BRAVECTO®
(FLURALANER)
TOPICAL SOLUTION

Pet owners already have a lot to remember. Give them one less thing to forget.

Only BRAVECTO® delivers up to 12 weeks* of flea & tick protection with one topical dose

Fewer doses = fewer potential gaps in protection = less stress for cats, pet owners, staff.[1]

Ask your Merck Animal Health Rep about BRAVECTO or Visit Bravectovets.com

*BRAVECTO kills fleas and prevents flea infestations for 12 weeks. **BRAVECTO Topical Solution for Cats** kills ticks (black-legged tick) for 12 weeks and American dog ticks for 8 weeks.

[1]BRAVECTO Topical Solution for Cats [prescribing information]. Madison, NJ: Merck Animal Health; 2016.

IMPORTANT SAFETY INFORMATION:

BRAVECTO Topical Solution for Cats: The most common adverse reactions recorded in clinical trials were vomiting, itching, diarrhea, hair loss, decreased appetite, lethargy, and scabs/ulcerated lesions. BRAVECTO has not been shown to be effective for 12-weeks' duration in kittens less than 6 months of age. BRAVECTO is not effective against American dog ticks beyond 8 weeks of dosing. For topical use only. Avoid oral ingestion. The safety of BRAVECTO has not been established in breeding, pregnant and lactating cats. Use with caution in cats with a history of neurologic abnormalities. Neurologic abnormalities have been reported in cats receiving BRAVECTO, even in cats without a history of neurologic abnormalities.

See other side for full Prescribing Information

BRAVECTO®

(fluralaner topical solution) for Cats

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

Description:
Each tube is formulated to provide a minimum dose of 18.2 mg/lb (40 mg/kg) body weight. Each milliliter contains 280 mg of fluralaner.

The chemical name of fluralaner is (±)-4-[5-(3,5-dichlorophenyl)-5-(trifluoromethyl)-4,5-dihydroisoxazol-3-yl]-2-methyl-*N*-[2-oxo-2-(2,2,2-trifluoroethylamino)ethyl]benzamide. Inactive ingredients: dimethylacetamide, glycofurol, diethyltoluamide, acetone

Indications:
Bravecto kills adult fleas and is indicated for the treatment and prevention of flea infestations (*Ctenocephalides felis*) and the treatment and control of *Ixodes scapularis* (black-legged tick) infestations for 12 weeks in cats and kittens 6 months of age and older, and weighing 2.6 pounds or greater.

Bravecto is also indicated for the treatment and control of *Dermacentor variabilis* (American dog tick) infestations for 8 weeks in cats and kittens 6 months of age and older, and weighing 2.6 pounds or greater.

Dosage and Administration:
Bravecto should be administered topically as a single dose every 12 weeks according to the **Dosage Schedule** below to provide a minimum dose of 18.2 mg/lb (40 mg/kg) body weight.

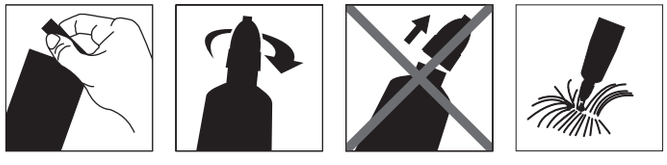
Bravecto may be administered every 8 weeks in case of potential exposure to *Dermacentor variabilis* ticks (see **Effectiveness**).

Dosage Schedule:

Body Weight Ranges (lb)	Fluralaner content (mg/tube)	Tubes Administered
2.6 – 6.2	112.5	One
>6.2 – 13.8	250	One
>13.8 – 27.5*	500	One

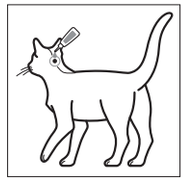
* Cats over 27.5 lb should be administered the appropriate combination of tubes.

Step 1: Immediately before use, open the pouch and remove the tube. Hold the tube at the crimped end with the cap in an upright position (tip up). The cap should be rotated clockwise or counter clockwise one full turn. The cap is designed to stay on the tube for dosing and should not be removed. The tube is open and ready for application when a breaking of the seal is felt.



Step 2: The cat should be standing or lying with its back horizontal during application. Part the fur at the administration site. Place the tube tip vertically against the skin at the base of the skull of the cat.

