21 New York City playgrounds found *Toxocara* eggs in nine of them, the article reports. Seventy-five percent of Bronx playground samples contained larval-stage eggs (which are more infectious). No larval-stage eggs were found in Manhattan playgrounds.

The second reason offered: Infected individuals often don't have any symptoms—or at least ones that are easily recognized by physicians.

"Nobody is dying here," says Dr. Hotez in the article, "but it is potentially causing developmental delays that are affecting quality of life [by infecting and affecting the central nervous system], and the economic impact is far greater. It could trap children in poverty." Which, of course, is more difficult to prove and quantify, though a 2012 study published in the *International Journal for Parasitology* reported that children seropositive for *Toxocara* scored significantly lower on intelligence and achievement tests, even after accounting for ethnicity, gender and socioeconomic status.



One person not surprised by both the prevalence of *Toxocara* and the ignorance surrounding it: Jenifer Chatfield, DVM, DACZM, the staff veterinarian at 4J Conservation Center, an instructor for FEMA/DHS courses, and a regional commander for the National Disaster Medicine System Team.

"Zoonotic diseases aren't typically at the top of a differential list for most human physicians," Dr. Chatfield says. "When was the last time your doctor asked you about your contact with animals? Or your kid's pediatrician asked about your child's contact with animals? Though pets continue to climb the social ladder and become more integrated into the lives of their owners, human medicine remains largely oblivious."

Dr. Chatfield doesn't let veterinarians off the hook, however: "While stray, feral and free-roaming dogs are no longer viewed as acceptable by communities, stray, feral and free-roaming cats seem to be rising in population and popularity. These cats may receive some vaccinations, but they aren't typically receiving a monthly dewormer and can be sources of zoonotic disease transmission," she says.

Dr. Chatfield is active in her state's veterinary medicine association and uses it as a vehicle for reaching out to local medical societies to educate human doctors on the impact of zoonoses on their profession and the community as a whole.

"It never fails that if I'm talking about zoonotic diseases from companion animals, such as toxocariasis, toxoplasmosis, tick-borne disease and cat scratch disease, the ophthalmologists in the room will come up after my lecture and tell me that they're seeing these diseases every day and that they're so glad someone's talking about it," says Dr. Chatfield.

Dr. Chatfield describes the veterinarian's role as "helping clients understand how to live safely with the animals they love." She urges veterinary professionals to talk about the connection between pets and human health during every exam.

If you aren't sure where to start, you can borrow one of Dr. Chatfield's lighthearted approaches: "I sometimes begin with something like, 'I strongly recommend that you and your kids avoid eating your pet's poop, but let's remember I'm not just talking about the times you know you're doing it,'" she says. "Help your clients be cognizant of how they can unwittingly be exposed to zoonotic parasites and how to safeguard themselves. Such conversations are especially important if the client has small children."

This includes encouraging hand washing after touching animals, after spending time outside and before consuming food. Dr. Chatfield also urges parents to talk to their children about avoiding strange animals (although some parents might need to give themselves that same speech), and encourages pet owners to keep their pets contained (in a home or yard and on a leash)—including cats. This naturally leads into a discussion on the importance of preventives. Monthly deworming medication is recommended along with heartworm, flea and tick preventives. "Regular deworming is especially important for young pets, as well as those that are particularly active and social," says Dr. Chatfield.

The key is to stress that the pet's health can have a direct effect on the health of the client and the client's family. "All veterinarians should view themselves as public health veterinarians," says Dr. Chatfield.

KAZLOVA IRYNA/SHUTTERSTOCK.COM

Walmart will soon offer veterinary care

PetIQ announces plan to open 20 clinics in Walmart locations by the end of May.

PetIQ, a pet health and wellness company, recently announced plans to open 20 VetIQ Petcare clinics in Walmart locations by the end of May, according to a company release.

This isn't the first partnership between the two companies, as Walmart has carried PetIQ's products for many years. The expanded alliance comes after PetIQ's acquisition of VIP Petcare at the beginning of this year and is part of PetIQ's plan to bring veterinary services to major retailers to gain a larger share of the veterinary products and services market—a market that is expected to reach $34 billion by 2021, as reported by research company Packaged Facts.

PetIQ says these first 20 clinics are only the beginning. The company plans to open more than 1,000 additional clinics in retail-partner locations through 2023—driving total net sales and adjusted EBITDA margin to more than $1 billion and 15 percent, respectively, the release states.

"We believe the combined company retail locations we serve represent a significant opportunity for us to grow our veterinary services offering," says PetIQ's chairman and CEO Cord Christensen in the release.

The release doesn't offer specifics on where these 20 clinics will be located, but it does note that the first two were scheduled to open before the end of March.

Americans spent $69.5 billion on their pets last year, APPA reports

Spending on veterinary care topped $17 billion, up 7 percent from 2016.

The American Pet Products Association (APPA) has released its latest figures on pet spending, with overall spending in the pet industry at $69.51 billion in 2017, higher than ever before, the association reports. This is up 4 percent from the 2016 figure. About a quarter of the total spent—$17 billion—went to veterinary care.

APPA's annual report covers pet spending in the categories of food, supplies/over-the-counter (OTC) medications, veterinary care, live animal purchases and other services.

Spending on pet food continues to be the highest source of dollars spent, with spending on dog food specifically making up a majority of sales, the APPA says. Interest in high-end, premium pet food and treats continues to drive spending in the pet food category, but as owners increasingly value-shop for these items, total food spending growth is slowing down.

Veterinary care spending remains the second-highest source of spending in the pet industry at $17.07 billion, up 7 percent from 2016. The APPA anticipates 6.9 percent growth in 2018 veterinary spending, exceeding growth estimates for any other category, putting veterinary care spending at more than $18 billion by the end of the year.

The third-highest source of spending is in supplies and OTC medications, which drew in $15.11 billion in 2017, the APPA says. Pet technology products, which are popular in terms of product innovation for pets, are not yet a big market share in terms of sales, the APPA reports—although it is growing.

The category that saw one of the highest-growth percentages was other services, which includes grooming, boarding, walking, training, pet sitting, yard services and more. It came in at $6.16 billion in 2017, up 6.9 percent from 2016.

Live animal purchases, for the first time in four years, did not decline but remained steady at $2.1 billion spent, according to the APPA.

JONATHAN WEISS/SHUTTERSTOCK.COM

The ark of efficiency

Noah's Westside Animal Hospital's strategy: Increase workflow efficiency and decrease the cost of high-quality pet care. *By Ashley Griffin*

No space went to waste in this general, emergency and specialty veterinary hospital in Indianapolis.

"We hoped to improve efficiency and utilization of equipment and control the cost of care, which has increased at a rate more than double that of inflation over the last several years," says Mike Thomas, DVM, co-owner of Noah's Westside Animal Hospital.

According to our judges, they succeeded. Dr. Thomas' new 14,877-square-foot veterinary hospital took home a Merit Award in the 2018 dvm360 Hospital Design Competition. Read on to learn three of Noah's keys to efficiency and take home these tips to your veterinary hospital.

1 Sharing is caring

After several remodels over the course of more than three decades, Noah's outgrew its original space as the practice morphed into a different mix of services. In the new hospital, the reception area is split into two areas, dividing the general practice and ER/specialist lobby, waiting and check-in areas.

While these spaces are separate, many features are shared in the new hospital. For example:

> Expensive equipment (shared by imaging, laboratory and ICU)

> Exam rooms (either hospital can become an 11-exam-room practice when needed, with five designated ER/specialist exam rooms and six general practice exam rooms)

> Restrooms and janitorial closet (located in clever corner locations)

"The unique layout allows two practices to share one building and allows for better use of personnel, equipment and other resources," the team says.

2 Build the best team

Before you can build a new veterinary hospital, first you have to build your team: architects, engineers,

By the numbers

Noah's Westside Animal Hospital—Indianapolis, Indiana
Owners: Dr. Mike Thomas, Chad Thomas
Number of doctors: 10
Exam rooms: 11
Total cost: $4,726,774
Cost per square foot: $207.71
Square footage: 14,877
Structure type: New, freestanding
Architect: Wayne Usiak, BDA Architecture
Photographer: Jonathan Bednarski, Fotovan

dvm360 Find it all here.

The people have spoken!

Congratulations to Veterinary Surgical Centers for being voted the People's Choice Award winner in the 2018 dvm360 Hospital Design Competition. To learn more visit dvm360.com/peopleschoice.

PHOTO BY JONATHAN BEDNARSKI, FOTOVAN

Hill's
Transforming Lives™

POST-SURGICAL NUTRITION PROTOCOL

Help your patients **get well soon**

Surgeries are stressful for your clients. With active post-surgical nutrition protocol, you can provide:

- Better patient care
- Peace of mind for pet parents
- Nutritional support to help your patients recover quickly

Hill's® Prescription Diet® i/d® **is an optimal post-surgical choice.**

- **Highly digestible** to help pets absorb nutrients necessary for recovery
- **Gentle on the pet's GI tract** — ideal to support nauseated patients
- **Promotes beneficial gut bacteria** which may be compromised by medication

Order your free post-surgical nutritional support material through your Hill's Representative today.

HillsVet.com/GI

Generally speaking: Porcelain tile coats the floors, and acoustic tile can be found on the ceilings for sound control. Complete with plants, a complimentary coffee station and plush seating, these areas are designed to promote relaxation for both clients and patients. "It's an inviting, soothing space decorated in cheery colors and materials," Dr. Thomas says. "It's designed for the stressed patient and client, minimizing hassles and the potential for adding to what may already be a stressful situation."

Flexibility is key: Each general practice exam room comes equipped with computer workstations, fold-up exam tables, cheery colors and framed artwork. And with five ER/specialist exam rooms and six general practice exam rooms, there are plenty of exam rooms to go around. "This allows for flexibility when one practice gets busy, in essence allowing either to become an 11-exam-room practice," the team wrote in their Hospital Design Competition entry.

Shed some light on surgery: The soft-tissue surgery room features a dedicated HVAC system, an imaging keyboard, a wall-mounted monitor and a swinging door for easy access to the room. Exterior windows allow some natural light to illuminate surgeries, and a pass-through for packs keeps materials at arm's length.

What a treat: Noah's spacious treatment area includes custom-designed workstations with both ergonomic and storage considerations. "Wet tubs, oxygen and suction drop are all observable from the command center so doctors can easily spot patients or technicians in distress or in need of help," Dr. Thomas says.

Attack your project from every angle at the HospitalDesign360 conference

Plan to attend the 2018 HospitalDesign360 conference (formerly the Veterinary Economics Hospital Design Conference) in Kansas City, Missouri, Aug. 15-17.

Gather ideas, learn from the profession's most noted veterinary design experts, and compare your options for design, construction, equipment, financing and more with our exclusive hospital design exhibit hall. Visit **fetchdvm360.com/hd** for more information.

Bonus! Practice owners from both of this year's Hospitals of the Year will be on hand to share their secrets.

contractors, interior designers—plus financial and legal experts. And it's hard to find good help these days, which is why Dr. Thomas made sure he hired experienced professionals who were familiar with veterinary hospitals, selecting Wayne Usiak, AIA, of BDA Architecture as his architect. How do you know if you're hiring the best? Ask for references and then check them, Dr. Thomas says.

"A seasoned architecture firm that specializes in veterinary hospitals is critical," Dr. Thomas says. "And plan for things to take longer and cost more than you expect."

He says that once the building starts coming together, you'll find things you want to change or add. So the more you can prepare for these unexpected costs ahead of time, the better.

"Contractors love change orders, and they charge copiously for them," Dr. Thomas says. "One contractor I heard about has a nice boat called 'Change Order.'"

3 Room to grow

A large multipurpose and training room was a must in Noah's new hospital, and it's one of Dr. Thomas' favorite features. This space, which

PHOTOS BY JONATHAN BEDNARSKI, FOTOVAN

All aboard: Upstairs, clients are delighted to find a beautiful, clean boarding area featuring glassed-in runs with solid dividers and individual drains. This space opens up to a rooftop relief yard with artificial grass so pets can get some fresh air and exercise.

Time for training: The training room is one of Dr. Thomas' favorite features in the hospital.

seats more than 100 people, can be used to train staff from all of Noah's locations as well as other area veterinarians and support staff.

"It can also serve as a community resource for civic groups, breed clubs or vendor partners, since it can be accessed without coming into either practice," Dr. Thomas says. "The room demonstrates our practice commitment to training, education and the continuous pursuit of improvement."

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

Want more dvm360 Hospital Design Competition content?

> Find a list of winners of this year's competition and a schedule of when to keep an eye out for them to be featured in print and on dvm360.com at **dvm360.com/2018winners**.

> Find out the 2018 People's Choice Award competition winner and see images of all 16 entrants at **dvm360.com/peopleschoice**.

> Keep your eyes open for the 2018 Hospital Design Supplement arriving in June with your issue of *dvm360* magazine for even more great design content.

The **bright side of vet life** at the Veterinary Innovation Summit

Promising technologies and ideas abounded at the second annual event. Let's pause a moment to dream of the future—the near future, at that. *By Mindy Valcarcel*

The second annual Veterinary Innovation Summit April 6-8 opened with Eleanor Green, DVM, DACVIM, DABVP, dean of Texas A&M's College of Veterinary Medicine and Biomedical Sciences, proclaiming her passion for innovation and technology.

The reasons for Dr. Green's excitement? Innovation offers new career opportunities for veterinarians, it allows veterinary faculty and students to free their creativity and it helps the global community. "Vets can and do change the world every day," she told attendees.

The summit, which hosted 462 attendees, was presented by the NAVC Veterinary Innovation Council and Texas A&M. It was held on the vet school campus in College Station, Texas.

Here are a few highlights from the general sessions:

> New imaging technology from Scarlet Imaging allows the user to see every detail of an animal's vasculature.

> Disaster planning and rescue innovations utilized by the Texas A&M Veterinary Emergency Team during Hurricane Harvey helped the operation progress as smoothly as possible.

> Providing care to pets in low-income communities is essential—David Haworth, DVM, PhD, of PetSmart Charities, says 59 million pets in the United States are living in households making less than $20,000 a year. These people want to be responsible pet owners, so they need three things, he said: physical access to veterinary care, options along a spectrum of costs, and general education about pet health.

This pretty girl, Bug, was on the edge of her seat during the summit. She was accompanied by her owner, Ken Lambrecht, DVM, of West Towne Veterinary Center in Madison, Wisconsin, who held a breakout session on how emerging technologies for pet fitness and health can help manage pet obesity.

PHOTO BY MINDY VALCARCEL

Three applause lines from general sessions

To get the feel of a few of the other general sessions, take note of these comments from speakers that sparked instantaneous applause from the audience:

"We make better decisions when we include everyone." This line from Charlotte Lacroix, DVM, JD, of Veterinary Business Advisors, occurred during a leadership panel. The audience rapidly responded to the clarion call of diversity—the desire to make sure veterinarians better mirror the society they support. Participants emphasized that diversity should be represented not only in gender and race but also socioeconomic status and other areas. For example, how many first-generation college graduates go to veterinary school? Diversity brings better solutions to veterinary medicine as a whole, panelists said.

"As we leverage technicians and nurses, we can compensate them better." This came from Bob Lester, DVM, chief medical officer of WellHaven Pet Health, during a discussion on the future of practice models and ownership. This thread of the conversation focused on why there aren't enough technicians or nurses in veterinary practices. Why? Because too often they aren't empowered, so they leave the profession. The audience indicated they wanted to help make sure veterinary technicians and nurses are able to use the skills they've learned—and earn a living wage.

"We need to start encouraging young people again." This was from Dr. Green on a discussion about training the next generation of veterinary students. These days many veterinarians are discouraging young people from pursuing veterinary medicine as a career. Want proof? In 2015, a dvm360 survey on veterinarians' job satisfaction showed that only 52 percent would recommend that their child or a friend's child pursue veterinary medicine—down from 76 percent in 2005. And according to the new Merck Animal Health study on veterinarians' well-being, things are getting worse: Only 42 percent of veterinarians in that survey said they would recommend the profession.

Your clients might soon be able to ask Alexa, "I think my dog might have arthritis. What should I do?"

Moments from the breakout sessions

Innovative ideas were also presented and dissected by attendees during breakout sessions. One of the more controversial sessions, judging by audience reactions, was on AI—artificial intelligence, not artificial insemination—and the ability to use in-home devices like Amazon Echo and Google Home to obtain veterinary advice. Yep, your clients might soon be able to ask Alexa, "I think my dog might have arthritis. What should I do?"

Ask.Vet is a text chat service for pet owners that has collected 30,000 hours' worth of conversations between pet owners and veterinarians. From this data, Ask.Vet analysts were able to determine the most common concerns pet owners ask about and the terminology they use in reference to the problems. They then created algorithms to walk pet owners through clinical signs or behaviors their pet is exhibiting and give recommendations, including making an appointment with a veterinarian in their area to get an official diagnosis and treatment recommendations.

A conversation with an AI device might lead to recommendations for pet owners to consider a specific diet or drug, as it did in the demo: "For dogs with joint problems, consider X brand food." No official diagnosis or prescription, to be sure—the requirement for a veterinarian-client-patient relationship keeps that in check for now.

About inspiring those future vets ...

Overall, Veterinary Innovation Summit attendees were optimistic about the future. Several speakers espoused that this is the best time to be in veterinary medicine. Attendees who engaged with the enthusiasm of Dr. Green and others seemed to want to be excited about the profession again and invite the young into the wonders of veterinary medicine.

All of the sessions were held in the Veni and Vidi buildings of the recently built Texas A&M veterinary school complex. This Caesarean reference (we're talking ancient Rome here, not obstetrics) brings a nice analogy to the experience—the attendees came; the attendees saw; the attendees are ready conquer and love veterinary medicine again.

ULTRA™ VACCINES

FULL PROTECTION

HALF THE VOLUME

GIVE YOUR PATIENTS A MORE COMFORTABLE VACCINATION EXPERIENCE

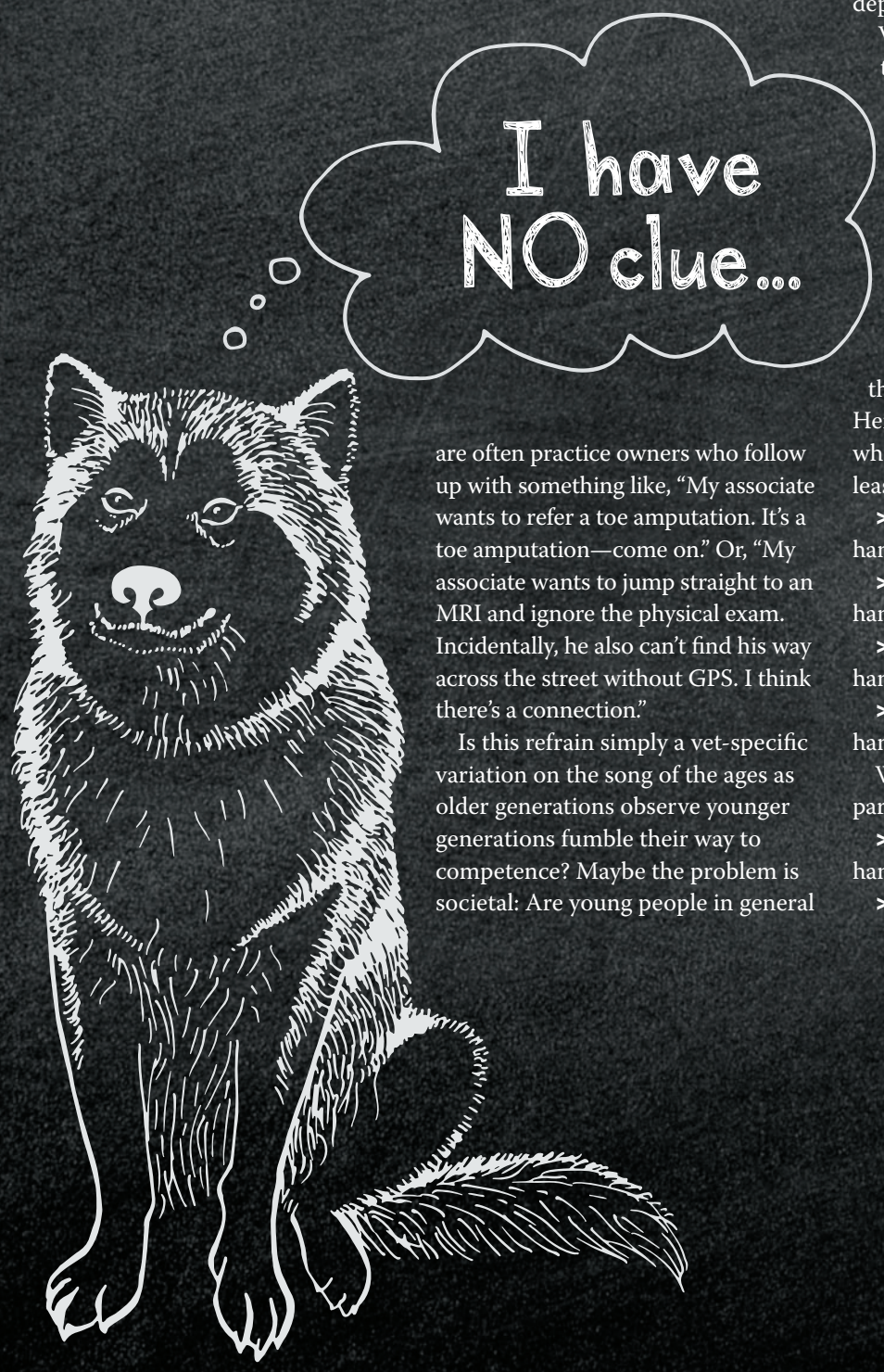
With half the volume of standard vaccines, 0.5 mL ULTRA™ vaccines deliver effective disease protection with minimal injection volume. Talk to your Elanco representative about the vaccine designed to be a more comfortable experience for your patients.

FEAR FREE
Taking the petout of petrified.

Elanco™

What you didn't learn in vet school

Our research shows that new grads feel unprepared in a number of key areas when they leave school. This dvm360 Leadership Challenge, supported by an educational grant from Banfield Pet Hospital, examines the problems—and the solutions. *By Kristi Reimer Fender*



Those of us dvm360 types who've been hanging around veterinarians for a decade or two have noticed a refrain emerging in the past few years from older and midcareer practitioners: "Young veterinarians just aren't coming out of school prepared to practice." These are often practice owners who follow up with something like, "My associate wants to refer a toe amputation. It's a toe amputation—come on." Or, "My associate wants to jump straight to an MRI and ignore the physical exam. Incidentally, he also can't find his way across the street without GPS. I think there's a connection."