Step 3: Squeeze the tube and gently apply the entire contents of Bravecto directly to the skin at the base of the skull of the cat. Avoid applying an excessive amount of solution that could cause some of the solution to run and drip off of the cat. If a second spot is needed to avoid run off, then apply the second spot slightly behind the first spot.



Treatment with Bravecto may begin at any time of the year and can continue year round without interruption.

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

WARNINGS
Human Warnings:
Not for human use. Keep this and all drugs out of the reach of children.

Do not contact or allow children to contact the application site until dry.

Keep the product in the original packaging until use in order to prevent children from getting direct access to the product. Do not eat, drink or smoke while handling the product. Avoid contact with skin and eyes. If contact with eyes occurs, then flush eyes slowly and gently with water. **Wash hands and contacted skin thoroughly with soap and water immediately after use of the product.**

The product is highly flammable. Keep away from heat, sparks, open flame or other sources of ignition.

Precautions:
For topical use only. Avoid oral ingestion. (see **Animal Safety**).

Use with caution in cats with a history of neurologic abnormalities. Neurologic abnormalities have been reported in cats receiving Bravecto, even in cats without a history of neurologic abnormalities (see **Adverse Reactions**).

Bravecto has not been shown to be effective for 12-weeks duration in kittens less than 6 months of age. Bravecto is not effective against *Dermacentor variabilis* ticks beyond 8 weeks after dosing (see **Effectiveness**).

The safety of Bravecto has not been established in breeding, pregnant and lactating cats.

Adverse Reactions:
In a well-controlled U.S. field study, which included a total of 161 households and 311 treated cats (224 with fluralaner and 87 with a topical active control), there were no serious adverse reactions.

Percentage of Cats with Adverse Reactions (AR) in the Field Study

Adverse Reaction (AR)	Bravecto Group: Percent of Cats with the AR During the 105-Day Study (n=224 cats)	Control Group: Percent of Cats with the AR During the 84-Day Study (n=87 cats)
Vomiting	7.6%	6.9%
Pruritus	5.4%	11.5%
Diarrhea	4.9%	1.1%
Alopecia	4.9%	4.6%
Decreased Appetite	3.6%	0.0%
Lethargy	3.1%	2.3%
Scabs/Ulcerated Lesions	2.2%	3.4%

In the field study, two cats treated with fluralaner topical solution experienced ataxia. One cat became ataxic with a right head tilt 34 days after the first dose. The cat improved within one week of starting antibiotics. The ataxia and right head tilt, along with lateral recumbency, reoccurred 82 days after administration of the first dose. The cat recovered with antibiotics and was redosed with fluralaner topical solution 92 days after administration of the first dose, with no further abnormalities during the study. A second cat became ataxic 15 days after receiving its first dose and recovered the next day. The cat was redosed with fluralaner topical solution 82 days after administration of the first dose, with no further abnormalities during the study.

In a European field study, two cats from the same household experienced tremors, lethargy, and anorexia within one day of administration. The signs resolved in both cats within 48-72 hours.

In a European field study, there were three reports of facial dermatitis in humans after close contact with the application site which occurred within 4 days of application.

For technical assistance or to report a suspected adverse drug reaction, or to obtain a copy of the Safety Data Sheet (SDS), contact Merck Animal Health at 1-800-224-5318. Additional information can be found at www.bravecto.com. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.fda.gov/AnimalVeterinary/SafetyHealth.

Clinical Pharmacology:
Peak fluralaner concentrations are achieved between 7 and 21 days following topical administration and the elimination half-life ranges between 11 and 13 days.

Mode of Action:
Fluralaner is for systemic use and belongs to the class of isoxazoline-substituted benzamide derivatives. Fluralaner is an inhibitor of the arthropod nervous system. The mode of action of fluralaner is the antagonism of the ligand-gated chloride channels (gamma-aminobutyric acid (GABA)-receptor and glutamate-receptor).

Effectiveness:
In a well-controlled European laboratory study, Bravecto killed 100% of fleas 8 hours after treatment and reduced the number of live fleas on cats by > 98% within 12 hours after treatment or post-infestation for 12 weeks. In well-controlled laboratory studies, Bravecto demonstrated > 94% effectiveness against *Ixodes scapularis* 48 hours post- infestation for 12 weeks. Bravecto demonstrated > 98% effectiveness against *Dermacentor variabilis* 48 hours post-infestation for 8 weeks, but failed to demonstrate ≥ 90% effectiveness beyond 8 weeks.

In a well-controlled U.S. field study, a single dose of Bravecto reduced fleas by ≥99% for 12 weeks. Cats with signs of flea allergy dermatitis showed improvement in erythema, alopecia, papules, scales, crusts, and excoriation as a direct result of eliminating flea infestations.

Animal Safety:
Margin of Safety Study: In a margin of safety study, Bravecto was administered topically to 11- to 13-week (mean age 12 weeks)-old-kittens at 1, 3, and 5X the maximum labeled dose of 93 mg/kg at three, 8-week intervals (8 cats per group). The cats in the control group (0X) were treated with mineral oil.

There were no clinically-relevant, treatment-related effects on physical examination, body weights, food consumption, clinical pathology (hematology, clinical chemistries, coagulation tests, and urinalysis), gross pathology, histopathology, or organ weights. Cosmetic changes at the application site included matting/clumping/spiking of hair, wetness, or a greasy appearance.

Oral Safety Study: In a safety study, one dose of Bravecto topical solution was administered orally to 6- to 7-month-old- kittens at 1X the maximum labeled dose of 93 mg/kg. The kittens in the control group (0X) were administered saline orally. There were no clinically-relevant, treatment-related effects on physical examination, body weights, food consumption, clinical pathology (hematology, clinical chemistries, coagulation tests, and urinalysis), gross pathology, histopathology, or organ weights. All treated kittens experienced salivation and four of six experienced coughing immediately after administration. One treated kitten experienced vomiting 2 hours after administration.

In a well-controlled field study Bravecto was used concurrently with other medications, such as vaccines, anthelmintics, antibiotics, steroids and sedatives. No adverse reactions were observed from the concurrent use of Bravecto with other medications.

Storage Conditions:
Do not store above 77°F (25°C). Store in the original package in order to protect from moisture. The pouch should only be opened immediately prior to use.

How Supplied:
Bravecto is available in three strengths for use in cats (112.5, 250, and 500 mg fluralaner per tube). Each tube is packaged individually in a pouch. Product may be supplied in 1 or 2 tubes per carton.

NADA 141-459, Approved by FDA
Distributed by:
Intervet Inc (d/b/a Merck Animal Health), Madison, NJ 07940

Made in the USA.

159363 R3 017392
Rev. 09/16

MERCK
Animal Health

dvm360 Find it all here.™

March 2019 | Volume 50 | Number 3 | dvm360.com

A med student walks into a zoo ...

... and discovers a One Health opportunity just waiting to be born.

page 12

Farm bill changes the game on hemp

Cannabis sativa L no longer defined as illegal substance as long as products derived from it contain less than 0.3% THC. *By Katie James*