Is this refrain simply a vet-specific variation on the song of the ages as older generations observe younger generations fumble their way to competence? Maybe the problem is societal: Are young people in general experiencing a crisis of confidence brought on by a soft upbringing in which they never had to solve their own problems? Or is something truly broken in the veterinary education system, causing it to fail graduates, the practices that hire them, and the patients and clients who ultimately depend on them?

While we don't pretend to get to the bottom of all of these questions, we did take an in-depth look at them, pulling the results together in this dvm360 Leadership Challenge on what you didn't learn in vet school. Specifically, in the 2018 dvm360 Vet School Survey, we asked our readers what they felt school had adequately prepared them for and where they felt adrift. Here's what the 325 veterinarians who responded to our survey felt the least prepared for clinically:

> 52 percent felt unprepared to handle dentistry.

> 49 percent felt unprepared to handle behavior.

> 41 percent felt unprepared to handle orthopedic surgery.

> 33 percent felt unprepared to handle nutrition.

When it came to nonclinical skills, participants were even less confident:

> 78 percent felt unprepared to handle practice finances.

> 73 percent felt unprepared for workplace conflict.

> 73 percent felt unprepared to deal with compassion fatigue.

> 72 percent felt unprepared to take care of their personal wellness.

> 62 percent felt unprepared to deal with difficult clients.

> 51 percent felt unprepared for leadership.

> 31 percent felt unprepared to handle client communication.

The good news is that graduation doesn't mark the end of the learning experience for veterinarians but the beginning of a new phase of lifelong professional development. And the best way to learn on the job is through mentorship (which we also asked our readers about—see / **dvm360.com/wherementors**).

One of dvm360's top experts on the subject of mentorship is Dave Nicol, BVMS, Cert. Mgmt MRCVS, a regular Fetch dvm360 educator, author of the book *So You're a Vet … Now What?* and founder of VetX Graduate, an online community for young veterinarians in which they receive mentoring services and career acceleration advice from "Dr. Dave" himself.

This article is adapted from So You're a Vet and several episodes of Dr. Nicol's "Freewheeling" podcast (information on VetX Graduate, the book and the podcast are all available at drdavenicol.com). Without further ado, here's Dr. Dave.

dvm360 leadership challenge

LIDA BU/SHUTTERSTOCK.COM

Didn't learn it in vet school? **You need a mentor**

Actually, everyone needs a mentor. If you already know it all, guess what—it's your turn to mentor someone else (and you'll probably benefit from coaching). *By Dave Nicol, BVMS, Cert. Mgmt MRCVS*

When I graduated from vet school, what you learned was what you picked up from your boss and other senior role models. Not surprisingly, these habits weren't necessarily the ones that would lead to a happy and long-lasting career. In my case, some of these habits and behaviors damaged and limited my career, and it took me a long time to work out a better way forward.

In veterinary medicine, a happy workplace and healthy relationships are just as important as solid clinical skills. To that end, lean in and listen up, because this matters a great deal: It is essential that you have a mentor.

There is no expiration date on this. I have owned and managed veterinary hospitals on two continents. I have managed teams of 50 vets. Do you think for one second that I'm the finished article? No way. I didn't fully understand the benefit of a mentor until far later in life, so if you're a recently minted veterinarian, I hand this gem to you and hope you'll take advantage of some advanced warning via my "retrospectoscope."

Mentors help you navigate your way in life. Some are assigned, some come free and others you must seek out and pay. Here are a few qualities you should expect. A good mentor:

> Knows more than you and can teach you things.

> Is outstanding at what they do.

> Gives honest advice and feedback.

> Sees your potential but isn't afraid of calling out your BS.

> Has your back but will also push you forward.

> Asks you the hard questions that will help you unlock the breakthroughs in your life.

> Will pick you up, dust you off and help you stand again when life knocks you over. (And trust me: If it hasn't happened yet, it will.)

Take my advice: If you're not currently in a mentoring relationship, seek one out. Identify a good candidate (more on this below) and sit down with them ASAP to work out a regular meeting schedule where you'll get exclusive access to each other's brain for at least an hour every two to four weeks (I like two-week intervals best).

And here's a note to you more seasoned docs: Anyone who's had the privilege of working with a great mentor would be mad not to offer the same support to each and every employee.

Mentoring topics

Not sure what to talk about in your mentoring appointments? Here are some topics to consider—these are all areas where recent grads need mentoring:

> How to communicate with clients in the exam room

> How to talk to clients about money

> How to persuade clients to follow your recommendations

> How to deal with impostor syndrome

> How to do end-of-life-care visits effectively

> How to talk about dentistry

So how do you find a mentor?

If you want to develop and grow your veterinary skills, how do you choose a good mentor? We touched on this above, but here are some additional qualities you should look for:

> **They have to care.** A good mentor has to be concerned about your welfare! Lots of people are knowledgeable enough to teach you, but they must care enough to spend time with you.

> **They have to have time.** You can work with the most adept clinician in the world, but if she's moving a million miles an hour and has no spare time, there's no point hassling her to be your mentor. It's never going to happen.

> **They have to display the qualities you want to display yourself.** A truism of life is that you become the sum of the people you spend time with. This is especially the case with your mentor! I encourage you to choose someone who's emotionally intelligent. How do you know who that is? It's the doctor who has a busy day and doesn't freak out. It's the manager who actually enjoys working with the team—and vice versa. Emotionally intelligent people make relationships look easy.

> **They have to see the upside for them.** A good mentor looks for a good mentee: someone who's interested in the subject matter, who shows up and is present in the conversation, and who asks good questions. There's nothing better as a mentor than working with someone who's eager to learn. So, be a nice person to mentor in the first place, and you'll have a much higher chance of pairing with someone great.

Having the conversation

Once you've identified someone with the skills you desire, who treats others kindly and who has adequate time, show interest in that person. It never hurts to give them a compliment.

Let's say I want to be mentored by my friend Emma, who does video work. I could say, "Emma, I've seen your videos on YouTube, and they're awesome. I enjoy watching them and I've learned a lot. I know you're super busy—and please say no if it doesn't work; I won't be offended—but I wondered if you had a few minutes every so often when I could take you out for a coffee and you could tell me what I need to do to produce amazing videos like you do."

That's how I would approach someone I wanted to mentor me. Don't spout bullshit, but offer sincere observations of what you admire. They're going to be flattered by that, and you'll have a foundation for a relationship moving forward. If they say no, don't take it personally. Find someone else and try again.

Benefits of being a mentor

Sometimes I'm asked if mentoring benefits the mentor as well as the mentee. The answer is an unequivocal yes. For one, it keeps you honest that your material is good. When you're mentoring, you have to make sure that what you're passing on is current, well-researched and borne out by your own experience—in other words, you can say, "This works because I've done it." This requirement keeps you as the mentor developing and growing as well.

Also, the foundation of any relationship is trust. When you've got trust, you've got a great relationship, and a great relationship means management is easy. When you mentor someone, you're checking one of their big "I need this!" boxes. All the data say veterinary graduates want clinical and emotional support. Mentoring means you care, and it will result in above-and-beyond levels of commitment and service.

If you want an antidote to toxic culture and poor practice performance, mentorship is it. You have to give to get, and what you give is your time, expertise and knowledge.

How do I make time to mentor?

What do you do if you're a practice owner or leader and you have the best of intentions to mentor younger veterinarians—but you just can't find the time? Did you promise your recruits in the interview that you'd mentor them once they hired on, and now you're struggling to deliver? You're not alone.

Let's face it: If we let it, clinical stuff will always get in the way of administrative and business stuff in veterinary medicine. When the emergency comes through the door or the appointments are stacked and waiting, strategic and growth-related activities get pushed aside. We focus on the urgent and ignore the important.

We have to get it in our minds that training and development are just as important as actually doing the work in veterinary practice—if not more important. And the best strategy for prioritizing mentorship is to put your meetings in the daily appointment schedule. Then protect time for that mentorship meeting like you protect time for the operating room.

I know this will cost you money because you won't be seeing patients. And your workload will go up, because you'll be doing your job plus some of your mentee's job. But if you ever want to stop the revolving door of veterinary graduates leaving after 12 months, this is what you have to do. When you spend time mentoring people, you help them feel motivated and loved, and you show them they have a place in the practice. They feel significant.

Then the magic time machine of mentorship starts to kick in. As your mentee takes on more skills, they can begin to do their job fully. Soon they can even take some of your job. As your workload starts to decrease, your time commitment to the mentoring process also starts decreasing. Now you can jump off the hamster wheel—and start looking for other people in your practice to mentor!

If you have zero interest in mentoring, don't force it. If you're the surgeon and you just want to cut all day long, fine. But consider this: Most of us in veterinary medicine don't just like teaching—we love teaching. We've been in education for so much of our adult lives that it comes naturally. So there's probably someone in your practice who would love the opportunity to mentor someone.

If you do enter into a mentorship relationship and make a commitment to give someone a piece of your brain, you have to stick to that commitment or you break a psychological contract. It's not on a piece of paper that you've signed, but it's even more important than a legal document because it's about trust. Once you break that commitment, trust breaks down, and people don't feel growth or support. That means they're going to look for someplace else to work.

In summary, mentorship is all about support, growth and connection. They want it, you can offer it, and it's beneficial to the mentor, the mentee and the practice as a whole. When you watch your little saplings grow into bigger plants, when you put them in bigger pots as they grow stronger in their skills, you unleash unbelievable amounts of vitality into your practice. Mentorship is not an easy road, but it's essential to the health of your practice—and the profession as a whole.

Dave Nicol is a graduate of Glasgow University Veterinary School in Scotland. He is the founder of the VetX Graduate mentoring community and a regular speaker at the Fetch dvm360 conferences. It is his personal mission to help pets and their people live happy, healthy lives by exploring the daily challenges we face, creating solutions and helping others grow.

MATT VALENTINE/SHUTTERSTOCK.COM

Stages of learning and development

Wondering where mentoring fits into a lifetime of career learning? Here's a closer look at where we start with our professional skills and where we hope to end up eventually.

1. Unconscious incompetence. This phase is when we're unaware of how much we don't know. Really, we're dumb as rocks. If someone is at this stage of their veterinary career, they're being trained, not mentored. The trainer tells the trainee exactly what to do and maintains full control and final responsibility for the outcome.

2. Conscious incompetence. This is when we're more aware of what we don't know and we're open to learning. Somewhere between this phase and the next—when we're consciously incompetent or consciously competent—mentoring comes into play. It's a good time for a mentor to practice the progression of "see one, do one, teach one."

3. Conscious competence. In this phase, we're able to perform our professional skills but we still have to think through each step—they're not yet second nature.

4. Unconscious competence—or, as I like to say, awesomeness! At this stage of learning our skills are so ingrained that we can do them without even thinking about it.

When someone is at a higher level of skill, whether it's conscious or unconscious, they benefit more from coaching than mentoring. They're innovating and growing, and the coach is just helping them get out of their own way. The person being coached has total responsibility for the outcome.

THE WITNESS® FELINE PORTFOLIO.

SIMPLE, SMART, RELIABLE DIAGNOSTIC TESTING THAT'S PERFECT FOR ANY PRACTICE.

To learn more about WITNESS feline tests, please visit www.simplysmarterchoice.com.

To order, contact Customer Service at **1-888-ZOETIS-1 (963-8471)** or **http://shop.zoetisus.com** or contact your local distributor.

WITNESS® | FeLV
Feline Leukemia Virus Antigen Test Kit

WITNESS® | FeLV-FIV
Feline Leukemia Virus Antigen-
Feline Immunodeficiency Virus Antibody Test Kit

WITNESS® | FFH
Feline Heartworm-Feline Leukemia Virus Antigen-
Feline Immunodeficiency Virus Antibody Test Kit

DETECT. PREVENT. TREAT.

zoetis

Where have all the mentors gone?

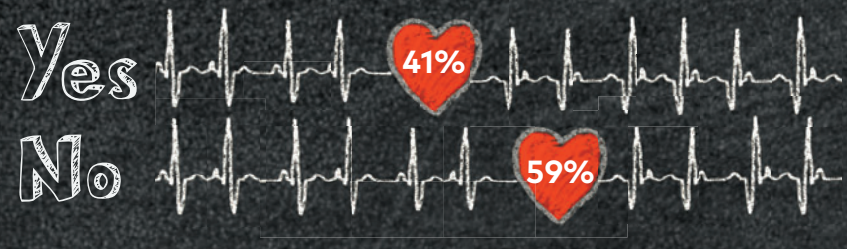
Take heart. It's your turn to be the mentor you want to see in the world.

Did you have a mentor in your first job? Based on our research, we'd guess many of you didn't. But that doesn't mean it's too late to turn the tide.

The 2016 Deloitte Millennial Survey shows just how vital mentoring is to your new workforce. According to their research, 66 percent of millennials expect to leave their jobs by 2020. The study also indicates it's a lack of mentorship pushing some millennials to move on, with 63 percent reporting their leadership skills are not being fully developed. The 2018 dvm360 Vet School Survey examined veterinarians' opinions about how prepared they were for their first year of practice. Here's a look at how mentorship shakes out in the veterinary profession.

Did your first job have any type of mentorship program?

Have you had any mentorship experience since your first job after graduating ?



When asked if veterinary education adequately prepared them to be leaders in their first year of practice,

51%

of respondents said, **No**

The key barriers to mentorship? Many respondents reported lack of time and the need to make money quickly as factors that prevented more experienced veterinarians at the practice from offering mentorship.

"The first practice I joined advertised itself as offering mentorship and then failed to follow through, relying instead on trial by fire. The lack of guidance to help find a good job was part of the problem."

"Everyone was too busy and overworked."

"Mentorship was not available at the small practice I started working in. I believe the owner was burned out himself and didn't have the bandwidth to mentor."

Source: The dvm360 Vet School Survey was sent in March 2018 to subscribers of *dvm360*, *Vetted* and *Firstline*. The survey garnered 346 responses with a margin of error of 5%.

Here's a look at comments from some respondents who did receive mentorship:

"My father and uncle were veterinarians, so I didn't miss any opportunities."

"Mentorship was provided by a good boss at my second job. He showed me through his own personal actions and how he practiced to be a good veterinarian."

"I sought my own mentoring options and was active in organized veterinary medicine even as a veterinary student. I had an amazing mentor in my undergraduate program and was introduced to the importance of professional organizations and networking in my first career, so I sought out opportunities myself in vet school and afterwards, since nothing was offered to the student body at the time.

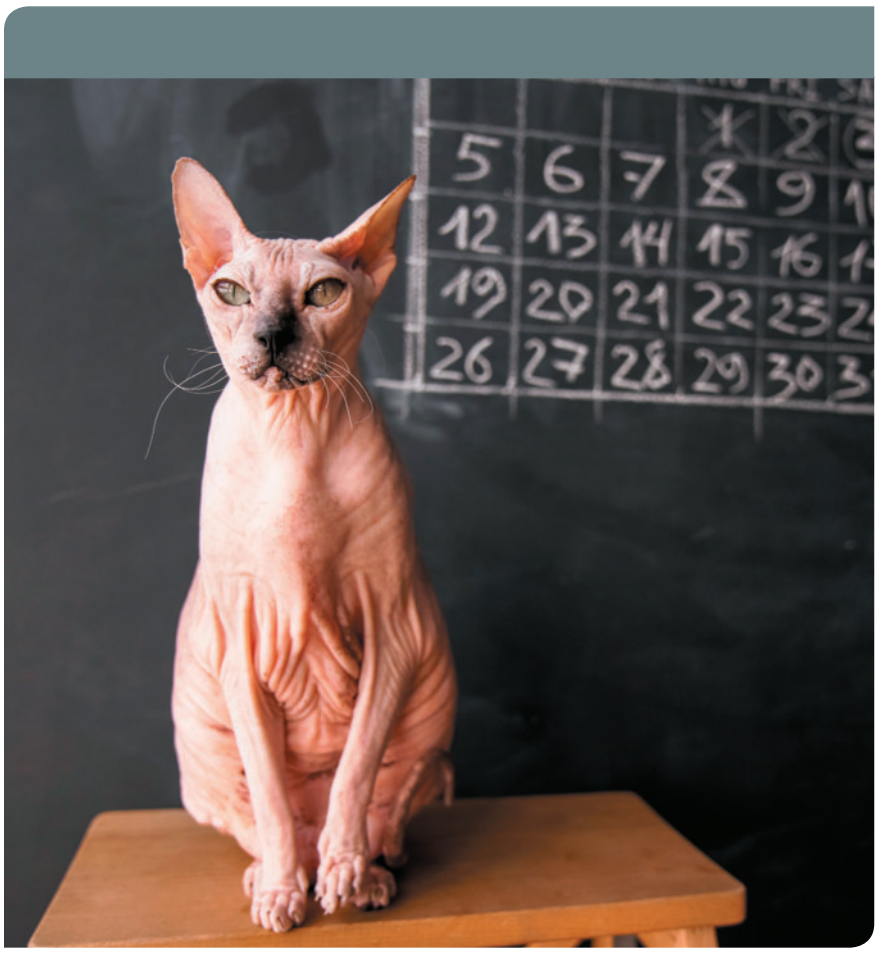
Henry Schein Veterinary Solutions can return these patients to your practice.

RECAPTURE YOUR "LOST" PATIENTS.

contact us at 1-800-426-9119 or practiceperformance@henryscheinvet.com

HENRY SCHEIN®
VETERINARY SOLUTIONS

What **vet schools** can do



Some schools are upgrading their curricula to teach technical skills from day one and make soft skills mandatory. Is it enough to bridge the gap between ivory tower and the practice trenches?

By Rachael Zimlich

For many new veterinarians, the real education begins after graduation.

There's so much knowledge and so many clinical skills to be crammed into four years of veterinary school, it's no wonder that some new graduates are left to learn the bulk of the professional and personal skills they need in practice outside of the classroom.

Veterinary programs have been paying attention, though, and many schools are starting to adjust curricula to meet their students' changing needs. From financial literacy to soft skills to telemedicine, here's how some veterinary schools are updating their programs for a changing profession.

University of Florida certifies veterinary business sense

Veterinarians' discomfort with the business side of veterinary medicine has highlighted the need for more training in this area across the profession. At the University of Florida College of Veterinary Medicine in Gainesville, Florida, clinical assistant professor Martha Mallicote, DVM, works on helping students develop business skills in veterinary school. Although the school has long offered certificate programs at the club level, the graduating class of 2013 was the first to participate in a new veterinary certificate offered by the school with more rigorous education in both business and personal finance.

Dr. Martha Mallicote

Dr. Mallicote believes it's important to expand these offerings to veterinary students, who struggle to manage their school debt and business operations later on as practice owners.

"There's a little bit of fear," she says. "It's very funny to me how veterinarians and scientists love data, but you put a dollar sign in front of it and they're like 'no way.'"

The program is optional, Dr. Mallicote adds, but about a third of veterinary students are now earning the certificate before graduation. The program consists of six courses worth 10 credit hours offered throughout students' third and fourth years.

It's too early to say how much the program is impacting practice ownership, she says, because many of the first graduates with the certificate are just four to five years out in practice, but the college is starting to collect quantitative data.

Feedback from certificate graduates does indicate that the coursework helped them interview for first jobs or negotiate salaries.

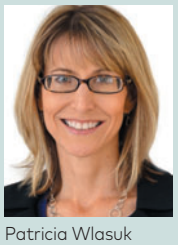
"It seems to make them more marketable. There are a lot of practice owners looking for people to buy into their practice," Dr. Mallicote says. "Knowing that you're hiring a graduate who's really interested in buying into a practice makes them more desirable."

Dr. Jim Lloyd

These initiatives are applauded by University of Florida veterinary school dean James W. Lloyd, DVM, PhD. "At our college of veterinary medicine, we really emphasize day-one competencies—not just clinical skills, but also communication, emotional intelligence, management, the ability to work in teams and leadership," Dr. Lloyd says. "We teach clinical skills through emergency and critical care, primary care and dentistry in our hospital as well as through practice-based clerkships and shelter medicine, which take place in non-academic settings."

Show me the money!

In addition to imparting business and personal finance savvy, some universities are also looking for ways to help their graduates manage their enormous levels of veterinary student debt—or keep from racking that debt up so high in the first place.



Patricia Wlasuk

One example is the University of Florida, which is now awarding $20 million in veterinary scholarships annually—and the amount is growing. "A large portion of it is in bequests and it's going to take time to start seeing the impact on the debt load for individual students," says Patricia Wlasuk, development director for scholarship support.

DMITRY GALAGANOV/SHUTTERSTOCK.COM

Solliquin®

Calm Your Pet's Soul

BEHAVIORAL HEALTH SUPPLEMENT

A unique combination of active ingredients come together in one chewable supplement to encourage calmness in stressful situations.

Veterinarians lose as much as 15% of their client base each year due to unresolved behavior issues.

Start the conversation with your clients:

"Does your pet hide when people come to visit?"

Solliquin.com

To learn more, contact your local Nutramax Laboratories Veterinary Sciences, Inc. Representative or contact Customer Service at 888-886-6442.

nutramax LABORATORIES
VETERINARY SCIENCES, INC.
946 Quality Drive • Lancaster, SC 29720
nutramaxlabs.com • 1-888-886-6442

010.1254.03

Lincoln Memorial starts technical skills training early

At Lincoln Memorial University College of Veterinary Medicine in Harrogate, Tennessee, faculty are teaching and evaluating technical skills throughout the veterinary program rather than waiting until clinical rotations begin.

"Knowledge is key to becoming a good practitioner, but it's not the only thing you would need," says Julie Williamson, DVM, MS, AFAMEE, the school's director of small animal clinical skills. "The best practitioners are the ones who not only have clinical knowledge, but clinical skills and professional skills, and who can work more closely with the veterinary care team. … We teach clinical skills in a way that allows our students to develop skills sequentially."


Dr. Julie Williamson

To accomplish this, the school weaves these skills into early lecture-based courses, where students are presented with opportunities to get hands-on experience. They get a firsthand look at concepts they learn in lecture through skills labs and demonstrations that will provide a skill base for their later clinical rotations, she says. (To see more details on this system, see the online version of this article at **dvm360.com/vetschools**.)

"We have [an] expectation for students to demonstrate competencies before they ever begin their clinical year," Dr. Williamson says. "We're working to try and fill that gap."

The school also is expanding how it teaches communication and professional skills so that by graduation students are better able to communicate their plan of care to pet owners.

Texas A&M focuses on technical skills as well as not-so-soft soft skills

While individual programs are adapting to meet changing student needs across the country, some schools are taking the route of a full curriculum review. Texas A&M University's College of Veterinary Medicine and Biomedical Sciences in College Station, Texas, recently conducted a major curriculum analysis that started in 2014 and was completed with cooperation from both short- and long-term graduates, employers and faculty.