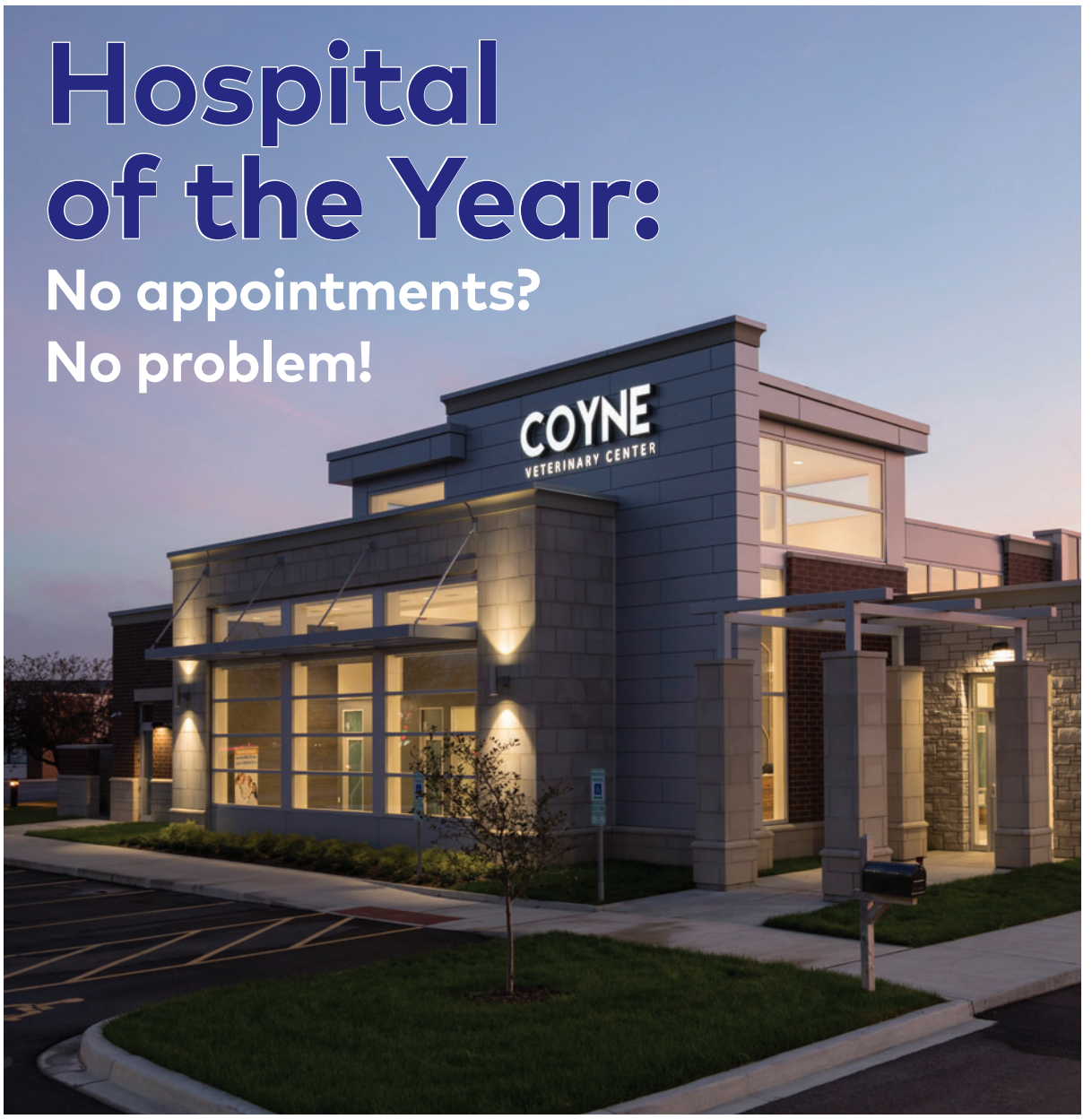
Hemp, cannabidiol, CBD—regardless of what it's called, products containing compounds derived from the cannabis plant are a hot topic in both animal and human health for their potential benefits. But the murky legal status and regulations surrounding the flood of these products to the market make it difficult for veterinary practitioners to advise pet owners who may want to give them to their pet. That may soon change.

In December, HR 2, the Agriculture Improvement Act of 2018, also known as the Farm Bill, was signed into law, and it includes provision to remove industrial hemp, or Cannabis sativa L, and its derivatives from the Controlled Substance Act. More specifically, products that contain compounds derived from the plant that contain

See page 10>

Hospital of the Year:

No appointments? No problem!

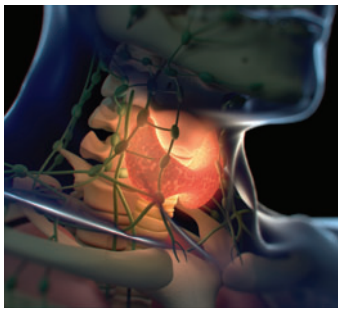


This Indiana hospital supports the team and keeps wait times to a minimum, all while wowing clients with its beauty.

See page 20>

Relax your brain by fighting against decision fatigue

page 28



'I got thyroid cancer': A technician warns her colleagues

page 18

Shutting down angry tirades in the workplace

page 36

Don't fear the down dog in your general practice

page M1

Prescribe

peace of mind.