Dr. Karen Cornell

The final result was an action report that included suggestions for closing gaps in the school's curriculum, says Karen Cornell, DVM, PhD, DACVS, associate dean for professional programs, with changes rolled out to first-year vet students at the start of this academic year.

The report suggested more focus on preparing students in problem-solving, critical thinking and critical reasoning. It also indicated a need for better communication and other professional skills, like financial literacy, she says.

"We also know that wellness is an important issue in our profession, including work-life balance," Dr. Cornell says. "That's something we took very seriously and addressed significantly."

What changed? The school added a series of professional and clinical skills courses for the first three years of the veterinary program with three streams—clinical hands-on skills, critical thinking and professional skills.

The hands-on clinical skills portion provides additional training and focus on technical proficiencies for ultrasound and physical exam, for example.

For critical thinking, the school is using a published model adapted for veterinary medicine that helps students use a process of reasoning to think through cases—instead of passively absorbing information, she says.

In the third stream for professional skills, students learn how to better communicate with pet owners and colleagues. Students are challenged early on to enter a mock exam room and take patient histories. They must collect and assess information from an actor posing as a pet owner to formulate a possible diagnosis and explain what's happening with the patient to the layperson.

The professional skills stream also includes the input of a certified financial planner on personal and professional finance. Topics covered include personal budgeting, credit scores, credit cards, student loans, personal wellness, interviewing skills, contract negotiation and cultural competency in dealing with diverse pet owner populations.

"People call these 'soft skills,' which I think is crazy, because these are professional skills required of students to be successful as professional veterinarians," Dr. Cornell says.

The school is also working on a plan to incorporate more training on telemedicine. The plan is to introduce and reinforce these concepts early in the program, then allow students to demonstrate skills by their fourth year. Dr. Cornell says veterinarians, like physicians, are increasingly being asked to deliver care where and how clients need it. "I think one of the things we need to reinforce is that that we've moved from doctor-centered care to relationship-centered care," Dr. Cornell says. "Working with a client means more than just providing direct orders."

Rachael Zimlich is a freelance writer in Cleveland, Ohio, and a former reporter for dvm360 *magazine.*

From the AAVMC

The AAVMC has developed a set of core competencies for the benefit of future veterinarians. Learn more at dvm360.com/AAVMCprep.

DESIRING
DVM DEVELOPMENT?

TOGETHER, WE ARE
EMPOWERING
A HEALTHY TOMORROW

From career pathing to functional skills training, Banfield has you covered.

Banfield.com/Careers

#BanfieldLife

Banfield®
PET HOSPITAL

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.

Letter to dvm360: No easy answers when owner and associate disagree on best course

A veterinarian with 30 years of critical care experience adds his perspective to the dilemma presented in a recent Old School, New School column. Where do you come down?

Who's right in this scenario? I believe everybody was a little bit right—and no one 100 percent right. While Dr. Greenskin wants the support (and revenue) of full diagnostics, Dr. Codger wants to please the client and save the pet. Either position has merit, but in this case, they're incompatible. I don't believe Dr. Codger should've interfered with his associate's case without permission; however, on some level Dr. Greenskin was glad of the help.

But primarily I notice that neither doctor considered offering options and letting the client decide which course of action she preferred. I've been an ER vet for 30 years, and critical scenarios with financial constraints are shockingly common. Long ago I realized that my job, in most cases, is not to take the responsibility for decisions away from my clients. My job is to fully examine the patient, discuss my findings and some potential scenarios, tell the clients the logical next step(s) and then offer options. Ideally, I can offer an aggressive plan with diagnostics and the highest estimate and the best odds for success, as well as a conservative approach with symptomatic treatment that is economical and possibly even a middle-of-the-road option. Then the client tells me what she or he wants to (or can) do.

With this approach, the client is involved in the decision-making process; if they opt for the conservative path and it isn't effective, they're far less likely to be angry. They're less inclined to believe we are all heartless money-grubbers, they understand that money for diagnostics does buy them answers, they don't feel judged if they simply cannot afford it, and it's clear whose responsibility this pet's care truly is.

There are always those cases (severely dehydrated diabetic, GDV, collapsed old retriever with fluctuant abdomen and white gums) where there is no conservative option that carries much chance of success and the only humane thing to do is euthanasia if the funds aren't available to be aggressive. However, I don't believe there is anything intrinsically wrong with putting limited funds toward treatment rather than diagnostics. In Doornail's case, I would've been willing to offer fluids overnight, famotidine and Flagyl, but I would've made sure the client understood that, without diagnostics, we couldn't say for sure what was going on. If he relapses? Well, we tried. If the owner reaches euthanasia at that point, she knows she tried. I tell clients what I can do, the odds of success and the cost. They decide.

I do always tell owners if I think the pet's suffering, but what they do is still their choice. Obviously full diagnostics is always great, but, realistically, plenty of clients can't afford that and I wouldn't say they all ought to euthanize. I prefer to be able to say exactly what's going on (e.g. "It's renal failure, not pancreatitis") and I often can't give a valid prognosis without diagnostics, but that doesn't mean there's nothing I can do to help make that patient better—which is why I went into this profession.

If you are clear about the level of assurance each option offers and document that on your record, you shouldn't be at risk for a lawsuit. And by making the client a part of my team so far as decisions go, I don't own every euthanasia.

I understand that newer graduates are often under a great deal of pressure to keep their production high. However, if the only options a client has is a high estimate or euthanasia, there will be more euthanasias and that's hard on us as well. Even a conservative treatment plan is likely to generate more revenue than euthanasia and the client is almost always grateful to have had a choice. We save a few more lives and feel better about looking in the mirror.

—Douglass Hopkins, DVM
Virginial-Maryland Regional College of Veterinary Medicine class of 1987

Editor's note: Read more letters (and the column that inspired them) at **dvm360.com/campfieldletters**.

The double-edged sword of **social media**

New advances in technology allow for connection with clients like never before, but what happens when a veterinary client vents her frustration online?

Dr. Jim Jenkins was a cutting-edge practitioner who was constantly kept busy by a demanding suburban community. He loved his patients, befriended his clients and had a flamboyant personality, to say the least. His pet German shepherd frequently roamed the clinic wearing a sign that said, "I'm Dr. Jenkins. May I help you?"

Dr. Jenkins loved his profession and let it be known to all who would listen. His practice was active on Facebook, Twitter, Snapchat and community websites. He constantly posted pet-related pictures, healthcare tips and anecdotal tales about his veterinary patients.

Dr. Jenkins' gregarious practice style was a hit with many pet owners, but a segment of his clientele was less enthusiastic. Recently one of the disgruntled clients had posted negative comments about Dr. Jenkins on Facebook, Twitter and a

KUNTURTLE/SHUTTERSTOCK.COM

local community website. The staff brought this to his attention and told him how unfair they thought the client's remarks were.

Dr. Jenkins was livid. How could anyone say he was insensitive and—even worse—unprofessional? Compounding the issue, the comments were spread all over social media. He wouldn't take this lying down.

The practice support team and associates recommended handling the situation with restraint. They thought it would be best for Dr. Jenkins to cool down and then approach the client in a professional manner to try to understand the source of her dissatisfaction.

Having the personality he did, Dr. Jenkins rejected their advice. He wrote a post on his town's community information page rebutting the comments made about him there. Then he copied his comments to his clinic's Facebook and Twitter page. Instead of simply saying he was sorry this client felt displeased and offering to discuss the issue, Dr. Jenkins went on the offensive. He stated that he was always sensitive and professional, and anyone who thought otherwise had poor judgment and probably shouldn't own pets at all.

This social media campaign was met with mixed reviews. Local pet owners who didn't know Dr. Jenkins and his practice now saw that at the very least he was proud and volatile—at worst, he was a self-centered egotist.

It took awhile for the dust to settle. The team's consensus was that Dr. Jenkins' reaction had hurt the practice's image and reputation, but the damage wasn't irreparable. Ultimately Dr. Jenkins posted that he may have reacted inappropriately.

Dr. Jenkins learned that social media posts are like double-edged swords. They reach huge audiences and can draw a lot of attention—but they also create self-inflicted wounds if not used with care.

What do you think of Dr. Jenkins' actions? Would you have handled the situation differently? Let us know at dvmnews@ubm.com.

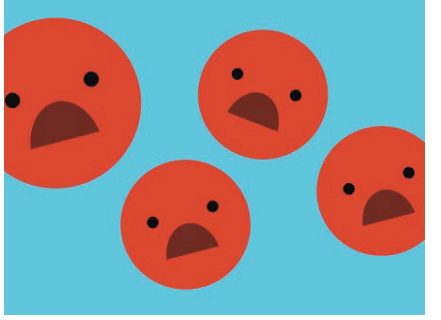
Dr. Rosenberg's response

Veterinarians in busy clinical practices must have thick skin. We are often faced with emotionally volatile clients—we see them when they're dealing with death, painful disease and negative family dynamics. In these moments pet owners often say and do things they later regret. If we are to be effective practitioners, we must act professionally and not be drawn into the chaos.

Dr. Jenkins is not an unusual practitioner. He's proud, committed and sensitive. He clearly overreacted and paid the price. If you don't want to occasionally be yelled at, insulted or otherwise confronted, you're in the wrong profession. This is the price we pay for helping animals that can't help themselves, and we also experience the rewards that come along with this care.

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

Social media posts are like double-edged swords. They reach huge audiences and can draw a lot of attention—but they also create self-inflicted wounds if not used with care.



TRUST.

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

HEARTGARD Plus is a Merial product.
Merial is now part of Boehringer Ingelheim.

Boehringer Ingelheim

REWARD THEIR TRUST WITH THE HEARTWORM DISEASE PREVENTIVE THEY'LL LOVE

- PREVENTS HEARTWORM DISEASE
- TREATS AND CONTROLS 3 SPECIES OF HOOKWORMS
- TREATS AND CONTROLS 2 SPECIES OF ROUNDWORMS
- OWNERS PREFER IT[1] AND DOGS LOVE IT[2]
- SAFE FOR PUPPIES AS YOUNG AS 6 WEEKS OF AGE

IMPORTANT SAFETY INFORMATION: HEARTGARD® Plus (ivermectin/pyrantel) is well tolerated. All dogs should be tested for heartworm infection before starting a preventive program. Following the use of HEARTGARD Plus, digestive and neurological side effects have rarely been reported. For more information, please see full prescribing information or visit www.HEARTGARD.com.

Heartgard® Plus
(ivermectin/pyrantel)

See brief summary on page 28

Dr. Greenskin is back and she's **not backing down**

Bullies beware. Time away from the veterinary hospital has given Dr. Greenskin some gumption, and she's not afraid to use it.

Dr. Greenskin managed to return to the office several days ago. After a sudden (and mostly unexplained) departure from the clinic—and lots of time to stew in her tumultuous feelings at home—she was convinced she was going to walk into an ice-cold work environment full of dirty looks and rolling eyes. She'd been practicing several monologues describing a multitude of issues in her home life requiring her to take off at the last minute, and while not *entirely* true, these manufactured responses were her best defense at diverting questions and stopping gossip.

After all of this fretting, however, Dr. Greenskin was completely astounded to find … wait for it … nothing. Absolutely nothing had changed. Nobody seemed to even notice that Dr. Greenskin had been absent. The receptionists were still playing on their phones and trading celebrity tabloids between rings on the office line. The technicians were buzzing away, getting things ready for the day while making the most not-suitable-for-work jokes imaginable.

ILLUSTRATION BY RYAN OSTRANDER

Jeremy Campfield, DVM

OLD SCHOOL, NEW SCHOOL

The only thing different was that Dr. Codger was nowhere to be found. He'd said something the last time he was at the hospital about wanting to learn curling before the next Winter Olympics. Despite all of Dr. Greenskin's doom-and-gloom thinking, not a single zombie was to be found lurking through the clinic. (Zombies? Huh? Read the previous installment at **dvm360.com/zombies**.)

Dr. Greenskin's anticlimactic return has given her a dose of reality: Those situations that caused her sleepless nights and ongoing anxiety? Nobody else in the hospital batted an eye. The young doctor wonders if her work (and maybe her personal life) would perhaps be less stressful if she stopped internalizing every conflict as a mortal blow to her character and quit blowing every little incident out of proportion in her mind. Dr. Greenskin is beginning to grasp that there's a balance to be had. Of course, she can not be flippant about serious situations, but maybe the holes in her crisis sieve should widen just a smidge.

Dr. Greenskin has fallen back into the swing of things without missing a beat and is surprised to find she actually missed a few of her coworkers. It's refreshing and relieving to be back in the trenches with them. On this particular morning, the hospital is running like a well-oiled machine with on-time appointments and consistent team communication. The day is looking like one of those rare days of practice bliss when clients, patients and team members are all feeling the mojo—at least until after lunch, when the good vibes come to a screeching halt.

Dr. Greenskin walks by the radiography room just as the most senior technician, Mrs. Actright, is venting to two of the receptionists on break. (Mrs. Who? Find the backstory at **dvm360.com/fightorflight**.) All three are having a good laugh at Actright's rant: "That young kid—he thinks he's so smart with all his fresh schooling! I just ate him up for breakfast! He doesn't know how to do anything! You should've seen him trying to hit a cat vein. He looked terrified—just sweating all over the place!"

The trio cracks up as Actright mimics the technician's shaking hands. "I felt so bad for that poor pincushion of a cat!" the senior technician continues. "Well, who knows what happened with that. I had to get out of there it was so ugly. Later I sent him to the back to clean empty cages so no more animals could be harmed by his stupidity."

Dr. Greenskin appears in the doorway as Actright's mocking monologue comes to a close. The technician turns and looks at the young doctor without an ounce of remorse in her eyes. On the contrary, her haughty glare seems to be asking, "What do you have to say about it, kiddo?"

Dr. Greenskin gives the two receptionists a look that sends them scurrying out of the room. Though visibly angry, Dr. Greenskin begins speaking firmly and coolly—a combination she's never before been able to achieve. "What I just heard is extremely disappointing, Mrs. Actright, both from a team and a patient care perspective," she says. "Your toxic behavior needs to stop."

Unmoved by this reproach, Actright sneers, "Well I'm not the one that keeps hiring these kids fresh out of school. You should go talk to the office people!"

Dr. Geenskin ignores the comment and continues: "As our senior technician, you are expected to step in if you think there's a patient care issue. You are also expected to support our younger technicians and coach them as needed. I would like for you to leave for the day." She points at the door. "I will speak with Dr. Codger, and he will be in touch with you."

Actright's hackles are up now. "You can't tell me what to do!" she storms. "I've been here longer than you've been alive!"

The doctor is forced to repeat herself with more firmness. "Leave for the day," she says in an even tone. "We're going to have to continue this discussion later. I'm the DVM in charge, and I don't want you working with my patients today."

Actright stomps out without another word, leaving an eerie quiet and several wide eyes in her wake. Dr. Greenskin addresses the witnesses: "Some things need to change around here. We'll get there. For now, let's finish up our last appointments, and I'll be in touch with Dr. Codger." Taking a deep breath, Dr. Greenskin grabs a chart and heads toward the front while two team members long oppressed by Actright's rule high-five in celebration.

Is Dr. Codger going to blow his top when Actright calls him and goes off (which she is doing at this very moment, of course)? Will Dr. Greenskin have any footing to hold onto as she embarks on this unexpected and out-of-character journey? Is she completely losing her mind, or is she finding her voice as a leader? Find out next time, in Old School, New School!

Email us at **dvmnews@ubm.com** *to let us know your thoughts on this scenario—and tell us how you've dealt with these kinds of conflicts in your own practice life.*

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

'Start with heart': Sounds nice, but what does it mean?

I visited a wonderful human medicine practice that inspires me, and I came across the poster that inspires them. Their personable skills are easier to come by than you think.

While the human-animal bond is something much revered in the veterinary world, the bond between a veterinarian and a pet owner is just as important.

I was recently at the Cleveland Clinic, a major human medical facility headquartered in Ohio with a location in Weston, Florida. Despite the fact that my interactions with staff were often brief and I'd meet multiple caregivers in a day, I was impressed with the people skills of the doctors and nurses. Personal interaction with patients was a focus—and it showed.

My experience at this hospital set me to wondering: In an increasingly uncivil society, how are people skills engendered? How are they internalized so that they become second nature? After all, not everyone is inviting and compassionate by nature. Can these attributes be developed? Are they skills that can be learned? What kind of effort is required to cultivate them?

Naturally, this got me thinking about the veterinary profession. Anyone who works with people as consumers, including animal caregivers, knows there are frequent times when emotions can get the best of our customers—and of us. The result is often a loss of any real communication, as both sides tend to focus on their own perspective. How can we soothe the savage beast of emotion and prevent flare-ups of anger and fear?

Constant reminders

While walking through the Cleveland Clinic to an appointment, my eye was drawn to a large poster that stood out from the rest. It was titled "Heart" and outlined a few simple steps that help build trust and support in interpersonal relationships. Some are obvious strategies we all know—others not so much. As the poster extolls people every time they read it, "Start with heart."

I've adapted the following steps from this program:

When meeting someone new:

> Introduce yourself with a smile.
> Engage people with active listening.

SIANC/SHUTTERSTOCK.COM

> Let 'em know you're glad to meet 'em.
> Build rapport.

Rapport is especially important, since a relationship with your clients should be built on solid connections. So how exactly do you build rapport—both in that first meeting and over time? Here are some suggestions:

> Be genuine, warm and friendly.
> Show interest in them.
> Compliment them or—better yet—the pet.
> Don't overdo or appear needy.
> Learn to read people. For example, it's important to know when you should say "feces," when you should say "poo-poo" and when you should say "s--t."
> Be sensitive to issues of age, gender and culture.

Things don't always go well

When another person has a concern or a problem, remember it's not always easy to voice disappointment without frustration and anger. Give them a hand.

> Listen to their story attentively.
> Empathize with them. Don't try to minimize the issue, but try to imagine how they feel.
> If the issue has arisen because of something you or your staff did or didn't do, apologize.
> Address their problem by asking what you can do to help or offer a suggestion of what you can do.
> Thank them for being willing to talk and share their issue and ask if there are other concerns.

After thinking these methods through and applying them to your everyday experiences in the veterinary world, the saying "Start with heart" begins to make much more sense. In fact, if you keep at it enough, it might just become second nature. With a good beginning and a little humility, you're on the path to a long and mutually beneficial relationship. It all starts with heart.

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

Start Them
— OFF RIGHT —

Getting a furry friend is an exciting time, but it can also be overwhelming. Each new dog or puppy that visits your clinic gives you the opportunity to start a new conversation about effective parasite protection, helping your clients feel empowered to build healthy habits for their new best friend.

Trifexis®
(spinosad+milbemycin oxime)

START SMART WITH TRIFEXIS

Seize this opportunity right from the start by introducing them to Trifexis® (spinosad + milbemycin oxime). Convenient and effective, just one monthly tablet can protect dogs and puppies from fleas, heartworm disease and intestinal parasites.

LEARN MORE AT TRIFEXIS.COM/STARTSMART

INDICATIONS

Trifexis is indicated for the prevention of heartworm disease (*Dirofilaria immitis*). Trifexis kills fleas and is indicated for the prevention and treatment of flea infestations (*Ctenocephalides felis*), and the treatment and control of adult hookworm (*Ancylostoma caninum*), adult roundworm (*Toxocara canis and Toxascaris leonina*) and adult whipworm (*Trichuris vulpis*) infections in dogs and puppies 8 weeks of age or older and 5 pounds of body weight or greater.

IMPORTANT SAFETY INFORMATION

Serious adverse reactions have been reported following concomitant extra-label use of ivermectin with spinosad alone, one of the components of Trifexis. Treatment with fewer than three monthly doses after the last exposure to mosquitoes may not provide complete heartworm prevention. Prior to administration of Trifexis, dogs should be tested for existing heartworm infection. Use with caution in breeding females. The safe use of Trifexis in breeding males has not been evaluated. Use with caution in dogs with pre-existing epilepsy. The most common adverse reactions reported are vomiting, lethargy, pruritus, anorexia and diarrhea. To ensure heartworm prevention, dogs should be observed for one hour after administration. If vomiting occurs within one hour, redose. Puppies less than 14 weeks of age may experience a higher rate of vomiting. For product information, including complete safety information, see page 32.

Elanco™

Vet students want **business education**, survey shows

This study by the Student AVMA shows that veterinary students want personal finance and business education in school from professors and guest lecturers. Are today's schools doing all they can to make that happen? *By Ori Eizenberg and Michael Dicks, PhD*

For quite some time, the veterinary profession has suspected that students wanted to learn more about personal finance, practice finance and general business acumen. Questions like, "Will students prioritize these topics over other's in their curriculum?" or, "When and how do students want this material delivered?" were still left to the imagination. But look no further, as we now have answers!

The data and its precursors

As a brief background, in 2009, two veterinarians in academia—Donna Harris, DVM, PhD, and James W. Lloyd, DVM, PhD—asked whether schools were willing to teach the nontechnical skills, knowledge and aptitudes required for new graduates to master economic success. Their answer was a resounding yes.[1] Then, in 2012, the Association of American Veterinary Medical Colleges asked when it was best to teach those skills during veterinary school. The organization even created a suggested syllabus for nonclinical skills and offered suggestions for finding the perfect veterinary school financial adviser.[2]

But we didn't feel like this was enough—the profession needed more data. So, recently, the Student AVMA (SAVMA), with the help of the AVMA's Veterinary Economics Division and the Veterinary Business Management Association, went hunting for more answers. What we found was quite interesting.

The data comes from a May 2017 survey to all students attending AVMA-accredited institutions. Results from the 3,060 respondents showed a clear demand for financial literacy, with about three-quarters of students agreeing that a required finance course was a good use of their time. As for when and how they'd like these classes taught, the majority said they wanted it every year, face-to-face and incorporated into the curriculum. That's right: not online or via weekend seminars, but in the good ol' classroom.

On the other hand, although students felt most deficient in investing and financial planning, contract negotiation, and marketing themselves after graduation, they didn't think those skills would be important to their future employers. Thanks to this survey, we have concrete data that veterinary students want—and will prioritize—financial literacy.

We've got data—now what?

First, SAVMA plans to make financial education a core value and hopes the AVMA Council on Education will consider amending accreditation standards to include business and financial classes. Next, SAVMA plans to send letters to each veterinary school that participated with full survey results and tailored data using the school's own students' input. Deans will be able to see what their students are thinking and craft a curriculum that answers the needs of their own cohort.

We live in a world of rising tuition and increased competition in the market for veterinary medicine, where financial stability for graduates is no longer a guarantee. Making the right financial decisions is crucial for better mental health and a thriving profession. It might not be the duty of schools to teach students financial literacy, but it *is* their duty to ensure new graduates become high-performing veterinarians. For most, school is the last bus stop before adulthood and as such that responsibility falls on the proverbial shoulders of academia.

References

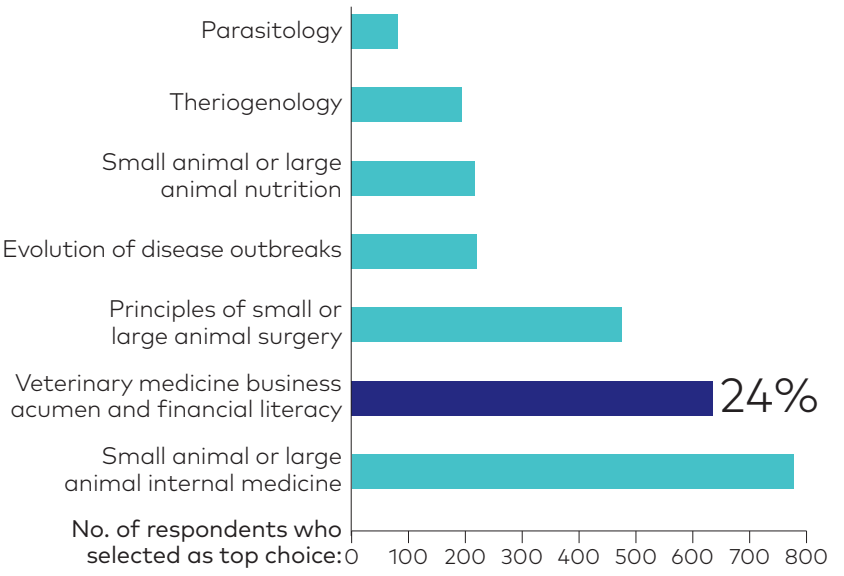
1. Harris D. *Association of American Veterinary Medical Colleges Student Debt Initiative Report*. 2012.
2. Harris D, Lloyd JW. Changes in teaching of nontechnical kills, knowledge, aptitudes and attitudes at US colleges and schools of veterinary medicine between 1999 and 2009. *J Am Vet Med Assoc* 2011;239:6;762-766.

Ori Eizenberg is Veterinary Economics Officer of the Student AVMA and a student at St. George's University School of Veterinary Medicine in Grenada. Dr. Michael Dicks is director of the AVMA's Veterinary Economics Division.

TABLE 1

Top 7 choices for free lunch hour topic

What would veterinary students cough up a lunch break for? Financial literacy was defeated only by internal medicine.

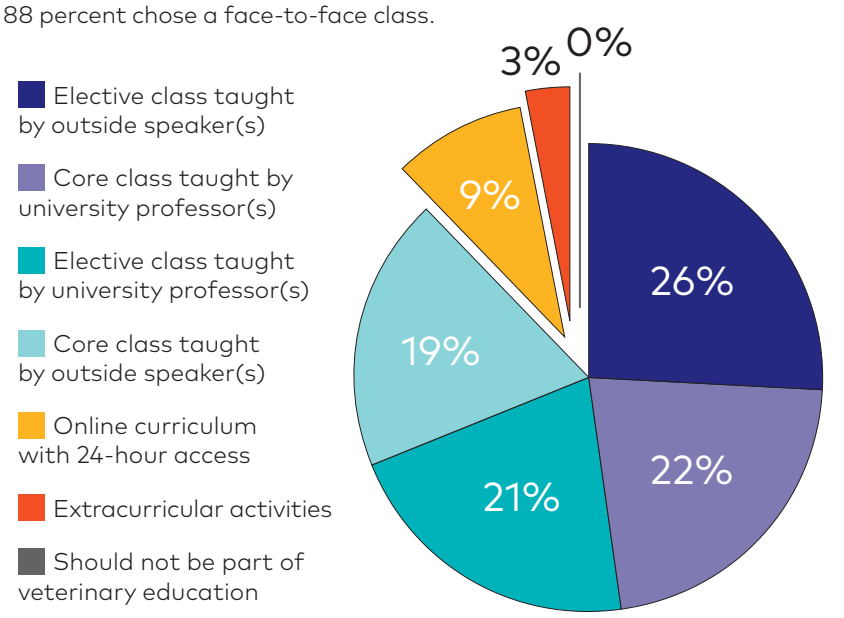


Source: SAVMA, AVMA

TABLE 2

Figuring out formats for business classes

Veterinary students were given multiple mediums to choose from, but 88 percent chose a face-to-face class.



Source: SAVMA, AVMA

MEDICINE | Exotics

What does the (pet) fox say?

Your client just bought a pet fox (is that even legal?) and wants you to see it. Here's everything you need to know. *By Sarah J. Wooten, DVM*

Are pet foxes a thing? My daughter sure thinks so. (FYI, she's a passionate 15-year-old who hates taking "no" for an answer, so methinks if she wants a fox, she'll get one—someday.)

I've been seeing domestic fox videos pop up in my Facebook feed, and I know for a fact that celeb vet Evan Antin smuggled a fennec into his dorm room while at Colorado State University, so I thought it was time to investigate this phenomenon. Thankfully, Jenifer Chatfield, DVM, DACZM, and Olivia Petritz, DVM, DACZM, are on board with two different perspectives on all things pet fox—and what to do if one of these adorable canids shows up in your office.

Question: Foxes, eh?

Dr. Chatfield: Domesticated foxes have been a thing for a while. They haven't reached fad status like hedgehogs yet, but they're lovely creatures and, with proper care and knowledge, can make good pets. There are different kinds of domesticated foxes that people can purchase for their own, and they're all a little bit different. Fennecs are super-cute and communicative; red foxes are more reserved. And if you purchase a Siberian fox, made famous by a 2011 *National Geographic* article, the money goes for continued research at the Institute of Cytology and Genetics in Novosibirsk, Russia.

Q: What do I do if somebody calls and wants me to see their pet fox?

Dr. Chatfield: Don't panic! You will be excited. Your staff will be excited. The clinic cat will be excited. Even though everybody will be excited, you'll need to be in control. Before the client even gets to the hospital, you need to:

1) Talk to your staff—this is not a dog or a cat; it's a fox. Be cautious and use standard precautions.[1] Foxes are dang cute, and it's easy to forget that they have teeth and an opinion.

2) Phone a friend—talk with someone who has experience. If you don't have a friend to call, get on the internet. The *Merck Veterinary Manual* has some great information.

Q: What states are they legal in? Where do we go to find out about regulatory issues?

Dr. Chatfield: Foxes are typically governed under the wildlife regulatory body. It's legal to own foxes in many states, and a simple permit may be required. Other states have banned exotic pet ownership altogether, so select your state of residence wisely! How-

PRAPHAB LOUILARPPRASERT/SHUTTERSTOCK.COM

dvm360.com/medicine
Find interactive cases, expert answers to your clinical questions, journal summaries and more.

ever, banned or not, this doesn't make it illegal for you to treat the animal or advise the client. Veterinarians are not issued judicial robes upon graduation. Remember that your role is to keep people and their animals safe, not to function as the pet police. Encourage clients to obtain and hold the right permits for their exotic pets, but please do not withhold care from a sick animal simply because you disagree with the owner.

Dr. Petritz: This is complicated, and laws are constantly changing. According to Faithful Foxes' website (faithfulfoxes.com), foxes are illegal to own as pets in several states. I'm assuming this is because they're considered a rabies-vector species. Check your state and local governments (and recommend that clients consult their homeowners associations, if applicable) for regulations regarding exotic pets. Also, keep in mind that most native wildlife—which includes some species of fox, but not the fennec—are illegal to keep as pets in most states without proper permits. You can visit animallaw.info for more information.

Q: How can general practice veterinarians advise their clients on nutrition and feeding?

Dr. Chatfield: Foxes are omnivorous, and you can feed them commercial dog food. Ask the client what the parents were being fed or what the breeder recommended to feed if you want to gather more information before making a recommendation.

Dr. Petritz: There are several websites that discuss fox ownership (in addition to Faithful Foxes' website, mentioned above, see fennecfoxes.net), and the authors offer some honest recommendations about fox ownership. In other words, they're blunt about saying it's not for everyone.

Q: What are your recommendations for wellness care?

Dr. Chatfield: Foxes should be vaccinated with the canine rabies vaccines, and kits should be 16 weeks old before they're vaccinated for rabies. I recommend keeping them on a one-year rabies vaccine schedule. If the fox bites someone, the public health department won't recognize the vaccine in most cases and the fox will be treated as unvaccinated, so advise your client accordingly. It doesn't mean the vaccine doesn't work in these species; it just hasn't been tested and shown to be effective.

Vaccinate against distemper and parvovirus on the same vaccine schedule as puppies and dogs (eight-, 12- and 16-week boosters; one-year boosters for adults), but don't use the modified live vaccine because it can potentiate disease. Use the killed distemper vaccine and stay on a one-year vaccination schedule. For intestinal deworming, use good ol' pyrantel pamoate—the dog dosage—two doses two weeks apart. Unless clinically indicated, I avoid fenbendazole as an empirical deworming choice as some exotic species have demonstrated significant sensitivity. Foxes can get heartworms and you can dispense heartworm prevention extralabel. Topical preparations of flea and tick medications also can be used off label.

Q: Any behavioral recommendations?

Dr. Chatfield: While they can be trained to be awake during the day, foxes are nocturnal animals. I recommend telling clients to crate-train their foxes and not let them roam free in the house at night, because while they're friendly, their behavior is still unpredictable. Like a cat, a pet fox should also have his own space away from people.

Q: What about spaying and neutering?

Dr. Chatfield: Yes, you can spay and neuter foxes just like dogs and cats, and it's recommended to spay or neuter at 6 months of age. Foxes do have a scent, and it's reported to be more intense than ferret musk. If you neuter them, the smell is less.

Q: What about anesthesia recommendations?

Dr. Chatfield: *Fowler's Zoo and Wild Animal Medicine* has great info for veterinary care providers, including recommended anesthetic protocols for some fox species.[2] It also has some clinical pathology references.

Q: What if the fox bites somebody?

Dr. Petritz: I would recommend that if a veterinarian is involved with a fox bite (be it a wild or a pet fox), they should contact their local public health officer. It's prudent for the owner to be aware that if foxes are illegal to own as pets in that state or city, reporting a bite to a public health officer may result in confiscation of the animal. Even if a fox has been currently vaccinated for rabies with a standard canine or feline rabies vaccination, this is not approved for use in any fox species in the United States. Therefore public health officials may consider that animal not fully vaccinated. This is also true for most zoo mammals that are vaccinated for rabies off label—these cases are often handled on a case-by-case basis by the veterinarian in charge and local public health officers. Side note: One of the oral rabies vaccines (bait) is approved for use in wild foxes in the U.S., but that is not recommended for use in pet or zoo-housed foxes. Still, it's something to keep in mind.

Dr. Chatfield: Do the same thing you do as with any other bite. Report the bite to the public health authority or animal control. Tell your bitten, bleeding client, "I don't treat people, but you should see someone who does. Go see your medical provider. I need to report this bite."

Q: Any final thoughts on foxes as pets?

Dr. Chatfield: If you find yourself treating these guys, consider joining the Association of Exotic Mammal Veterinarians (AEMV) for extra support. Second, while it's not our job to judge whether or not it's right for a client to have a pet fox, it is our job to provide adequate healthcare and education to that client. We're not the police; we're veterinarians, and with the right mindset we can help clients learn to care for and live safely with their chosen creature—even if it's a fox.

References

1. Center for Disease Control [database online]. Atlanta, Georgia: Centers for Disease Control and Prevention, 2016. Available at: https://www.cdc.gov/infectioncontrol/basics/standard-precautions.html.

2. Padilla LR, Hilton CD. Canidae. In: Miller RE, Fowler M., eds. *Fowler's Zoo and Wild Animal Medicine*. Vol. 8. Philadelphia, Pennsylvania: Saunders, 2014;457-466.

Dr. Sarah J. Wooten divides her professional time between small animal practice in Greeley, Colorado; public speaking on associate issues, leadership and client communication; and writing.

“

Seriously, if you’re not recommending Double Defense, you’re leaving your patients half-protected from heartworm.

DOUBLE DEFENSE
HEARTWORM PROTOCOL
A NEW STANDARD OF CARE
VECTRA® 3D AND A HEARTWORM PREVENTIVE
™

Chelsea Haynie
Veterinary Technician
Memphis, TN

Double Defense Uses:

- ✓ Vectra® 3D for Dogs which has a **99.1%** anti-feeding efficacy against mosquitoes[1]
- ✓ A heartworm preventive to kill heartworm larvae

Veterinary technicians are discovering you can give dogs comprehensive heartworm protection with **Double Defense**. It just makes sense.

FightHeartwormNow.com

DO NOT USE VECTRA® 3D ON CATS

1. McCall, J.W., Hodgkins, E., Varloud, M., Mansour, A., DiCosty, U., McCall, S., Carmichael, J., Carson, B., & Carter, J. (2016, August). *Blocking of the transmission of Dirofilaria immitis L3 (JYD-34 ML resistant strain) from infected mosquitoes to dogs and prevention of infection in dogs treated topically with dinotefuran-permethrin-pyriproxyfen and orally with milbemycin oxime alone or in combination.* In 61st Annual Meeting Proceedings: American Association of Veterinary Parasitologists- 61st Annual Meeting. San Antonio, TX. Abstract No. 21, 61.

The ABCs of veterinary dentistry: 'N' is for no

By nature of the alphabet, we must get through all of the noes in veterinary dentistry before we can reach the yeses—but that doesn't mean you won't feel positively inspired to better your dental practices after reading. *By Jan Bellows, DVM, DAVDC, DABVP, FAVD*

As veterinarians, we respond to clinical signs in our patients and do something about them. But knowing what not to do is just as important. Here are 14 things to say no to in veterinary dentistry:

1. Say no to treatment estimates related to oral malodor before you've examined the entire mouth (including every tooth).

Quoting a fee (or even a fee range) for "bad breath" (halitosis) before you know the cause may lead to a disgruntled client and an untreated patient once you discover that a dozen teeth suffer from advanced periodontal disease and need to be extracted. Instead, let your client know you'll call while the pet is anesthetized to discuss what care the pet needs after dental scaling, probing and full-mouth intraoral radiographs.

2. Say no to dental procedures without general anesthesia.

Anesthesia allows the practitioner and assistants to carry out dental procedures safely and effectively, minimizing the risk of injury to the team, equipment and patient. The American Veterinary Dental College (AVDC) launched a website to deter pet owners and veterinarians from considering anesthesia-free dental cleanings in any context. It advises pet owners that "anesthesia-free dental cleanings provide no benefit to your pet and do not prevent periodontal disease at any level. In fact, it gives you a false sense of security as a pet owner that because the teeth look whiter they are healthier."

A similar position statement was ratified by the American Veterinary Medical Association: "When procedures such as periodontal probing, intraoral radiography, dental scaling, and dental extraction are justified by the oral examination, they should be performed under anesthesia."

3. Say no to dental procedures without an examination.

In some veterinary clinics, the pet owner calls the office to arrange a drop-off for a teeth cleaning because the pet has oral malodor. But if your dental assistant only removes the pet's plaque and tartar from the crowns without a tooth-by-tooth examination, you've accomplished little besides the cosmetic removal of crown debris. Oral malodor occurs secondary to food putrefying in periodontal pockets. Unless you treat the pockets (through deep scaling and root planing, gingivectomy or placement of local antimicrobials into cleaned pockets) and institute home care, malodor will soon return and periodontal disease will progress.

A healthier way to approach dentistry with long-term positive results is to examine the conscious patient first (including the oral cavity), followed by a tooth-by-tooth examination under general anesthesia (with probing and intraoral radiology). If the tooth and support structures are in good shape, move on to the next tooth. If not, diagnose the pathology and formulate a treatment and prevention plan (Figures 1A-1D).

4. Say no to the following phrase: "The patient is here for a dental today ... "

When properly performed, what we do is a comprehensive oral prevention, assessment and treatment visit. If you regularly vocalize all of these terms, the client develops a better understanding of and appreciation for what's involved. Note that prevention is listed first. Stressing prevention first will hopefully result in less future discomfort and fewer extractions.

5. Say no to too many dental cases per veterinarian per day.

Once the entire team embraces the comprehensive oral prevention, assessment and treatment concept, everyone wins—especially the patient. And with 42 "patients" in every normal dog's mouth and 30 in every normal cat's, you'll need to give yourself a lot of time to properly treat the cause of oral malodor.

6. Say no to dental procedures without patient warming systems.

Small animal dental procedures are commonly conducted in an air-conditioned environment, which decreases the patient's core body temperature over time. Dental diagnostic and treatment procedures can be lengthy, and managing the patient's core body temperature is recognized as one of the best ways

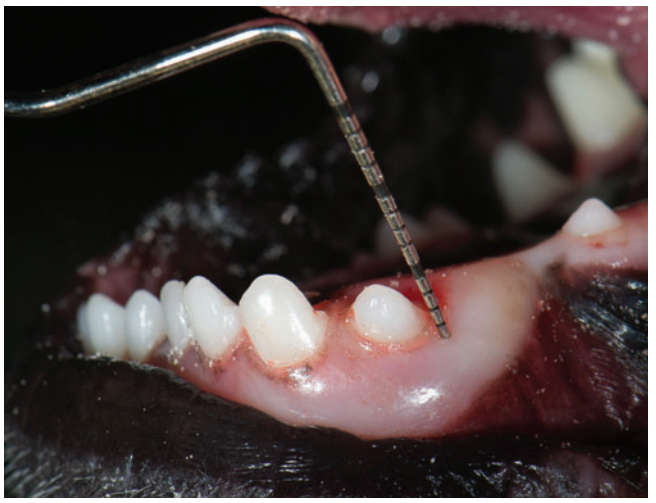


Figure 1A. Periodontal probe before insertion into a dog's partially erupted left mandibular canine.

Figure 1B. 10-mm periodontal pocket; gingivectomy, mucogingival surgery or extraction indicated.

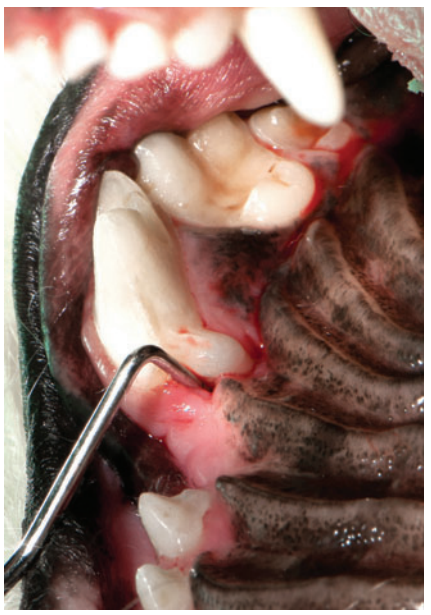


Figure 1C. 12-mm probing depth along the mesial aspects of the left maxillary fourth premolar; extraction indicated.

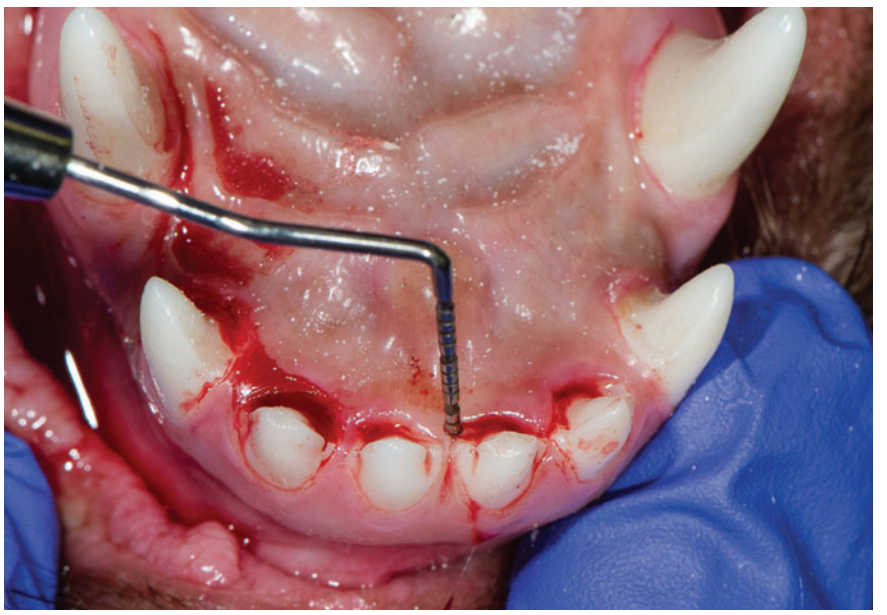


Figure 1D. Bleeding on probing with 3-mm periodontal pockets; root planing and instillation of local antibiotics indicated.

to minimize the risk of an anesthetic complication. Careful monitoring and treatment of falling body temperature can help you avoid significant physiological and surgical complications as well.

The patient's temperature is monitored through esophageal or rectal probes, with the former being a more accurate representation of core body temperature. Provide a safe method of thermal support such as forced air and radiant heating systems (Figure 2). You must take care to avoid thermal injury to the skin with other types of heating devices.

7. Say no to dental diagnostics and extractions without full-mouth radiographs.

Scaling plaque and calculus from crowns and probing pockets only goes so far. At least 60% of the patient's teeth lie below the gum line. Intraoral radiographs are thus essential to help you evaluate these areas (Figures 3A-3D).

Figure 2. Radiant energy warming device (Hot Dog Patient Warming System).

8. Say no to veterinary technician extractions.

Some state practice acts allow technicians to extract teeth; however, veterinarians are the only professionals allowed to perform animal surgery. Surgery is defined as opening a body part to treat disease using instruments. Operative dentistry is surgery. Our veterinary degrees specify veterinary medicine, surgery and dentistry, and we have the most knowledge and experience regarding our patients' anatomy and physiology and how their tissues react to surgery. None of us would allow a human dental assistant or hygienist to extract our teeth. Why should it be different for veterinary patients?

9. Say no to unsterilized and dull instruments.

Can you imagine your dentist opening up a drawer and rummaging through the instruments inside before dipping them in cold sterile solution to extract your tooth? Sterilized packs for

ALL PHOTOS COURTESY OF DR. JAN BELLOWS

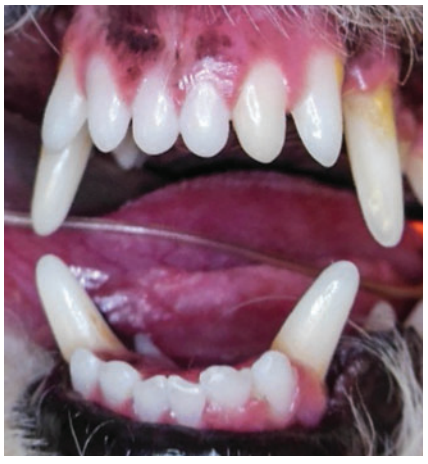


Figure 3A. Seemingly normal incisors in a canine patient.