Powerful protection can also be gentle:

- ✓ Safe for puppies as young as 8 weeks of age weighing 4 lbs or more
- ✓ Over 140 million doses of afoxolaner have been prescribed[1]
- ✓ And it's the only flea and tick control product indicated for the prevention of *Borrelia burgdorferi* infections as a direct result of killing *Ixodes scapularis* vector ticks

NexGard®
(afoxolaner) Chewables

What one little chew can do

IMPORTANT SAFETY INFORMATION: NexGard is for use in dogs only. The most frequently reported adverse reactions include vomiting, pruritus, lethargy, diarrhea 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 or neurologic disorders. For more information, see the full prescribing information or visit www.NexGardClinic.com.

[1]Data on file.

Boehringer Ingelheim

Please see Brief Summary on page 03.

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**
Content Marketing Director | **Adrienne Wagner**
Associate Editorial Director | **Maureen McKinney**
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**
Designer | **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

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 | **Kristina Bildeaux**
(507) 895-6758 | kristina.bildeaux@ubm.com

MultiMedia Healthcare LLC

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

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 industrymatter.com. **List Rental Sales:** Call Anne Belcher at (913) 871-3876, or write anne.belcher@ubm.com. **Editorial Offices:** MultiMedia Healthcare LLC, 11140 Thompson Ave., Lenexa, KS 66219; 913-871-3800. **Websites:** dvm360.com; fetchdvm360.com.

DIRECTOR'S CUT | Kristi Reimer Fender

Decision fatigue: Choose to take note

Too many choices leads to a tired brain and poor well-being.

"Blue Apron saved my marriage." Those are the words I remember most from the lecture given by Beckie Mossor, RVT, at the AVMA Convention last year. The back story? Mossor and her husband used to come home from work, exhausted and starving, and argue about what to make for dinner. After they signed up for a meal-delivery service, those hangry discussions disappeared and they could simply focus on cooking together. The moral of the story is that you can improve your life by putting some decisions on auto-pilot, because making tens of thousands of decisions every day fatigues the brain and depletes the emotions.

Mossor's explanation of the concept of decision fatigue resonated with me, and I thought it might with you too. The result is on page 28—I hope you decide to check it out!

fetch™
dvm360 CONFERENCE

We believe in evidence-based learning (and fun)

At our conferences you'll find yoga and meditation and the opportunity to tackle your issues and focus on yourself. But you'll also find top-notch clinical CE that keeps you up to date on the most important issues delivered by thought leaders and innovators in the field.

At Fetch dvm360 conference, you'll get:

- ✓ Resources you need for every problem you face
- ✓ Inspiration to love your job again
- ✓ Connections with like-minded peers

Take your CE to the next level.

We have three dates and locations each year.

Go to fetchdvm360.com to learn more.

Register today.

Your registration form for Baltimore

Fetch dvm360 • Baltimore • May 2 - 5, 2019

fetch dvm360 CONFERENCE

Which best describes your role? (Please use a separate registration form for each attendee.)

☐ Associate veterinarian ☐ Practice owner ☐ Technician ☐ Practice manager
☐ 2019 student ☐ 2019 veterinary grad ☐ Hospital staff ☐ Spouse

First name (exactly as you want it to appear on your Last name Degree

Street address: PLEASE SELECT ONE ➤ ❍ Work address ❍ Home address

Country Email address (for confirmation, proceedings links, etc.)

Daytime telephone number with area code

Veterinarians: Associates & practice owners

					By 2/4/19	After 2/14/19
❑ Veterinarian (four-days)					$549	$679
❑ Veterinarian (two-days, please note days)	Thursday	Friday	Saturday	Sunday	$469	$589
❑ Veterinarian (one-day, please note day)	Thursday	Friday	Saturday	Sunday	$349	$479
❑ 2019 veterinary graduate —(Please provide a diploma.)					$259	$389
❑ 2019 veterinary student —(No CE granted.)					$55	$70

Practice Managers/Technicians / Assistants

❑ Practice manager (non-veterinarian)					$329	$459
❑ Veterinary technician (four-days)					$329	$459
❑ Veterinary technician (three-days)	Thursday	Friday	Saturday	Sunday	$299	$429
❑ Veterinary technician (two-days)	Thursday	Friday	Saturday	Sunday	$269	$399
❑ Veterinary technician (one-day)	Thursday	Friday	Saturday	Sunday	$219	$349
❑ 2019 veterinary technician student (Please provide a copy of your current class schedule.)					$55	$70

Spouses

❑ Spouse attending seminars (non-veterinarian)					$329	$459

Guests

We welcome your guests who don't work in the veterinary industry. Guest badges will give your friends and family access to the exhibit hall for the welcome party. Veterinarians, technicians, practice managers, and team members must register and pay registration fees. (A $5 processing fee will be charged for guest badges added on site.)