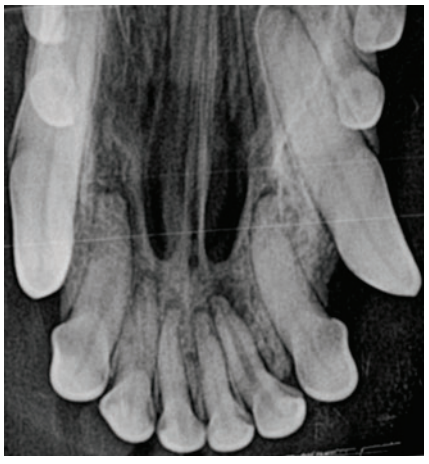


Figure 3B. Enlarged root canal and periapical lucency consistent with a nonvital tooth in the canine patient from Figure 3A; root canal therapy or extraction is indicated.

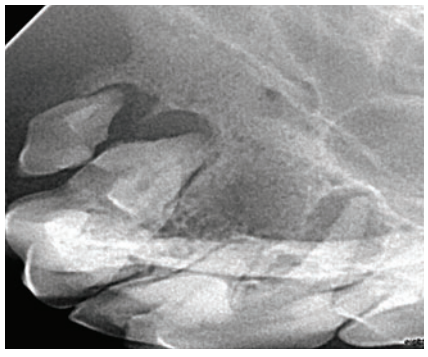


Figure 3C. Advanced periodontal disease in the canine patient from Figure 3A affecting the apices of the right maxillary fourth premolar and the first and second molars; extractions indicated.

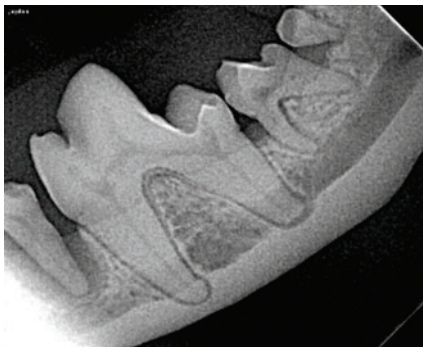


Figure 3D. Advanced periodontal disease in the canine patient from 3A affecting the left mandibular fourth premolar and second and third molars; extractions indicated. Stage 3 periodontal disease affecting the left mandibular first molar; root planing coupled with home care or extraction indicated.

diagnostics (periodontal probe, mirror and curette), extractions (separate packs for feline and small, medium and large dogs) and oral surgery make great sense. To increase efficiency, keep all of the instruments you need for a specific procedure together in one sterile pouch or cassette. Charging a "sterile surgical pack fee" easily covers the expense of additional instruments and sterilization.

Your instruments need to be sharp, too. Before sterilization, sharpen your curettes and your wing-tipped and periosteal elevators with an oiled sharpening stone (Figures 4A-4E).

10. Say no to spring-loaded mouth gags.

You can insert a mouth prop or lap sponge between the maxillary and mandibular canines or between the cheek teeth to keep the mouth open during dental procedures. Placing spring-loaded gags between canines is not recommended because of potential iatrogenic damage to the teeth, temporomandibular articulation and decreased maxillary blood flow to the brain. In cats, this decreased cerebral blood flow may result in neurological impairment, including blindness. Alternatively, cut endotracheal tubes or syringes will prop the mouth open while allowing for flexibility (Figure 5).

11. Say no to tooth extractions without regional anesthesia and postoperative pain medication.

No animals under our care should experience pain when it can be prevented. The benefits of regional anesthesia include decreased pain during and after surgical procedures, decreased risk of vagally mediated reflex bradycardia, lower inhalant requirements, and a level plane of general anesthesia reducing the variation of anesthetic depth when painful stimulation occurs.

The three most common regional blocks in veterinary dentistry are the caudal maxillary, infraorbital and caudal mandibular blocks. Frequently administered single-agent local anesthetics include lidocaine and bupivacaine. Many practices use a combination of 0.5% bupivacaine hydrochloride with epinephrine (Marcaine) (1 mg/kg) and lidocaine 2% (1 mg/kg) in a 4:1 ratio. Mixing 0.8 ml of bupivacaine with 0.2 ml of lidocaine in the same tuberculin syringe accomplishes the 4:1 ratio. The recommended volume for regional anesthesia is 0.1-0.3 ml per injection site. Maximum patient dosage of this mixture is 0.2 ml/kg bupivacaine, or approximately 0.25 ml per jaw quadrant (in case all quadrants need anesthesia for a 5-kg cat or dog).

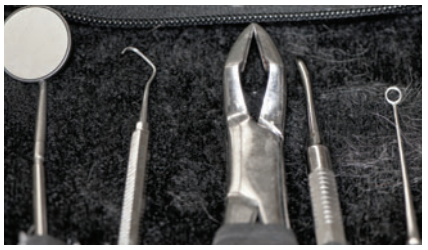


Figure 4A. Unsterile surgical instruments; note the dog hairs.

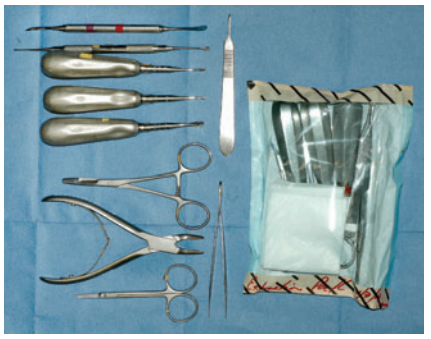


Figure 4B. Instruments in the author's extraction pack.

Figure 4C. Cassette with oral surgical instruments.

Figure 4D. Sharpening stone and oil.

Another option is to mix small volumes of an opioid with a local anesthetic. Buprenorphine has been shown to extend anesthetic duration up to threefold compared with bupivacaine alone. Small volumes of buprenorphine 0.003 mg/kg can be mixed with bupivacaine hydrochloride in the patient's regional block volume.

All dogs and cats should receive postoperative pain relief medication after extractions for at least three days.

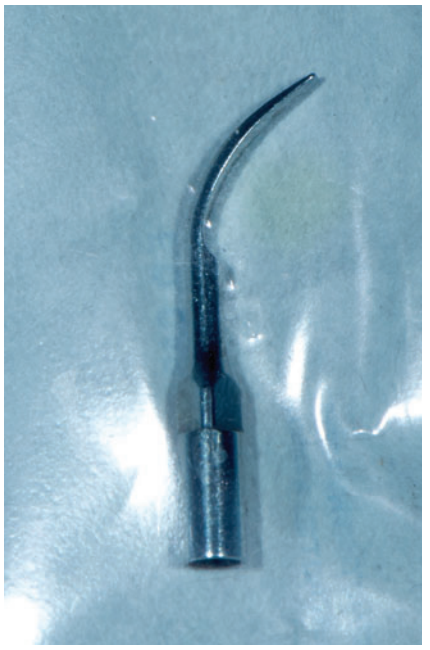


Figure 4E. Sterile piezo ultrasonic tip.

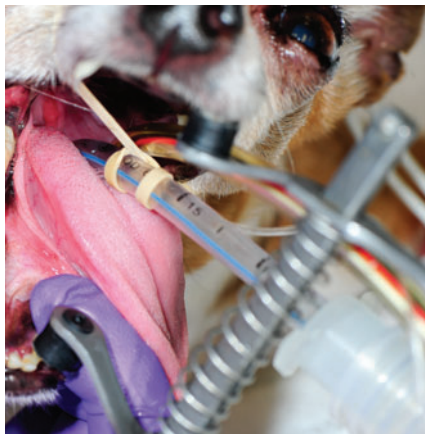


Figure 5A. Don't use spring-loaded mouth gags like this one. They can cause overextension of the temporomandibular joint.

Figure 5B. Don't overextend the temporomandibular joint as in this image with a cut syringe.

Figure 6. Injection of local antibiotic into a cleaned stage 2 periodontal pocket.

12. Say no to systemic antibiotics—except in cases of advanced periodontal disease or in compromised veterinary patients.

Forty years ago, the standard of patient care included giving a penicillin-streptomycin injection after every ovariohysterectomy. Once the science proved this wasn't necessary, the practice stopped. Similarly, systemic antibiotics are not indicated before, during or after most veterinary dental procedures, other than cases of multiple extractions for advanced periodontal disease where we are removing the cause of the problem (such as plaque, tartar and periodontally affected teeth).

However, there does appear to be a place for local administration of antimicrobials—especially in cleaned periodontal pockets less than 5 mm (Figure 6).

13. Say no to telling your clients to brush their pet's teeth every day. (Really!)

Wait. Did you read that right? No to the gold standard of tooth brushing? What's wrong with tooth brushing? Simple: Virtually no one does it twice a day, or once a day, or even every other day, and anything less is worthless. So instead of continuing to push brushing, recommend twice-daily wipes, cotton-tipped applicators (in cats) rubbed along the gingival margin, and accepted Veterinary Oral Health Council products to help decrease the formation of plaque and tartar.

14. Say no to forgetting to schedule follow-up dental examinations.

Removing the plaque and tartar from crown and root surfaces and extracting teeth affected by advanced periodontal disease without periodic home care monitoring makes little sense. Plaque and tartar will soon return and inflame the gingiva. After the comprehensive oral prevention, assessment and treatment visit, schedule a follow-up appointment to discuss a tailored plaque control program, including monthly to quarterly rechecks, to monitor compliance and efficacy.

Now that the negativity of saying no is out of the way, I look forward to getting to "Y" ("Say yes to … ") in a future piece.

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

One thing you're getting wrong in feline thoracic imaging

According to imaging expert Dr. Rachel Pollard, a radiograph alone won't give you the answer you're looking for when you suspect a veterinary patient's heart is abnormal.

The biggest single problem with feline thoracic imaging? According to veterinary imaging expert and Fetch dvm360 conference speaker Rachel Pollard, DVM, PhD, DACVR, it's interpreting whether or not the heart is abnormal. And it's not just a problem for general practice veterinarians—radiologists struggle with this too.

"My personal opinion is that unless the patient's heart is enormous on a set of radiographs, it's almost impossible to know for sure if it's abnormal or not," Dr. Pollard says. Her advice? Weigh the findings from a physical exam as heavily as you do radiographic findings. If there's any question whatsoever, she says you'll have to do an echocardiogram. "That's just the only way to know," Dr. Pollard explains.

Want to hear more in Dr. Pollard's own words? Go to **dvm350.com/pollardimaging**.

EQUINE | Surgery

A guide to **regional analgesia of the head** in equine patients

With the right tools and technique, you can avoid general anesthesia and still provide adequate analgesia during surgery. Here's your guide to several nerve blocks in your veterinary equine patients. *By Nick Carlson, DVM, DACVS-LA, American College of Veterinary Surgeons*

Appropriate regional analgesia is a cornerstone for successful standing surgery in horses. When combined with an appropriate sedative protocol, many surgical procedures can now be performed standing, avoiding the cost and risks associated with general anesthesia. Performing standing surgical procedures of the head provides improved visualization and hemostasis, reduces morbidity and eliminates the need for specialized equipment and facilities.

Read on to discover how to perform regional blocks on the equine head, where to expect analgesia, the potential complications that you may encounter, and examples of surgical procedures and diagnostic techniques that use the described blocks.

Patient prep

A sterile prep is recommended, particularly for the maxillary and inferior alveolar nerve blocks because of the depth of the nerve block and limited drainage these sites provide should an infection set in within the region that is injected. Special care is warranted to keep disinfectant from contacting the patient'scornea.

Maxillary nerve block

The maxillary nerve block is a mainstay for performing dental extractions in the upper arcades. It blocks the upper incisors, canines, premolars and molars and is an essential block for standing sinus surgery in horses. I've also used it for standing repair of incisive and rostral maxillary fractures with wire fixation. Other uses include localization of neuropathy for horses that are head shakers and to aid in the repair of extensive lacerations involving the upper lips or face dorsal to the facial crest and rostral to the eye.

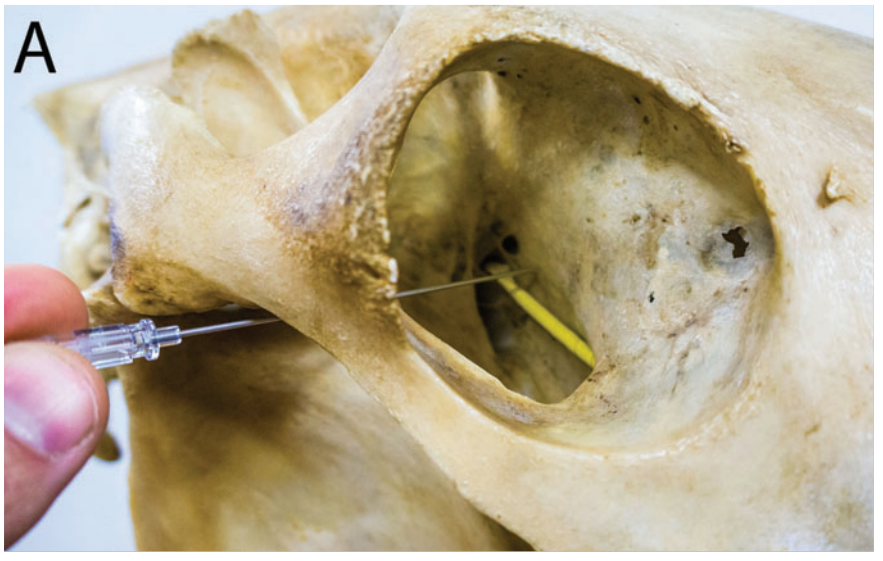


Figure 1A. Performing a maxillary nerve block by placing a spinal needle below the zygomatic process to block the maxillary nerve.

Multiple techniques are described. Many describe placing an 18- to 22-ga, 3.5-in (9-cm) spinal needle toward the maxillary nerve as it enters the pterygopalatine fossa at the maxillary foramen. One technique places the spinal needle ventral to the zygomatic process at the level of the caudal orbit, advancing rostromedially until hitting bone (Figure 1A).[1]

The other technique places the needle dorsal to the union of the zygomatic bone and zygomatic process of the frontal bone angled ventrally 20 degrees from the horizontal plane until it contacts bone (Figure 1B).[1]

In both cases, 10 to 15 ml of local anesthetic is deposited, and analgesia should occur in 15 to 20 minutes. The use of ultrasound has been advocated for this block to improve accuracy of needle placement.[2] Both techniques pose the risk of vessel laceration and exophthalmos, so I do

ALL PHOTOS COURTESY OF DR. NICK CARLSON

not advocate them personally.

My preferred method is placing a 1.5-in (3.8-cm), 20- to 22-ga needle ventral to the zygomatic process at the level of the caudal aspect of the orbit and burying the needle to allow it to pass through the masseter muscle and into the extraperiorbital fat (Figure 2).[3]

Inject a larger volume (20 to 30 ml) of local anesthetic. You can ensure proper placement by observing the filling of the supraorbital pouch. Here the needle is placed away from large vessels, resulting in fewer complications.

The most frequently encountered complication with a maxillary nerve block is development of a hematoma or an abscess at the injection site, leading to exophthalmos that may require a temporary tarsorrhaphy or frequent application of eye ointment by the owner until resolved. Other complications include temporary blindness, pupil dilation or orbital protrusion from loss of function of the optic nerve and oculomotor function.[1] Using a shorter needle and placing the block in the supraorbital fat pad minimizes most of these complications.

Figure 1B. An alternative method to block the maxillary nerve by placing the needle above the zygomatic bone.

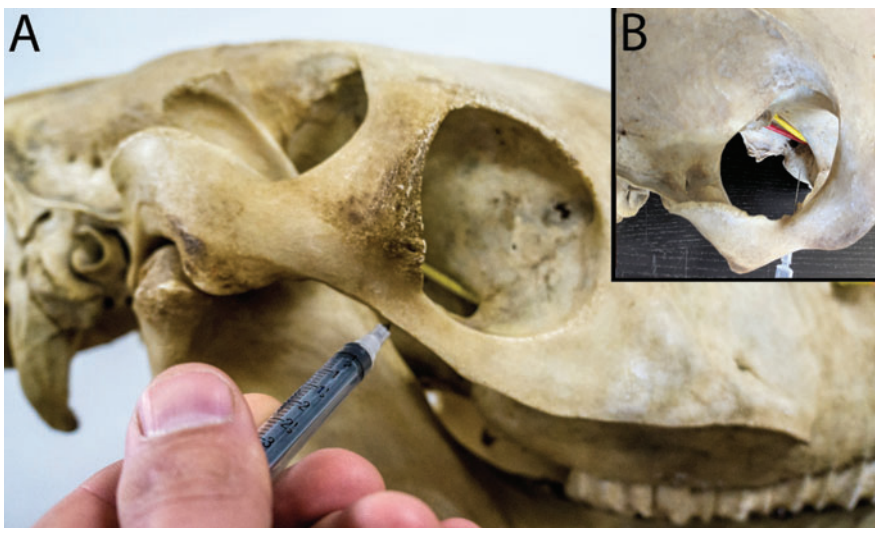


Figure 2. A: A safer approach to blocking the maxillary nerve using a 1.5-in, 20-ga needle. Needle placement and trajectory mimics the traditional maxillary nerve block with a spinal needle demonstrated in Figure 1A. Inset—B: This places the needle in the periorbital fat away from large vasculature.

Figure 3. An example of hand placement to identify the infraorbital foramen to perform an infraorbital nerve block. The thumb is placed on the rostral facial crest and the middle finger in the nasal notch. This will place the index figure near the foramen, which is identified as a depression under the skin.

Infraorbital nerve block

The infraorbital nerve is an extension of the maxillary nerve as it travels through the infraorbital canal. The traditionally described infraorbital block will only block the incisors and premolars but will not fully anesthetize the molars or paranasal sinuses. Recently, it has been shown that a larger volume (10 ml versus 3 to 5 ml) should travel retrograde through the canal to fully anesthetize these structures, similar to a maxillary nerve block.[4]

To locate the left foramen, place the thumb of your left hand on the rostralmost aspect of the facial crest and the middle finger of the same hand in the nasomaxillary notch. The index finger of the left hand should then fall over the foramen (Figure 3).

In some horses, the ventral edge of the levator nasolabialis muscle requires elevation to expose the palpable notch under the skin.[1] Insert a 20- to 22-ga, 1.5-in (7.63-cm) needle through the skin 1 to 2 cm rostral to the palpable notch, and, if possible, fully bury the needle into the canal. Inject a volume of 5 to 10 ml of local anesthetic. Confirmation of proper needle placement is moderate pressure during the injection and lack of development of a subcutaneous bleb during injection.

Caution is advised during block placement as violent objection by the horse can occur despite heavy sedation and restraint if the needle contacts the nerve. A small bleb of local anesthesia can be placed over the entrance of the foramen to improve the horse's tolerance, but this makes palpation of the foramen difficult.

Few complications with use of this block are described. Theoretically, the nerve could be lacerated by the needle as it is placed into the foramen leading to neuroma formation or infection in the canal and subsequent neuritis.

If you are extracting maxillary incisors, combining an infraorbital nerve block with 5 ml of local anesthetic at the incisive canal on the midline of the rostral incisive bone where the lip and gingival tissue meet will enhance the infraorbital block.

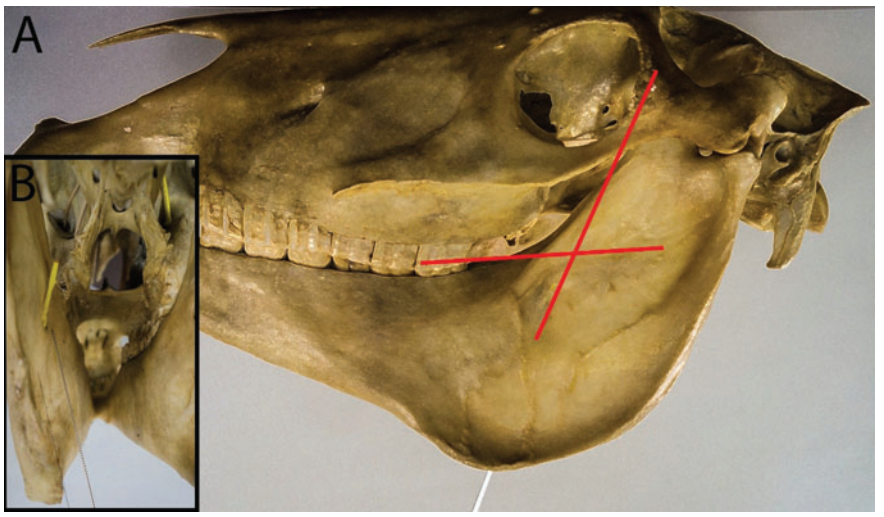


Figure 4. A: The blind technique for the inferior alveolar nerve block. The needle is guided to a target created by intersecting a vertical line drawn behind the caudal rim of the orbit and a horizontal line following the trajectory of the lower arcade's occlusal surface (red lines). The needle (white line) is advanced on the inside of the mandible with an effort made to scrape against the periosteum to ensure the needle does not migrate too axially. Inset—B. An example of needle placement adjacent to the inferior alveolar nerve.