First name Last name

First name Last name

Payment information

Credit Card: Please fill in credit information.

Card number Expires Security Code

❑ American Express ❑ Discover ❑ MasterCard ❑ Visa

Cardholder name:

Core program	$
Clinical techniques	$
Addl. proceedings	$
Total	$

Credit card expiration must be valid through May 2019. Cancellation must be requested in writing by mail, fax, or email and received by March 27, 2019. A $50 processing fee applies.

Register by phone: 800.255.6864, ext. 6

Register online: www.fetchdvm360.com/register

Mail to: 11140 Thompson Ave., Lenexa, KS 66219

CONTENT | inside

dvm360 Find it all here.
Volume 50, Issue 3

ON THE COVER

Hospital of the Year: No appointments? No problem!

» More-Than-8,000-Square-Foot Hospital of the Year **page 20**
» Farm bill changes the game on hemp **continued on page 10**

MEDICINE360

The small animal section begins after **page 42**.

PRODUCTS360

COMMUNITY

EQUINE

SPECIAL CONTRIBUTORS

READER SERVICES

CLASS IV LASER THERAPY

ON DEMAND

PAY-PER-TREATMENT PROGRAM

A NEW WAY TO ADD LASER THERAPY INTO YOUR PRACTICE

With the On Demand program you will receive a Platinum 4 therapy laser, **risk-free** and with **no upfront expense.**

Here's how it works:

- We train your staff to expertly use the laser
- You purchase treatment credits
- Your patients recover better and faster with laser therapy

K-LASER® USA

www.k-laser.com | info@k-laser.com | 866-595-7749

Hill's®
Transforming Lives™

SEE GI ISSUES IN A NEW LIGHT WITH MICROBIOME SCIENCE

NEW Hill's® Prescription Diet® Gastrointestinal Biome's groundbreaking ActivBiome+™ Technology revolutionizes the way you tackle fiber-responsive GI issues by putting microbiome health at the forefront of GI care.

FORMULATED TO UNIQUELY WORK IN TWO WAYS:

ActivBiome+™

1. **Breakthrough synergistic blend** of natural fibers promotes regular healthy stool
2. Shown to **nourish and activate gut microbiome** to support digestive health and well-being[1]

Ask your Hill's rep about this revolutionary, great-tasting nutrition — also available in an irresistible stew.

Learn More: HillsPet.com/Microbiome

[1]Hill's data on file. Clinical study on microbiome changes in cats.

LET'S STAY AHEAD OF EVERY GI ISSUE

NUTRITIONAL MANAGEMENT OF DOGS WITH GI DISORDERS

GI DISORDERS	FAT SENSITIVE DISORDERS	FIBER-RESPONSIVE ENTEROPATHIES, ANTIBIOTIC-RESPONSIVE DIARRHEA, CONSTIPATION, DIARRHEA *	FOOD-RESPONSIVE ENTEROPATHIES	ADVERSE FOOD REACTION
i/d®	i/d® Low Fat	NEW	i/d® Sensitive	z/d®
Suspected Stress Colitis → i/d® Stress				z/d® d/d®

NUTRITIONAL MANAGEMENT OF CATS WITH GI DISORDERS

GI DISORDERS	CONSTIPATION, FIBER-RESPONSIVE ENTEROPATHIES, ANTIBIOTIC-RESPONSIVE DIARRHEA, DIARRHEA, MEGACOLON *	ADVERSE FOOD REACTION
i/d®	NEW	z/d®
		z/d® d/d®

* Consider Prescription Diet® w/d® as a secondary option, particularly in obese-prone dogs and cats

Hill's PRESCRIPTION DIET®

Farm bill

> Continued from the cover

less than 0.3 percent of tetrahydrocannabinol (THC), the psychoactive compound found in the plant, will be legal. Those that contain a higher percentage of THC will still be subject to Schedule I controlled substance regulations, according to an announcement about the bill from the AVMA.

It just might mean the next time a pet owner comes into your hospital asking for guidance on CBD chews for Max's osteoarthritis, you may not have to dance around the subject uncomfortably.

The bill notes that while it loosens the regulations for cannabis in the Controlled Substance Act, regulations established in the federal Food, Drug and Cosmetic Act and the Public Health Service Act have not been removed or altered, which will allow the FDA to still monitor label claims for products containing Cannabis sativa L and provide regulatory guidance.

The FDA released a lengthy statement from Commissioner Scott Gottlieb, MD, about the removal of the substance from the act, clarifying the agency's authority over products containing industrial hemp.

"In short, we treat products containing cannabis or cannabis-derived compounds as we do any other FDA-regulated products—meaning they're subject to the same authorities and requirements as FDA-regulated products containing any other substance," says Dr. Gottlieb in the statement.

He also discusses products not approved by the FDA that claim to contain cannabis-derived compounds, such as CBD. "Among other things, the FDA requires a cannabis product (hemp-derived or otherwise) that is marketed with a claim of therapeutic benefit, or with any other disease claim, to be approved by the FDA for its intended use before it may be introduced into interstate commerce. This is the same standard to which we hold any product marketed as a drug for human or animal use."

Products containing cannabis-derived ingredients that claim to diagnose, mitigate, cure or prevent diseases are considered new drugs or new animal drugs and must go through the proper FDA drug approval process before they can be marketed to human or animal patients in the United States. Failure to follow this process is illegal, the statement notes.

The agency says it plans to create clear pathways through its approval process for companies wishing to introduce new products into the marketplace. It also plans to hold a public meeting for stakeholders to discuss cannabis and its derivatives and its place in human and animal health, the statement concludes.

"We recognize the potential opportunities that cannabis or cannabis-derived compounds could offer and acknowledge the significant interest in these possibilities. We're committed to pursuing an efficient regulatory framework for allowing product developers that meet the requirements under our authorities to lawfully market these types of products," says Dr. Gottlieb.

What does this mean for practitioners? It just might mean that the next time a pet owner comes into your hospital asking for guidance on CBD chews for Max's osteoarthritis, you may not have to dance around the subject uncomfortably. As the AVMA puts it, "This has implications for the potential use of these products for a variety of purposes."

The AVMA has also created a quick sheet of all the animal health-related items in the Farm Bill, which can be accessed at avma.org.

PHOTONIC/STOCK.ADOBE.COM

Vet student faces fraud charges

Tuskegee vet school student indicted in Alabama, North Carolina for allegedly selling rescue horses for slaughter. *By Anissa Fritz, Contributing Writer*

Fallon Blackwood, a 24-year-old veterinary student at Tuskegee University, was indicted in October of 2018 by the state of Alabama on 13 counts of acquiring a horse under false pretense with the intent to defraud. Blackwood has similar charges against her in North Carolina. Reports on sites such as netposse.com, the online home of Stolen Horse International, accuse Blackwood of offering to rehome horses in need but actually selling them to slaughterhouses for cash instead.

The 13th count of the indictment involves the experience of Lindsay Rosentrator, who spoke with dvm360 recently about her dealings with Blackwood.

Rosentrator says she went to school for equestrian studies and equestrian law and ethics in addition to being around horses for most of her life. So when the financial obligation of keeping her horse Willie became too much, she made a Facebook post hoping to find him a new home. It wasn't long before Rosentrator received a message from Blackwood, who claimed to be in need of a pasture mate for her own horse.

"She told me she was a vet student," Rosentrator says. "She told me she had been around horses her whole life and that she was on track to graduate."

The day Blackwood came to Rosentrator's residence to view Willie, she arrived with a trailer, Rosentrator says. Blackwood wanted to take Willie that day, but Rosentrator says they hadn't agreed to that. She told Blackwood she wasn't ready—she needed more time and didn't have a formal contract written up. But Blackwood had a rebuttal to everything, Rosentrator says.