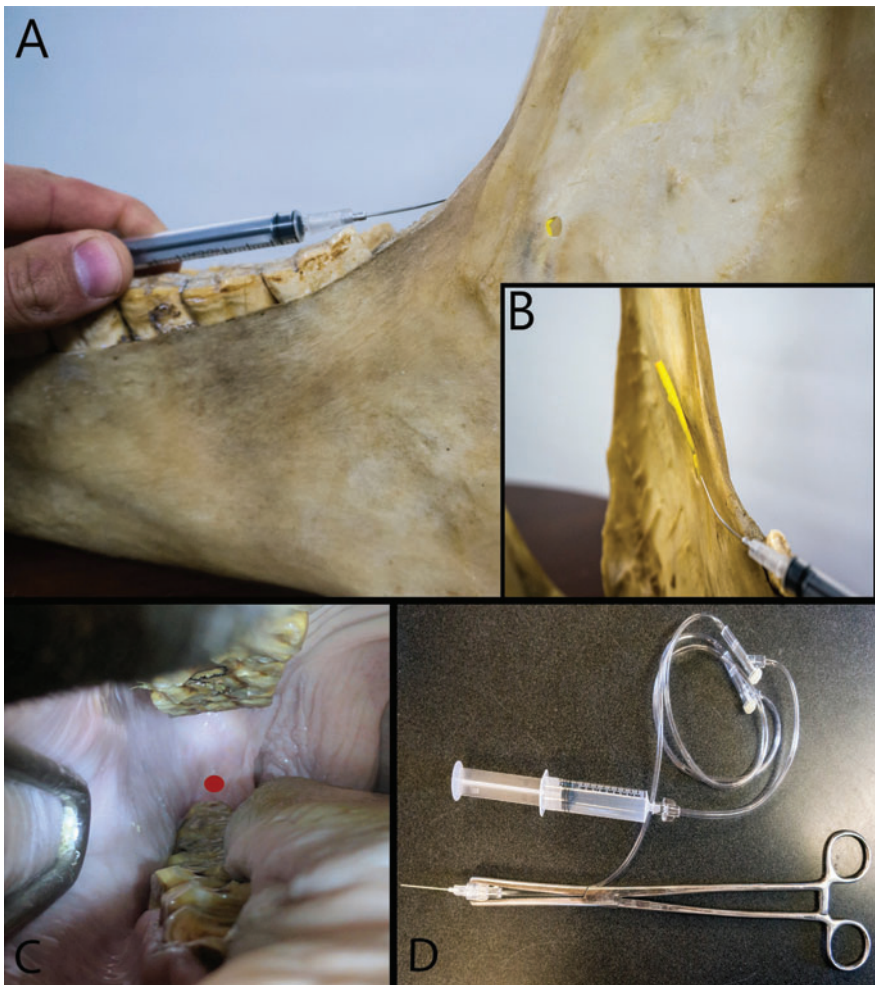


Figure 5. A—Needle placement for the intraoral inferior alveolar nerve block. The needle is placed on the medial aspect of the mandible in the soft tissue caudal to the last molar at the level of the molar's occlusal surface. B—An image showing the needle's placement over the nerve's insertion into the mandible. C—An intraoral image with the red dot depicting the site for needle placement. D—Tools used to perform the block on a horse: 12-in-long grasping forceps; 20-ga, 1.5-in needle; extension set and 12-ml syringe.

Inferior alveolar nerve block (mandibular nerve block)

The inferior alveolar nerve innervates the lower arcade, mandible and lower lips. Blocking the inferior alveolar nerve is primarily used to extract premolars and molars in the lower arcade. It can also be used for débridement of deep periodontal pocketing associated with diastemas, débridement of mandibular drainage tracks, and wire fixation of rostrally located mandibular fractures in standing horses.

Two techniques exist for blocking the inferior alveolar nerve. The traditional blind technique is performed by guiding a long (8- to 10-in) 18- to 20-ga spinal needle on the medial mandible to the mandibular foramen and depositing 20 to 30 ml of local anesthetic. The mandibular foramen is estimated by the intersection of a vertical line drawn from the caudal aspect of the orbit and a horizontal line parallel to the occlusal surface of the lower cheek teeth (Figure 4).[1]

Intermittent contact with the periosteum during needle advancement ensures the needle does not deviate axially away from the mandible that could place the needle in the tongue base, oral cavity or soft palate.

More recently, an intraoral approach was reported to anesthetize the inferior alveolar nerve. To perform this nerve block, 12-in-long locking clamp pliers are used to secure a 20-ga, 1.5-in (3.8-cm) needle bent 20 to 30 degrees attached to an extension set. The target for injection is the mucosa just caudal and above the table surface of the third mandibular molar and lateral to the palate.[5] Before performing the block, a thorough lavage of the mouth is performed, followed by packing a gauze soaked in local anesthetic into the injection site for two to three minutes. The site is then prepped by repeat application of chlorhexidine-soaked gauze for a contact time of five minutes. The needle is placed and buried at the injection site, trying to stay close to the medial aspect of the mandible (Figure 5).

About 5 to 7 ml of local anesthetic is injected. This is now the method I prefer to perform this block.

Complications are more common when using the blind technique and include block failure from improper placement, hematoma or abscess formation, and horse-inflicted trauma to the tongue from inadvertent blocking of the lingual nerve. Some advocate using shorter-acting anesthetics, withholding feed or using a mouth gag until the anesthetic has fully worn off to avoid potential trauma to the tongue by inadvertent blocking of the lingual nerve.

Mental nerve block

Like the infraorbital nerve, the mental nerve is a continuation of its parent nerve (inferior alveolar nerve). It exits the mandible through the mental foramen. Blocking this nerve will desensitize the rostral mandible, canines, incisors and lower lip. To locate the mental foramen, feel for the depression on the lateral mandible rostral to the first cheek tooth. On some horses, the depressor labii inferioris muscle must be retracted dorsally to palpate the foramen.[1] A 1.5-in (3.8-cm) needle

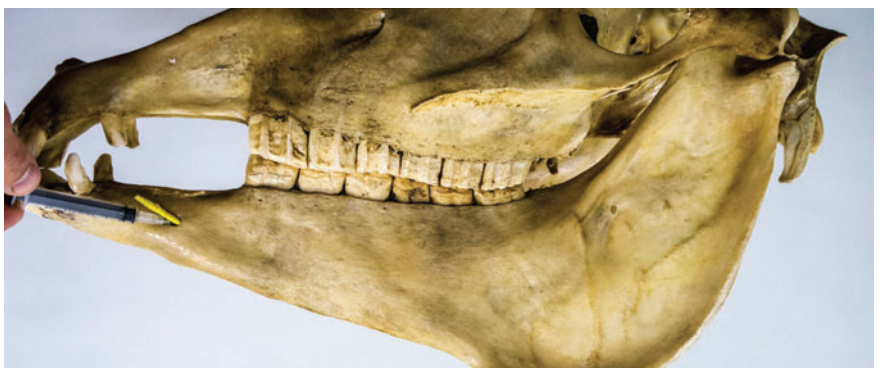


Figure 6. The mental nerve block is performed by identifying the mental foramen rostral to the first lower premolar.

with a 15- to 20-degree bend is placed through the skin rostral to the foramen and directed caudally to bury the needle, if possible; then deposit 3 to 5 ml of local anesthetic (Figure 6).

A moderate pressure during injection of the local anesthetic and lack of blebbing at the injection site confirms proper needle placement. This block is exceedingly difficult to place because of the foramen's location in proximity to the lower lips, inhibiting a straight trajectory of the needle path from the skin to the foramen. This is exacerbated by the violent objection some horses exhibit if the needle contacts the nerve. I rarely perform this block because of its difficult location and objection by the horse and will instead opt to use the inferior alveolar nerve block.

Auriculopalpebral nerve block

The auriculopalpebral nerve is a branch of the facial nerve that innervates the motor nerves of the upper eyelid. To perform the block, insert a 25-ga, 5/8-in needle containing 3 to 5 ml of local anesthetic at the dorsal edge of the most dorsal point of the zygomatic arch.[6] This block is only motor and produces no loss of sensation. It's commonly used for ophthalmic exams but is also beneficial for many ophthalmic surgeries to reduce blepharospasm.

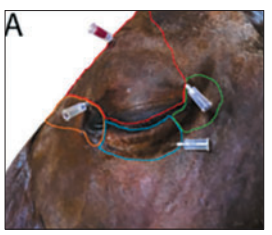


Figure 7A. The locations for blocking eyelid sensation: supraorbital/frontal nerve (red), lacrimal nerve (green), zygomatic nerve (blue) and intratrochlear nerve (orange).

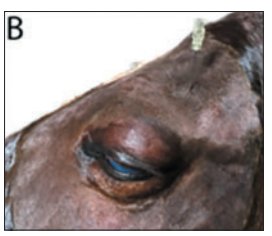


Figure 7B. The location of the retrobulbar nerve block using a 3-in spinal needle placed against the rim of the zygomatic bone in the supraorbital pouch and advanced until a "pop" is felt as the needle penetrates through the fascia of the optic cone.

Eyelid desensitization

The following blocks are commonly used during enucleation and can also aid in eyelid repair surgery. The portion of the lid blocked by each nerve is shown in Figure 7A.

Supraorbital nerve block. The frontal nerve innervates the medial two-thirds of the upper lid. The nerve can be blocked as it exits the supraorbital canal. The supraorbital canal is a palpable depression found by placing the thumb on the dorsal rim of the orbit and the middle finger in the supraorbital fossa. The index finger placed between these two fingers should fall into the supraorbital canal. Bury a 25-ga 5/8-in needle and deposit 3 to 4 ml of local anesthetic.[6]

Lacrimal nerve. The lacrimal nerve is blocked by placing a 25-ga, 5/8-in needle in the lacrimal notch, which is palpated on the dorsolateral rim of the orbit or by using a line block on the lateral third of the dorsal orbital rim with 1 to 3 ml of local anesthetic.[6] This will anesthetize the lateral canthus.

Zygomatic nerve. The zygomatic nerve is blocked via a line block along the ventrolateral orbital rim with 2 to 3 ml of local anesthetic.[6] This will anesthetize the lower eyelid.

Infratrochlear nerve. The infratrochlear nerve is blocked as it runs through the trochlear notch on the medial aspect of the dorsal orbital rim with 1 to 2 ml of local anesthetic with a 25-ga, 5/8-in needle.[6] This will anesthetize the medial canthus, including the third eyelid.

Retrobulbar nerve block. This nerve block will temporarily block the optic, oculomotor, abducens and trochlear nerves and the maxillary and ophthalmic branches of the trigeminal nerve. It's an important block to desensitize the ocular surface for standing corneal surgery and the globe for enucleation. The block is performed aseptically with a 20- to 22-ga, 3.5-in spinal needle placed through the skin perpendicular to the skull in the orbital fossa just caudal to the caudal aspect of the dorsal orbital rim (Figure 7B).

The needle is advanced caudal to the globe until it falls into the retrobulbar cone.[6] A slight dorsal movement of the eye is observed as the needle passes through the fascia of the dorsal retrobulbar cone into the retrobulbar space. When the needle passes into the cone, a sudden "pop" should be felt and the eye should fall back into its normal position. Place a volume of 10 to 12 ml of local anesthetic into the space. Slight exophthalmos occurs and the block should take effect in five to 10 minutes. Ocular sensation, corneal reflex and vision are all blocked, so if the goal of surgery is to preserve the eye, frequent lubrication or a temporary tarsorrhaphy is required for two to four hours after the procedure.

Complications include reaction to the anesthetic causing significant retrobulbar swelling, corneal ulcer from exposure keratitis, and cellulitis or abscess formation. Rarely, retrobulbar hemorrhage, optic neuritis and elicitation of the oculocardiac reflex can also occur.

The four-point block can also be used to block the retrobulbar space, but due to the larger volume used this block puts greater pressure on the globe and can lead to severe chemosis, complicating surgeries of the globe and orbit. Thus, it has no advantages over the single injection technique.

References

1. Doherty T, Schumacher J. Dental restraint and anesthesia. In: Easley J, Dixon PM, Schumacher J, eds. *Equine dentistry*. 3rd ed. Maryland Heights, Michigan: Elsevier, 2011;241-244.

2. O'Neill HD, Garcia-Pereira FL, Mohankumar PS. Ultrasound-guided injection of maxillary nerve in the horse. *Equine Vet J* 2014:46:180-184.

3. Staszyk C, Bienert A, Baumer W, et al. Simulation of local anaesthetic nerve block of the infraorbital nerve within the pterygopalatine fossa: anatomical landmarks defined by computed tomography. *Res Vet Sci* 2008;85:399-406.

4. Nannarone S, Bini G, Vuerich M, et al. Retrograde maxillary nerve perineural injection: A tomographic and anatomic evaluation of infraorbital canal and evaluation of needle type and size in equine cadavers. *Vet J* 2016;217:33-39.

5. Henry T, Pusterla N, Guedes AG, et al. Evaluation and clinical use of an intraoral inferior alveolar nerve block in the horse. *Equine Vet J* 2014;46:706-710.

6. Gilger BC, Stoppini R. Equine ocular examination: routine and advanced diagnostic techniques. In: Gilger BC, ed. *Equine ophthalmology*. 2nd ed. Maryland Heights, Michigan: Elsevier, 2016;11-13.

Surgery STAT is a collaborative column between the American College of Veterinary Surgeons (ACVS) and dvm360 *magazine. To locate a diplomate, visit ACVS's online directory, which includes practice setting, species emphasis and research interests, at acvs.org.*

Dr. Nick Carlson is a board-certified large animal surgeon at Steinbeck Country Equine Hospital in Salinas, California. He has an interest in equine dentistry and upper airway disorders in horses. In his spare time, he enjoys exploring his home state of California with his wife and two boys.

What's old is new:

New horse genus emerges through DNA analysis of North American fossils

The equid family tree was shaken up in a recent study by an international research team. *By Jennifer Gaumnitz*

Growing up, I read Marguerite Henry's *All About Horses* and Millicent Selsam's *Questions and Answers About Horses* with the laser focus of a horse-crazy preteen, memorizing the minutiae about horse breeds and colors and the evolutionary development from Eohippus to the modern-day horse. But it turns out that the equine family tree delineated in these cherished books has been revamped. An international research team has shaken up the equid family tree in a recently published study.[1]

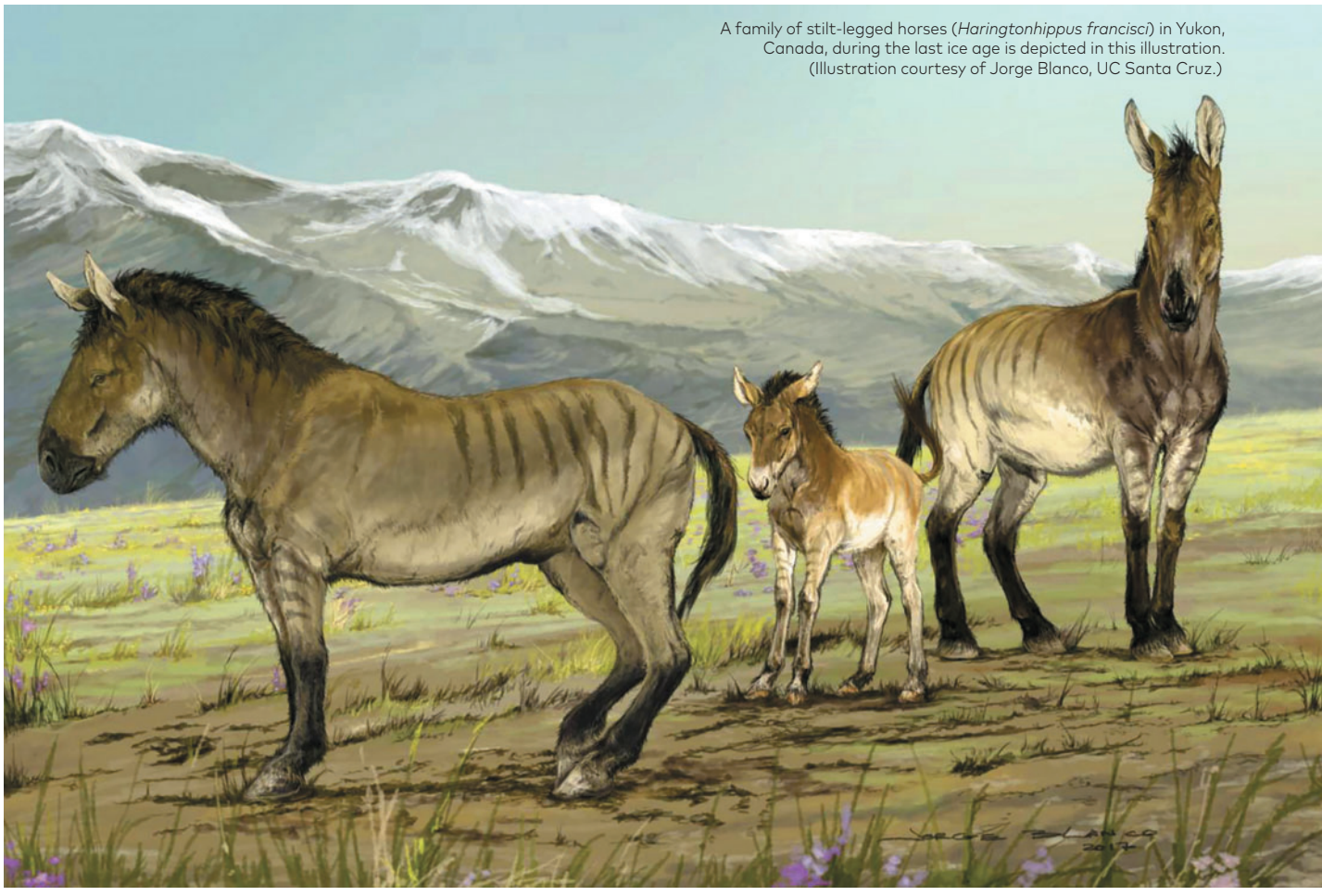
In North America, horses from the Pleistocene (the geological epoch from 2.6 million to 11,700 years ago) have been classified into two major groups—the stout-legged horses and stilt-legged horses. Both groups became extinct near the end of the Pleistocene. Until now, the stilt-legged horses had been thought to be related to the Asiatic wild ass or a separate species within the genus *Equus*, which includes today's horses, zebras and asses. As a result of this new study, it is now thought that the New World stilt-legged horses are not closely related to any living population of horses.

Peter Heintzman's research team set out to resolve where the stilt-legged horses sit within the horse family tree by analyzing more ancient DNA than in previous studies. Their analyses showed that the stilt-legged horses were much more distinct than previously thought. In fact, they found that these animals actually belonged outside the genus *Equus*.

Heintzman and his fellow researchers named the new genus *Haringtonhippus* and showed that all stilt-legged horses belonged to a single species within the genus *Haringtonhippus francisci*. (The new genus is named in honor of Canadian zoologist Charles Richard Harington.) The extinct species appears to have diverged from the family tree that led to *Equus* between 4 and 6 million years ago. *H. francisci* was a widespread and successful species throughout North America, living alongside *Equus*.

Fossils of New World stilt-legged equids have been studied for more than a century, but it wasn't clear where they should be positioned within the family tree. Anatomical studies by earlier workers ended up being perplexing. According to the study, "That the cues of morphology have turned out to be misleading in this case underlines a recurrent problem in systematic biology, which is how best to discriminate authentic relationships within groups. … The solution we adopted here was to utilize both palaeogenomic and morphometric information in reframing the position of *Haringtonhippus*, which now clearly emerges as the closest known outgroup to all living *Equus*."

Reference
1. Heintzman PD, Zazula GD, MacPhee RDE, et al. A new genus of horse from Pleistocene North America. *eLife* 2017 (6): e29944; doi: 10.7554/eLife.29944.



A family of stilt-legged horses (*Haringtonhippus francisci*) in Yukon, Canada, during the last ice age is depicted in this illustration. (Illustration courtesy of Jorge Blanco, UC Santa Cruz.)

Think small: **Companion-animal lessons for equine veterinarians**

Open your mind! Equine practitioners can learn a lot about clients and business from small animal veterinarians. *By Kyle Palmer, CVT*

As the equine practice model drifts further away from an extension of livestock work and closer to working for clients who also own pets, it's time to examine some of the similarities between (and differences from) companion animal practice. I recently asked a few simple questions of doctors and veterinary technicians in my area. Their answers can give us all a quick refresher on what should be a narrowing gap between the ways equine practitioners and small animal practitioners treat their clients. Here's what I learned.

1 Equine clients have different expectations.

According to many veterinarians I talked to, horse owners place a great deal of urgency on medical needs, with the possible exception being vaccinations and preventive care. That said, is it the nature of caring for a horse or the nature of the horse-owning client that defines this trait? Possibly both.

While many pet owners now consider their dog or cat to be part of the family and include pet healthcare in their discretionary spending budget, they aren't often directly affected when they delay a pet's treatment. Horse owners, on the other hand, tend to have a symbiotic relationship with their animal. When a condition prevents a horse or horse owner from participating in the normal routine—riding, training or just being active—horse owners seem more likely to press for an immediate resolution.

Horses' sheer physical size may also result in a higher level of sympathy or concern from owners for the conditions that ail them. In other words, clients may be willing to ignore their Chihuahua's limp for a week or so, but they feel differently when a 1,200-pound animal can't make the trip from stall to water trough to feeder.

What this means for you: As an equine practitioner, you really have only two choices—structure your schedule in a way that allows you to cater to those clients who need you on short notice, or educate them about the realities of common equine conditions so they'll be a little more patient. Of course, it's not always easy to know what's going on before a physical exam, but a detailed history taken over the phone can often point you in the right direction and buy you the time to schedule the appointment.

GRIGORITA KO/SHUTTERSTOCK.COM

2 Companion animal clients will wait longer for an appointment.

Dr. Tim Phillips of Desert Valley Equine Center in Redmond, Oregon, says most of his equine clients are reluctant to wait for an appointment. "In this market," he says, clients are likely to wait "maybe one or two days." He also added that, if asked to wait, many horse owners will likely call another veterinarian.

The uncertainty of each day's appointment schedule and call volume has encouraged equine veterinarians to squeeze in anything, regardless of its effect on the practitioner's hours or exhaustion level. As a result, instead of a series of consistently scheduled days, many equine veterinarians experience peaks and valleys in their schedule.

Days that become too busy in order to accommodate every client are often followed by days that are only partially full. On those extra-busy days, your clients may opt for your competitors with partially scheduled days who can see them immediately.

What this means for you: Train-

UBM

On any given day, you're dealing with ...

Money problems
Job performance woes
Relationship struggles
Medical emergencies
Frustrated coworkers
Fractious furballs ...

And you know what?
We can't stand it any longer.

Join us in
Baltimore
May 2-5, 2019!

... that's a tall order.

Because we think these issues are so critical, you'll find the nurturing you need at every Fetch dvm360 conference.

What does that look like?

- Sessions where your peers talk openly about the solutions to keep from totally losing it on everyone in their lives
- Opportunities to invest in your emotional health, because sanity is something worth fighting for
- Healthy physical activities that change the way you learn and open your mind to new ideas.

All that, and the CE you need to nurture your mind and get back to enjoying your life and work. **Register today.**

fetch™
dvm360
CONFERENCE

Kansas City, August 17-20, 2018
San Diego, December 13-16, 2018
Baltimore, May 2-5, 2019

Go to **fetchdvm360.com** to learn more.

ing clients to operate according to your wishes is always a slow process, while inadvertently training them not to is often quick and hard to reverse. Sometimes, the perception that you'll respond immediately in cases that aren't really emergencies has a negative long-term effect. The solution? Offer a "no wait time" appointment by telling clients they're in luck as you just had a cancellation. Do this during the slowest times of the year.

While it's tempting to rush right out the door, happy to be busy, encouraging clients to think that you're perpetually busy will lead to a greater appreciation of your time. And when a client does demand an appointment immediately, your first question should be, "How long has the condition existed?" More often than not, the answer is several days, and it's harder for them to be demanding when they've just admitted to waiting until the last minute to call you.

"While it's tempting to rush right out the door, happy to be busy, encouraging clients to think that you're perpetually busy will lead to a greater appreciation of your time."

3 Small animal clients bond to the practice.

In the era of multidoctor practices, small animal clients seem more willing to place their trust in a practice rather than expect to see a specific veterinarian. In mixed or equine-only practices, however, clients still value the relationship they form with "their" veterinarian and prefer to schedule with that doctor. Oddly, that hasn't stopped many horse owners from maintaining relationships with more than one veterinary practice—presumably to leverage their ability to be seen promptly.

Julie Hannan, assistant manager and head equine technician at my practice, Silver Creek Animal Clinic in Silverton, Oregon, has worked for more than 20 years at a mixed practice and sees a significant difference between small animal and equine clients. Most dog and cat owners don't mind seeing any of the six Silver Creek veterinarians. Equine clients, on the other hand, expect to be scheduled with their regular veterinarian. "Not doing so can create a lot of turmoil for all of us," Hannan says.

Here's one possibility for why horse owners prefer to see "their" veterinarian: Equine practitioners have unconsciously created a different kind of bond with their clients. Horse owners have less exposure to other team members when their horses are seen on an ambulatory basis. If an equine veterinarian doesn't regularly bring a staff member along on calls, clients may not be familiar with anyone else from the practice.

The dynamics of ambulatory practice versus multidoctor small animal practice can also shed some light. Two or more small animal veterinarians who work side by side in the same building with the same staff members will naturally begin to practice in a more consistent fashion. Holding onto different medical and procedural philosophies is counterproductive. It sends mixed signals to clients, can confuse team members and may lower overall compliance. In the field, of course, an appointment is often a one-on-one experience, so differences among doctors aren't as readily apparent or problematic.

What this means for you: It's important to encourage consistency in how you and other doctors practice. This means creating a strong mentoring program for younger veterinarians and being willing to open your own mind to new ways of doing things. Consistency leads to clients being more likely to accept an appointment with one of your peers when need be, which is best for your practice and for your own schedule. Whenever the opportunity arises, take the time to "talk up" your fellow practitioners in front of clients.

4 We trust our small animal patients to emergency clinics but rarely our equine patients.

In urban areas, many small animal veterinarians hand over emergency cases to practices that are open after hours or on weekends. The relationship depends on trust between general and emergency practitioners and has proven critical to satisfying younger veterinarians who aren't keen on spending their evenings taking emergency calls. However, the same trust between general and emergency practitioner has not been widely developed in the equine field.

Dr. Phillips notes that, as in many other locations, there are no equine emergency practitioners in central Oregon. He would consider a relationship with one, he says, if he "was assured of getting clients back."

But retention of clients is not the only factor holding back the development of equine emergency practice. A majority of veterinarians polled indicated that they've used—or considered creating—a "call group" of local veterinarians to rotate emergency and after-hours calls. This would be a great first step toward the establishment of a full-time emergency veterinarian working after hours.

What this means for you: The jury is already in: Newer veterinary school graduates will not accept after-hours work the same way previous generations did. Like it or not, adapting to these changes will be critical to practice survival, and that means working together in the industry to encourage emergency-only practice or a large group emergency rotation.

In my opinion, small animal hospitals get some important things right. Equine veterinarians should consider moving toward a practice-oriented approach to avoid losing impatient clients who may have a relationship with another practice but not one with their primary practice's own associates.

The new generation of veterinary graduates is also prioritizing personal time at a level unseen in the past. Financial compensation and benefits are still important to them, but quality-of-life concerns have risen significantly—and nothing in practice affects that more than after-hours emergency work. Equine veterinarians who consider using (or encouraging) emergency-only practitioners will find themselves with associates who are happier in their positions.

We may only be able to change our relationship with clients slowly, but it has to begin with changing our way of doing business. Equine practice, however attractive it may be to those of us who love horses, must evolve, and practice owners and managers must realize that there is no escape from the comparison to companion animal practice—both by clients and by potential associates.

Kyle Palmer, CVT, is a Firstline *Editorial Advisory Board member and a practice manager at Silver Creek Animal Clinic in Silverton, Oregon.*

Itchy dogs: Which meds to try first?

By Paul Bloom, DVM, DACVD, DABVP

Question. **I'm confused about when to use steroids and antihistamines as first-line dermatologic treatments and when to try the newer options such as oclacitinib (Apoquel) or Cytopoint. Is cost the only factor, or are there other considerations?**

Answer. There are several things to consider when using steroids and antihistamines as a first-line treatment for canine atopic dermatitis.

Steroids are effective, inexpensive, predictable drugs that, when dosed appropriately, don't usually have severe side effects in the short term; of course, some dogs develop significant polyuria/polydipsia or polyphagia. Do I think there's a role for steroids the first time? Of course I do. They work. The disadvantage in addition to the side effects from short-term use is steroids have significant long-term effects such as cystic calculi, proteinuria and pyoderma. The problem is that they are so effective that people want to use them as the foundation of their therapy. And, in humans at least, there's evidence that steroids damage barrier function with long-term or repeated use, which is already compromised in atopic animals.

I like to encourage owners with mildly itchy dogs to bathe the dogs frequently to wash off antigens and irritants, followed by a moisturizer. That can make a significant difference and should also be a part of the first-line therapy.

If you're seeing a repeat offender, oclacitinib (Apoquel—Zoetis) is an effective, quick-acting, safe therapy, with the caveat that you have diagnosed atopic dermatitis and that these dogs don't have concurrent pyoderma, *Malassezia* dermatitis or demodicosis. Cytopoint (Zoetis) is a reasonable drug to use in cases in which *Demodex* species or cancer is present or if the pet is under 12 months of age. But before using any of these, a minimum database should be performed, which includes skin scrapings for *Demodex* and scabies as well as skin cytologies to identify bacterial pyoderma or *Malassezia* dermatitis. If the latter two are present, it's best to treat the secondary infections first to see how much of the pruritus is infection-driven versus allergy-driven.

Paul Bloom, DVM, DACVD, DABVP (canine and feline), is the owner of Allergy, Skin and Ear Clinic for Pets located in Livonia, Michigan. He is also a Fear Free certified practitioner.

JULIA SERDIUK/SHUTTERSTOCK.COM

There's that telltale tongue 'twixt a canine's toes.

IDEXX research links tick-borne disease exposure, kidney issues

Positive results for *B. borgdorferi* and *E. canis* antibodies associated with a higher risk of chronic kidney disease in dogs later in life.

IDEXX Laboratories, makers of the popular IDEXX SNAP 4Dx Plus test to detect exposure to vector-borne diseases, has released internal research connecting exposure to the pathogens causing Lyme disease and ehrlichiosis—the positive "blue dot" result—to kidney problems later in life, even in animals that seemed asymptomatic at the time of the screening.

"To protect our pets and ourselves, we need to stay alert to the risks," reads an IDEXX white paper detailing the study design and its results. "That means regularly screening pets—including asymptomatic or seemingly healthy ones—to identify exposure to infected ticks."

How the study was conducted

To conduct the research, investigators at IDEXX performed a retrospective study using results from its patient database. They obtained complete chemistry panel (including SDMA, a biomarker that can signal kidney disease relatively early in the disease process) and urinalysis results logged between July 2015 and January 2017. They then correlated these results with vector-borne disease data gathered between January 2003 and January 2017, according to the white paper.

To be considered "exposed" to infected ticks, a patient had to have at least one positive vector-borne disease test result in its history. Patients were deemed to have chronic kidney disease (CKD) if they showed increased SDMA (>14 µg/dl) and creatinine (>1.5 mg/dl) for at least 25 days and inappropriate urine specific gravity (USG <1.030) in that same period. To establish persistence in these patients, neither SDMA nor creatinine concentrations could return to normal ranges in their available history.

Investigators also correlated these results to the patients' geographic areas—namely, whether or not those areas were endemic for Lyme disease and ehrlichiosis. The patient population included male and female dogs of all breeds from 1 to 25 years old.

What they discovered

Dogs with antibodies to *Borrelia burgdorferi*, the Lyme pathogen, were found to have a 43% higher risk of developing CKD. Dogs with antibodies to *Ehrlichia* species had a 300% higher risk of developing CKD if they lived in *Ehrlichia canis*-endemic areas (those patients not located in endemic areas did not show increased risk of CKD with *Ehrlichia* exposure). The results were statistically significant and clinically relevant, IDEXX's white paper states, "indicating that regular monitoring of these seropositive patients is medically necessary."

"Although the design of this retrospective study does not allow for determination of a causal relationship," the paper continues in its Conclusions section, "the study supports that dogs who test positive for Lyme disease or *Ehrlichia* are associated with a statistically significant increased risk of developing CKD in endemic areas. … Consequently, patients of any age that test positive for Lyme disease or *Ehrlichia* should be considered for comprehensive evaluation. At every annual visit, the patient should receive a physical examination, a complete blood count (CBC), a complete chemistry panel with the IDEXX SDMA Test, and a complete urinalysis to monitor for multisystemic disease."

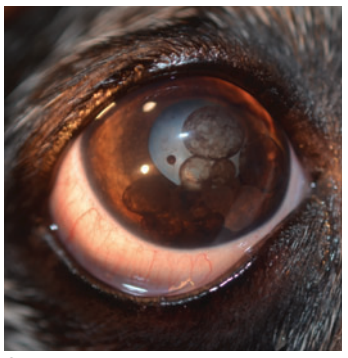
KALAMURZING/SHUTTERSTOCK.COM

Image Quiz:
Can you name that ophthalmologic condition?

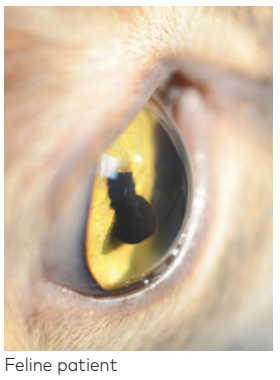
Eye these photos from veterinary ophthalmologist Clara Williams, then see if you can identify which disease process is to blame.

Think you know eyes? Clara Williams, DVM, MS, DACVO, of BluePearl Veterinary Partners in Waltham, Massachusetts, certainly does. Examine the images that follow, choose the answer you think fits best, then turn to the next page to see if you're right.

1. These two patients have the same issue. What's going on with their eyes?



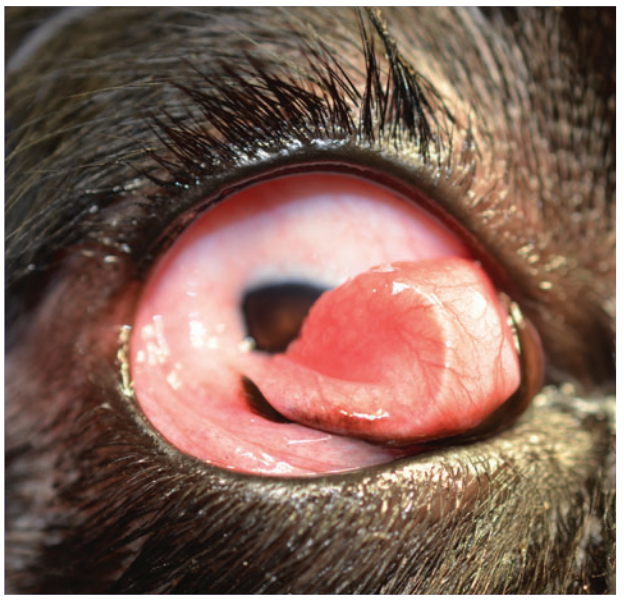
Canine patient



Feline patient

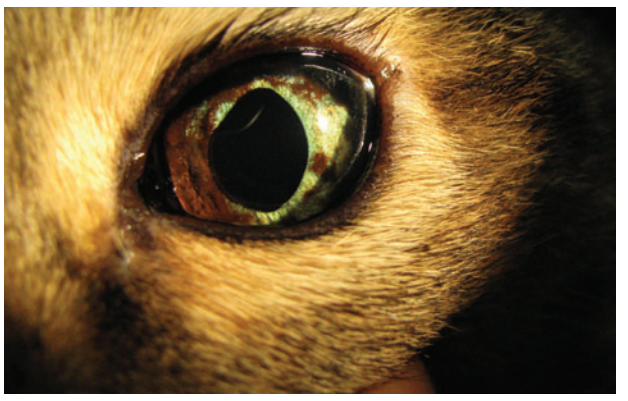
A. Multiple intraocular melanomas
B. Multiple free-floating uveal cysts and nuclear sclerosis
C. Unidentified intraocular brown bubbles
D. Aqueous flare and uveitis

2. The condition pictured is ...



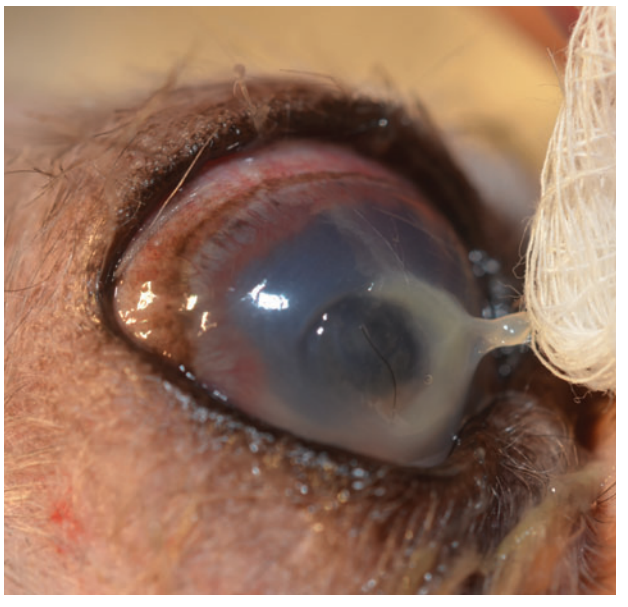
A. Conjunctival foreign body
B. Unusual "cherry eye"
C. Third eyelid neoplasia
D. Third eyelid cartilage eversion

3. Look closely. What's going on with this feline patient's eye?



A. Normal brown feline iris
B. Feline diffuse iris melanoma
C. Iris nevus (freckles)
D. Iris hyperpigmentation secondary to chronic uveitis

4. The condition pictured is ...



A. Corneal foreign body
B. Indolent corneal ulcer
C. Melting corneal ulcer (corneal collagenolysis)
D. Superficial noncomplicated corneal ulcer

ALL IMAGES COURTESY OF DR. CLARA WILLIAMS, BLUEPEARL VETERINARY PARTNERS

Check your answers to the questions from the previous page ...

1. Multiple free-floating uveal cysts and nuclear sclerosis (B)

Uveal cysts are fluid-filled, ovoid to spherical structures often seen floating inside the eye in front of the pupil. These cysts are also often found resting at the bottom of the anterior chamber.

Uveal cysts originate from the posterior pigmented epithelium of the iris or ciliary body. Iris cysts aren't typically of clinical significance. Sometimes, these cysts remain attached and can be seen behind the patient's pupil.

If a cyst is densely pigmented and solitary, it must be differentiated from a pigmented tumor.

Iris cysts are common in Boston terriers, Great Danes and golden retrievers. Deflated cysts appear as patches of pigment adherent to the corneal endothelium.

Ciliary body cysts in golden retrievers and Great Danes have been associated with glaucoma (elevated intraocular pressure).

Iris cysts in feline patients are thick-walled, darkly pigmented and attached to the pupillary margin. These cases are frequently misdiagnosed as intraocular melanomas.

2. Third eyelid cartilage eversion (D)

With this condition, the third eyelid arises as a fold from the ventromedial aspect of the conjunctiva; it is mobile and can cover the entire anterior face of the cornea.

A T-shaped hyaline cartilage reinforces the body of the third eyelid. The column of the T curves around the inferomedial aspect of the globe and is surrounded by a seromucous gland. The free edge is concave, stiffened by the cartilage crossbar, to accommodate to the shape of the cornea.

Some canine breeds such as Saint Bernards, Great Danes and Newfoundlands are predisposed to eversion of the third eyelid cartilage. It is believed to occur due to different growth speeds in the palpebral and bulbar aspects of the cartilage, which then develops a scroll or a bent.

Clinical signs of third eyelid cartilage eversion are evident (conjunctival hyperemia, increased discharge). The condition affects proper dispersion of the tear film over the cornea.

Surgical correction by either removal of the abnormal portion of the cartilage or cauterization treatment can be performed by a veterinary ophthalmologist.

3. Feline diffuse iris melanoma (B)

The owners notice slow changes in the iris coloration over months or even years. On examination the eye is painless and the iris appears to have diffuse or multifocal hyperpigmentation. The iris melanocytes may proliferate secondary to chronic inflammation or age in a benign or malignant pattern. Pigmented cells from the iris freely exfoliate and may be evident in the intraocular fluid (aqueous humor) circulating out of the eye and into the bloodstream. This suggests that a tumor in the eye can spread to other body organs (metastasize).

Most cases of iris melanosis (so named because the proliferating cells are assumed to be nonmalignant) do not undergo malignant changes to melanoma. A cat with progressive iris melanosis is more likely to develop secondary glaucoma from infiltration and obstruction of the drainage angle than the cat is to develop distant metastasis. However, malignant transformation is always a possibility, with a risk of metastasis and guarded prognosis.

Cats with pigmented iris lesions should be closely monitored. Consultation with or referral to a veterinary ophthalmologist is strongly recommended.

4. Melting corneal ulcer (corneal collagenolysis) (C)

The key here is the collagenolytic corneal stroma attached to the cotton 4x4.

This condition occurs when a corneal ulcer gets infected by bacteria and the corneal tissue become malacic or "gelatinous." It appears as if the cornea is literally "melting."

Bacteria such as *Pseudomonas aeruginosa*, Streptococcus beta hemolyticus and inflammatory cells produce enzymes that attack the collagen fibers of the stroma, causing its breakage (lysis). This process is known as collagenolysis or "melting." Clinical signs of a stromal abscess include increased tearing, severe ocular pain and redness. The cornea is cloudy, with whitish to yellow discoloration, and looks like melting gelatin.

A melting corneal ulcer requires strong and frequent topical antibiotic therapy supported by systemic antibiotic and analgesic therapy. Preferably the patient should be admitted to the hospital. Response to treatment depends on individual cases and aggressiveness of the condition. Consultation with or referral to a veterinary ophthalmologist is recommended.

The "eyes" have it at 2018 Veterinary Innovation Awards

A special event for veterinary ophthalmologists to give eye exams to service animals, including horses, won an award at VMX in Orlando in February.

Veterinary ophthalmologist Kathryn Wotman, of Colorado State University, examines Peso, a Delmarva Search and Rescue Group horse.

In veterinary medicine, innovation also means helping and giving. That might have motivated the thinking behind four out of five voters in a special category in this year's VMX innovation awards giving their vote to the National Service Animal Eye Exam Event.

The eye exam event, supported by the American College of Veterinary Ophthalmologists (ACVO) and Stokes Pharmacy, was among the 10 winners of the 2018 Veterinary Innovation Council (VIC) Awards. With five individual categories and five organization categories, the eye exam event won in the "Organization: Other" category.

The ACVO/StokesRx National Service Animal Eye Exam Event is a volunteer-based, philanthropic national event that provides free ocular screening eye exams to qualified service and working animals each May. These exams are provided by 300 board-certified veterinary ophthalmologists who volunteer their time and resources. In 10 years, the program has provided more than 60,000 eye exams to deserving service and working animals across the United States, Canada and Puerto Rico.

The 2018 event marks the 11th year this program has been offered to the public. For more information, visit acvoeyeexam.org.

Love Your practice manager?

Nominate them for 2018 dvm360/ VHMA Practice Manager of the year.

When fecal matter hits the fan (metaphorically, we hope), and there's a calm, cool and collected practice manager to mitigate the damage, everyone's life becomes that much easier. Maybe you're that practice manager. Maybe you're working with that practice manager. Either way, a practice manager like that deserves recognition.

Look no further! We give you the 2018 dvm360/VHMA Practice Manager of the Year contest. Simply enter yourself or nominate that favorite practice manager of yours. The manager then fills out an entry form and sends it our way to look over.

Prizes include

> 1 year membership to VHMA

> Free registration, lodging, travel and meals for a 2019 VHMA event

> Free 4-day registration to a Fetch dvm360 conference in either San Diego, Baltimore or Kansas City (you pick!).

Contest ends June 15—so what are you waiting for? Enter (or nominate) now!

dvm360 PRACTICE MANAGER OF THE YEAR VHMA www.VHMA.org Veterinary Hospital Managers Association

products

Find it all here

dvm360

Get updates online @
dvm360.com/products

Embrace Pet Insurance

Pet insurance app

Embrace360 is a free, easy-to-use application that is easy to install. It connects directly to your veterinary practice software, improving the pet health insurance experience for both staff and clients. Hospitals experience streamlined electronic claims submission, increased client compliance and commitment, and easy-to-access insights and reconciliation reports. Pet parents experience a simplified claims submission—no more printing and submitting paper claim forms.

For fastest response visit embracepetinsurance.com

Nutramax Laboratories Veterinary Sciences

Pancreatic enzyme supplement

Panzquin is a pancreaticenzyme concentrate plus cobalamin. The oral cobalamin used is bioavailable and has been shown to increase serum cobalamin concentrations in dogs and cats. The package includes a small scoop with a handle that is longer than the depth of the tub. At only ¼ teaspoon, it allows veterinarians and their clients to choose the appropriate number of scoops for each patient's specific meal size, which results in lower client cost and improved client satisfaction.

For fastest response visit panzquin.com

MVS Pet Care

House call franchise service

MVS (Mobile Veterinary Services) Pet Care Franchise offers a comprehensive business model for veterinarians who want to start their own house-call practice or expand an existing clinical practice with a mobile business. It offers general wellness care and vaccinations as well as illness and injury care in clients' homes. Trained MVS veterinarians also provide complete end-of-life services, including hospice care and in-home euthanasia, striving to make these experiences as comfortable as possible for the family as well as the pet.

For fastest response visit mvspetcare.com

Shor-Line

Cat condo

Crafted from a fine-celled foam board that has a strong cellular core, the Feline Comfort Suite has the appeal of wood but is impervious to water and urine. The material is lightweight, insulated and exhibits superior load-bearing and impact-resistant capabilities. It can take a pounding from the most feral felines while providing a matte finish with just the slightest texture for secure footing. The Suite provides a comfortable, reduced stress environment with more room to let cats roam and explore. The large unit features 8.75 square feet of calming space.

For fastest response visit shor-line.com

New Products Showcase winners **from this year's Global Pet Expo**

From a robotic rodent for cats to a bathing system for pups, here are some "Best in Show" winners that just might meet some of your veterinary patients' needs (and wants).

The 2018 Global Pet Expo, presented by the American Pet Products Association and Pet Industry Distributors Association, recently held its 14th annual show in Orlando, Florida. The first pet products trade show of the year, Global Pet Expo is also the largest annual show in the pet industry and is open to independent retailers, distributors, mass-market buyers and other qualified professionals, according to a Global Pet Expo release

Companies launching new products were able to enter them into the New Products Showcase. Out of 1,000 new product submissions this year, nine received "Best in Show" awards across various categories. Here are some of the winners you might see more of this year:

Product: Mousr
Company: Petronics
Best in Show category: Cat

The Mousr is a robotic rodent on wheels designed for feline entertainment that drives on carpet, wood, tile, linoleum and rugs. Using sensors and artificial intelligence, the electronic mouse can interact with cats on its own or via an app on the pet owner's smartphone or tablet. It features a flicking motorized tail that has interchangeable attachments to switch up the play.

Product: Aquapaw Pet Bathing System
Company: Aquapaw
Best in Show category: Dog

The Aquapaw Pet Bathing Tool is a one-size-fits-all combination sprayer and scrubber that straps to the pet owner's hand. This same hand can control water flow by pressing the fingers to the palm to click the water on and off. The tool can attach to both showers and garden hose bibbs.

Aquapaw also recently released a Slow Treater to be used in conjunction with its bathing tool. The dishwasher-safe silicone treater has suction cups that attach to smooth shower walls and is nubby enough to hold substances like peanut butter and spray cheese for bath-time distraction.

Product: Walkin' Blind Dog Halo
Company: Walkin' Pets by HandicappedPets.com
Best in Show category: Small animal

The Walkin' Blind Dog Halo was designed to help visually impaired dogs move around safely. The lightweight, flexible halo is attached to either a harness or a vest, depending on the dog's size.

Want to see more from Global Pet Expo? Visit dvm360.com/sharktank *to see products from the show that got their shot on the TV show* Shark Tank.

DENTAL PRODUCTS

VetzLife

Superior Holistic Solutions

Helps Eliminate Plaque 1

Solve 4 Oral Problems with One Bottle

2 Helps Remove Tartar

3 Helps Reverse Gum Disease

4 Freshens Breath

100% Natural

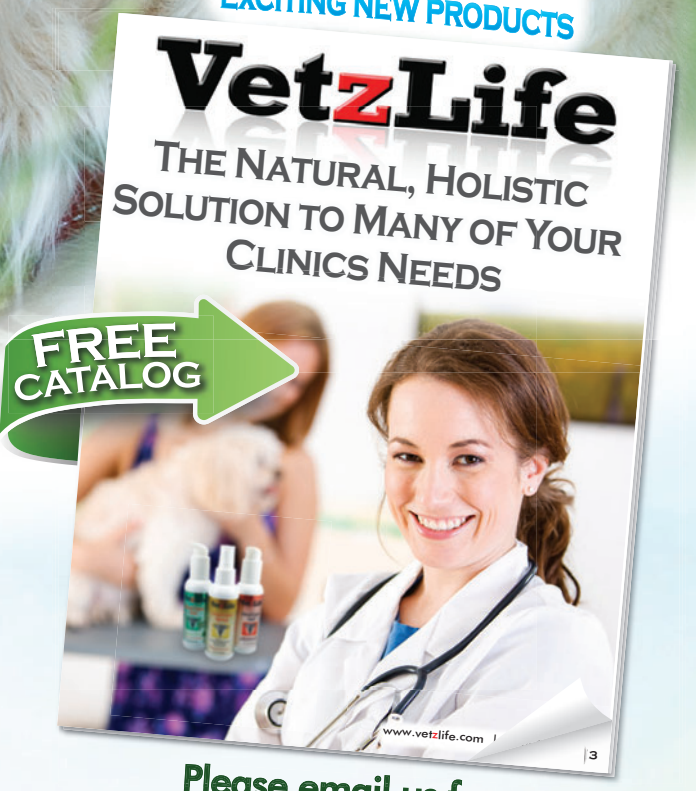
VetzLife Oral Care are the products more and more Veterinarians trust to remove plaque and control tartar in companion animals. With **VetzLife** Veterinarians are able to prescribe a professional strength solution that naturally softens and eliminates tartar, freshens bad breath and has even proven to reverse oral disease. It's the perfect alternative to dental scaling - especially when companion animals can't tolerate anesthesia, and for preventing plaque and tartar build up after dental treatments. And best of all, it's 100% natural, 100% safe, 100% guaranteed and easy to use.

CONTACT YOUR FAVORITE DISTRIBUTOR SALES REP FOR MORE INFORMATION AND PRICING:

PENN Veterinary Supply, Inc. | midwest veterinary supply | MWI Veterinary Supply | Veterinary Hospitals Association | vets FIRST CHOICE Your online partner pharmacy that works | VETESSA | Miller | first veterinary supply Putting Veterinarians first.

Proudly made in the U.S.A | www.vetzlife.com | 888-453-4682

SEE OUR FULL LINE OF EXCITING NEW PRODUCTS



Please email us for FREE Samples, catalog and pricing:
info@vetzlife.com
Download catalog here: vetzlife.com/catalog

Visit us: CVC KANSAS
AHVMA COLOMBUS
CVC SAN DIEGO

Search for the company name you see in each of the ads in this section for FREE INFORMATION!

CLIENT PAYMENT

ARCHITECTS BUILDERS

MEDICAL EQUIPMENT

DENTAL EQUIPMENT

Search for the company name you see in each of the ads in this section for FREE INFORMATION!

MOBILE VETERINARY

La Boit Specialty Vehicles, Inc.

Quality you can trust.

SURGICAL SUPPLIES

The Easy Choice

Pay full price every day

Get up to 1/2 off every day

eSutures.com is a liquidator of Ethicon and Covidien sutures and endomechanicals, as well as Synthes screws, implants and instruments.

eSutures Can Offer Your Business:

- Name Brands, In Stock
- All Items Available by the Box or Individual Packet
- Low Prices
- No Contracts or Minimum Orders
- Same Day Shipping

*Promo code valid for (1) one use only. Offer expires 12/31/18.

Find out more at: eSutures.com or call 888-416-2409

Use promo code: **DVMTENOFF** for 10% off your order of $50 or more.*

eSutures.com
The Surgical Superstore

dvm360™

Content licensing for every marketing strategy

Marketing solutions fit for:

- Tradeshow/POP Displays
- Social Media
- Outdoor
- Direct Mail
- Radio & Television
- Print Advertising

Logo Licensing | Reprints | Eprints | Plaques

Leverage branded content from *DVM 360* to create a more powerful and sophisticated statement about your product, service or company in your next marketing campaign. Contact Wright's Media to find out more about how we can customize your acknowledgements and recognitions to enhance your marketing strategies.

For more information, call Wright's Media at 877.652.5295 or visit our website at www.wrightsmedia.com

MEDICAL EQUIPMENT

engler engineering corporation VETERINARY DENTAL, ANESTHESIA & OXYGEN EQUIPMENT

Download all product details, brochures and more from our support website at:
engler411.com

Mini Scale-Aire High Speed Dental Air Unit
Easily connects to a regulated nitrogen tank or external compressor
Wall Mount included Optional Stand Available
All in one miniature air unit Introductory Price **$2350**

Wall Mount included Optional Stand Available
Our Most affordable High Speed at only **$1295**

Drill-Aire High Speed Dental Air Unit
For Clinics in need of highspeed capability. Includes a highspeed handpiece and Air-Water Syringe

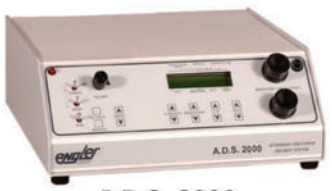
Wall Mount included Optional Stand Available
Very affordable High Speed at only **$1695**

Drill-Aire Plus High Speed Dental Air Unit
Includes a highspeed handpiece, low speed Handpiece and Air-Water Syringe

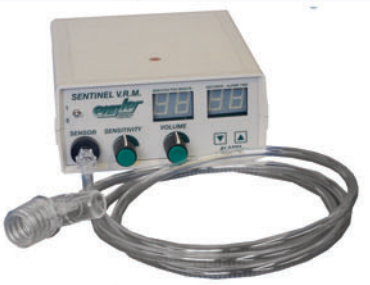
SCALE-AIRE HIGH SPEED
Ultrasonic scaler / Highspeed / Low speed / Air-Water syringe

Our Most Popular High Speed for only **$4275**

Never pay for Oxygen again with one 5L Oxygen concentrator you can run 1 traditional anethesia machine. Visit www.engler411.com to view all our brochues.



A.D.S. 2000
Electronic positive pressure Anesthesia Machine/Ventilator
Visit our support website for all our brochures, manuals and how to videos **www.engler411.com**



Sentinel VRM
Veterinary Respiratory Monitor

Electro-Son Electrosurge Unit
Mono & Bipolar LCD Touch Screen

NEW **$825** 5 LPM
EverFlo 5 LPM
Oxygen Concentrator

All Engler Dental Table top units comes with a SIX YEAR WARRANTY & LIFE TIME LOANER SERVICE - Visit our support website for brochures, Manuals, Videos Etc... for complete details

Son-Mate II Ultrasonic Scaler/Polisher
At the touch of the switch, alternate from scaling to polishing plus a variety of other operations. You can perform curettage, deep scaling of heavy calculus and stain removal. Optional drilling & cutting accessories available

Sonus II Ultrasonic Dental Scaler
The Sonus II ultrasonic scaler is a reliable, powerful and rugged unit that has a proven track record. As with all our table top dental units it is supplied with our super 6 year warranty, lifetime loaner service and proudly made in the USA.

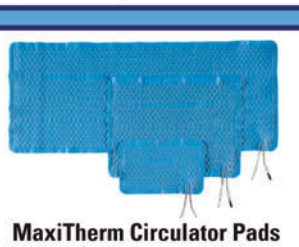
TriMate - Scaler, Polisher & Electrosurgery
A three in one unit that offers a high quality, high powered, fully automated scaler, polisher and general purpose electrosurgery unit. (***An Engler Exclusive!!!***)

Dynax Stretcher & Gurney
The Dynax Gurney is a tubular frame construction with unique connectors creating a means of supporting the Dynax stretcher and the larger canine patient, up to 200 pounds.

EZ-Stretcher.com (frameless stretcher)
The frameless feature allows for easy folding and storage (storage bag included).
- Holds up to 220 pounds
- Dimensions L82" X w29"
- Radiolucent
- Nylon material is easy to clean
- Rip resistant
- 10 rubber handles for multi person use
- Storage bag included

only **$99** Order at EZ-Stretcher.com

The "Original" Cat Grabber
The CAT-GRABBER is the safest means of controlling the fractious cat, humanely.



MaxiTherm Circulator Pads
Why pay more? Adapts to all circulator warmers. Our pads are less expensive, better quality and will last longer than any other circulator pad. We also offer our Fleece Bags to protect our pads from punctures and provides patient comfort. Engler's innovative products provide more for less $$$. See www.dynaxusa.com for more details.

Engler Engineering Corp / Dynax

1099 East 47th Street • Hialeah, Florida 33013 USA
Toll Free 800-445-8581 • Tel: 305-688-8581 / Fax: 305-685-7671
Email: info@englerusa.com • dynax@englerusa.com
Web: www.englerusa.com • www.dynaxusa.com
Download Brochures, Manuals, Videos, How to Pages and much more at:
Support website: www.engler411.com

engler engineering corporation
DYNAX

ENGLER ENGINEERING CORP. In Business Since 1964 QUALITY & EXCELLENCE

Proudly made in the U.S.A.

Search for the company name you see in each of the ads in this section for FREE INFORMATION!

Anesthesia Equipment

Continuing Education

Employment

Blood Supplies

Dental

Diagnostic Imaging

Medical Services

Medical Equipments

Parasitology

Pet ID Products

Identification Systems

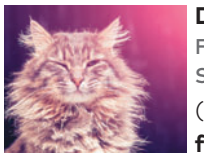
Medical Products

Mobile Veterinary

For a full listing of events in 2018, visit dvm360.com/calendar

May 17-20, 2018
Fetch dvm360 in Virginia Beach
(800) 255-6864, ext. 6
fetchdvm360.com/vb

August 17-20, 2018
Fetch dvm360 in Kansas City
(800) 255-6864, ext. 6
fetchdvm360.com/kc



December 13-16, 2018
Fetch dvm360 in San Diego
(800) 255-6864, ext. 6
fetchdvm360.com/sd

fetch dvm360 CONFERENCE

Here are the CE opportunities coming in the next few months

May 15-17
Internal Medicine & Emergency Critical Care
Savannah, GA
(888) 488-3882
vetvacationce.com

May 19-21
2018 WVC Hands-On Lab: Intermediate Abdominal Ultrasound
Las Vegas, NV
(702) 739-6698
oquendocenter.org

May 20
Ethos Veterinary Symposium by VetBloom
San Diego, CA
(858) 875-7500
vshsd.com

May 20-22
2018 WVC Hands-On Lab: Comprehensive Surgical Management of Stifle Disease
Savannah, GA
(702) 739-6698
oquendocenter.org

May 31-June 1
Dairy Cattle Welfare Symposium
Scottsdale, AZ
(614) 292-9453
dcwcouncil.org

June 1-2
2018 WVC Hands-On Lab: Wound Management & Reconstructive Surgery
Las Vegas, NV
(702) 739-6698
oquendocenter.org

June 2-3
Veterinary Dental Extraction Course Weekend Dog & Cat Wet Lab
Los Angeles, CA
(941) 276-9141
veterinarydentistry.net

June 2-3
Veterinary Dentistry For Technicians Weekend Extravaganza
Los Angeles, CA
(941) 276-9141
veterinarydentistry.net

June 3
It's What's Up Front That Counts
Detroit, MI
(303) 674-8169
vmc-inc.com

June 3-5
Internal Medicine/ Critical Care and Oncology Updates
Whitefish, MT
(888) 488-3882
vetvacationce.com

June 8-10
Animal Chiropractic Program: Parker University
Dallas, TX
(800) 266-4723
ce.parker.edu

June 8-10
2018 WVC Hands-On Lab: Tibial Plateau Leveling Osteomoty
Las Vegas, NV
(702) 739-6698
oquendocenter.org

June 9-10
Dental Extraction Course Weekend Dog & Cat Wet Lab
San Francisco, CA
(941) 276-9141
veterinarydentistry.net

June 9-13
Introduction to Canine Rehabilitation
Wheat Ridge, CO
(888) 651-0760
caninerehabinstitute.com

June 10
It's What's Up Front That Counts
Portland, ME
(706) 540-4073
vmc-inc.com

June 13-15
2018 WVC Hands-On Lab: Fracture Repair in Toy Breed Dogs & Cats
Las Vegas, NV
(702) 739-6698
oquendocenter.org

June 15-17
Canine Sports Medicine
Wheat Ridge, CO
(888) 651-0760
caninerehabinstitute.com

June 15-16
2018 WVC Hands-On Lab: Top Ten Surgical Procedures
Las Vegas, NV
(702) 739-6698
oquendocenter.org

June 23
Gastrointestinal Endoscopy
Athens, GA
(706) 540-4073
uga.edu

June 23
UGA Dentistry for Veterinary Technicians
Athens, GA
(706) 540-4073
uga.edu

June 23
Comprehensive Canine Dental Extraction Course
Tempe, AZ
(774) 230-4195
securosuniversity.com

June 23
Comprehensive Extracapsular Stifle Stabilization Course
Tempe, AZ
(774) 230-4195
securosuniversity.com

June 23
Comprehensive Tibial Tuberosity Advancement
Tempe, AZ
(774) 230-4195
securosuniversity.com

June 23
Comprehensive Patellar Luxation Correction Course
Tempe, AZ
(774) 230-4195
securosuniversity.com

June 23
Comprehensive Feline Dental Extraction Course
Tempe, AZ
(774) 230-4195
securosuniversity.com

June 23-24
TAMU Veterinary Technician Seminar
College Station, TX
(979) 845-9102
tamu.edu

June 23-24
A Hard Time Getting Around?
Boulder, CO
(352) 468-2139
litecureinfo.com

June 24
UGA Dentistry for Veterinary Practitioners
Athens, GA
(706) 540-4073
uga.edu

June 23-24
Comprehensive Canine Dental Extraction Course
Tempe, AZ
(774) 230-4195
securosuniversity.com

dvm360™ (Print ISSN: 2326-0688, Digital ISSN: 2326-070X) is published monthly by UBM LLC 131 W First St., Duluth MN 55802-2065. Subscription rates: $40 for one year in the United States & Possessions, Canada and Mexico; all other countries $87.50. Single copies (prepaid only): $18 in the United States; $20 in Canada and Mexico; $24 all other countries. Back issues, if available: U.S. $23; Canada/Mexico $28; all other countries $46. International pricing includes air-expedited service. Include $6.50 per order plus $2 per additional copy for U.S. postage and handling. Periodicals postage paid at Duluth MN 55806 and additional mailing offices. POSTMASTER: Please send address changes to DVM360, P. O. Box 6309, Duluth, MN 55806-6309. Canadian GST number: R-124213133RT001, Publications Mail Agreement Number 40612608. Return undeliverable Canadian addresses to: IMEX Global Solutions, P.O. Box 25542, London, ON N6C 6B2, Canada. Printed in the U.S.A.

The bond between **horse and boy**

Watching a friendship form at an early age is one of the things I love best about my job as a veterinarian.

There are about 25 yards of parking lot between the two parts of our vet clinic, and I had a smile on my face as I carried a chart from my office at one end toward the horse clinic at the other. I knew this old gelding was going to be a fun workup.

The horse belonged to some folks with the last name Angel, and let me tell you, the 4-year-old boy who was best friends with Rex the gelding—well, he was an angel. The parking lot was full of trailers, and in between two trucks I spotted little Four walk out with his chest puffed out and his cowboy hat pulled down, old Rex a few steps behind him on the end of a red lead rope.

I stopped for a minute and watched Four lead old Rex across the lot, around a couple of trucks and into the clinic. His dad was a few steps behind, keeping an eye on things and talking on the phone.

I finished my trek across the lot and found Four standing in the clinic with Rex. They were checking out the other horses being worked on by other vets. Four would look at a racehorse and then look at old Rex, and I could tell what he was thinking: "My horse is way better than yours."

I approached and we shook hands for a second and I asked him what was wrong with Rex today—besides the fact that he was 28 years old.

He looked over at his dad, who was still on the phone, and then said, "Daddy says he ain't stopping right no more and that you could fix him."

I spent a minute sizing up little Four. His cowboy hat was pulled down so far that the tops of his ears were bent out at a right angle. His boots couldn't have been more than three inches long and attached were a pair of ancient spurs. He was dressed in jeans and a snap shirt. He had one arm around Rex's front right leg and his head was just a touch taller than the commissure of the legs as they came together to form the chest.

You could tell Four was a little scared about the whole situation. His dad was still on the phone, sitting across the way. Four had sunk into the chest of good old Rex to find some safety and comfort. For his part, Rex looked prepared. He stood calmly, looking around at all the activity, making sure his little boy was gonna be OK.

"How old are you?" I asked.

"I'll be 5 years old next month!" Four said as he puffed his chest out a little more. He started petting Rex's leg.

"Is this your horse?" I asked.

"Yes, and he's the best horse at the ranch. My daddy used to ride him when he was a little kid like me. We rounded up a whole pasture on him yesterday. He's the best," Four said. "I think he can outrun any horse in this barn. I looked them over and Rex would be the fastest. He ran fast with me yesterday and boy howdy, I thought I was gonna fall off. He was almost flying. But daddy told me he was just trotting. I can't imagine how fast he must go when he runs."

"What are you gonna be when you grow up?" I continued.

He looked at me and then up at Rex and said, "Well, I'm gonna be a cowboy, of course!"

"You sure you don't want to be a horse doctor? I think you would be a great horse doctor," I said. "Then you could take care of other good horses like Rex. You could come here and I would teach you how to do it. We would have a lot of fun making horses happy."

He raised one eyebrow a bit. I could see the wheels turning in his little mind and he held on a little tighter to the horse's leg and looked up at him again.

A moment passed and he said, "Nope, I'm gonna be a cowboy. But thank you for asking."

His dad got off the phone and came over and Four followed behind us, leading Rex as we headed down to watch the old saint trot on the lameness pad. I explained to Four how to tell which leg was lame by watching the horse trot. He paid close attention and acted like he knew what I was talking about.

We finished the exam and treated Rex with just the right medicine to make him feel better. I told Four to hold on tight and screw down the next time he rode Rex, because Rex was gonna feel much better. This brought a concerned look to Four's face and he looked over at his dad for some advice. I could tell there was going to be a conversation on the drive home. It would be scary now after Rex started feeling better.

The little boy led the old gelding back across the parking lot and loaded him into the stock trailer like they had done it a thousand times together. Dad closed the back and fastened it, and the two of them headed to the front to pay.

I stood back and watched it all happen and smiled. What a wonderful job I have. What a wonderful part of America I get to see every day. What amazing people live here and raise their families to be salt-of-the-earth, hardworking citizens. And most of all, there is the relationship between a little kid and a kind old horse. Few things touch me more.

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

ILLUSTRATION BY MATT COLLINS; PHOTO BY VANESSA VAN RENSBURG/SHUTTERSTOCK.COM

Loose Stool?

- 7 strains of beneficial bacteria
- 10 billion CFUs*
- Supported by research in dogs and cats
- Easy to administer

PROVIABLE®-FORTE CAN HELP

Digestive health support that helps reestablish healthy intestinal balance.

PROVIABLE®-FORTE.COM

To order, contact your authorized PROVIABLE-FORTE distributor, or call Nutramax Laboratories Veterinary Sciences, Inc. at 1-888-886-6442.

*Measured in Colony Forming Units (CFUs)

010.1351.02

nutramax® LABORATORIES VETERINARY SCIENCES, INC.
946 Quality Drive • Lancaster, SC 29720
nutramaxlabs.com • 1-888-886-6442

Veterinary Loyalty Program
nutramaxlabs.com/loyalty

Clinic Staff Program
clinicstaff.nutramaxlabs.com

IDEXX

"IF THIS FACE DOESN'T CONVINCE YOU SOMETHING'S WRONG, I DON'T KNOW WHAT WILL."

Pets can't talk to you about their kidneys.

Now, the Catalyst® SDMA Test helps you assess kidney function **in-house** earlier than any other test.[1–3]

For deeper insights into kidney health, run SDMA whenever you run BUN and creatinine. Add the Catalyst SDMA Test to every in-house Catalyst chemistry panel so you can advise with confidence.

Order the Catalyst SDMA Test today at
idexx.com/ThisFace

References available at idexx.com/SDMA