"She said she wouldn't be able to come back the following weekend because she was about to start rotations in vet school, which was going to entail her being on call every weekend. So she wasn't going to be able to get away again soon since we were a three-hour drive for her," Rosentrator says.

Rosentrator says Blackwood came across as patient, mature and introverted that day. She says she thought that Blackwood, being a veterinary student, would be able to offer her horse a great home, and that she needed to take advantage of the opportunity before it was gone. "That's what made my decision have to be so quick," Rosentrator says. "She's very convincing."

Using a spiral notebook she had in her car, Rosentrator wrote up an informal contract stating that Blackwood would be receiving ownership of Willie for zero dollars and if anything were to happen, Rosentrator would have first right of refusal to take the horse back from Blackwood. Later that evening, Rosentrator emailed a digitized copy of the agreement to Blackwood to sign.

She never sent it back.

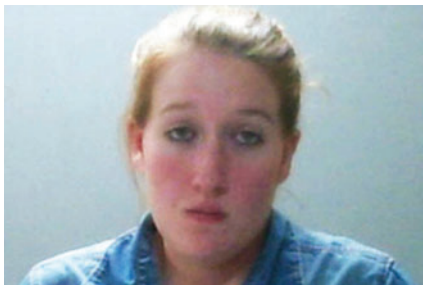
In the following weeks, Rosentrator says she reached out to Blackwood a few times, asking for pictures of Willie. But Blackwood wouldn't comply, claiming she was in class, off the property or busy. It was then that Rosentrator went online and found that Blackwood allegedly did business with kill-buyers, according to several rescue groups.

"I could never fathom doing that to any kind of animal. I didn't realize that someone going to school to protect and help animals could do something so ... heinous," Rosentrator says.

Blackwood is now tied to more than 50 missing horse reports from Stolen Horse International.

Pamela Miller, reports manager at Stolen Horse International, says people like Blackwood are often looking for a quick way to make money.

"It's probably to pay for her veterinary school ... She got all these horses for free. So she turned around and either sold them at an auction house or



worked with a kill-buyer to have them shipped down to Mexico," Miller says.

According to Miller, horses brought to slaughterhouses in Mexico are sold for approximately 50 cents a pound. She estimates that over 95 percent of the horses in the cases against Blackwood had medication in their systems, meaning they shouldn't have been slaughtered for consumption. Willie, for example, was on ringbone medications.

"The medication that was in that horse's body is now being consumed by individuals or animals. It's not healthy. It can cause [the consumer] medical problems," Miller says.

According to the online reports, Blackwood used the same story for all of the horses she obtained. After identifying horses in need of homes on Facebook and Craigslist, she messaged the owners claiming to need a pasture mate for her horse. She told the owners she didn't have any money but the horse would be under the best medical care because she was a vet student.

Both Rosentrator and Miller recommend that before completing a rehoming transaction, horse owners obtain background checks and call the organization in question as well as any references. In addition, Miller suggests microchipping the horse and taking pictures of the individual taking the horse.

Blackwood was arrested at an Alabama rodeo on January 15. She quickly posted $15,000 bail from Blount County Jail and has returned to class, according to local media reports.

PHOTO COURTESY OF BLOUNT COUNTY JAIL

A **medical student** walks into a **ZOO**

What happens when an Ivy League student does a rotation at a zoo? A new One Health opportunity is born. *By Ericka Cherry*

The Franklin Park Zoo is not where you'd expect to find a Harvard Medical School student, but Gilad Evrony, MD, PhD, is prone to out-of-the-box thinking.

Inspired by Barbara Natterson-Horowitz, MD, and Kathryn Bowers' 2013 book *Zoobiquity*—an examination of how animal and human commonalities can be used to diagnose, treat and heal patients of all species—Dr. Evrony embarked on an independent study that can only be described as wild.

"I was fascinated by the world of physiology across the animal kingdom, so I called up the zoo in Boston and spoke with the head of veterinary medicine about doing a rotation with them," Dr. Evrony says.

The call Dr. Evrony made to Eric Baitchman, DVM, DACZM, vice president of animal health and conservation, ended up being serendipitous. Dr. Baitchman was pondering a similar program where medical students would shadow members of the zoo's animal health team.

Once word got out, other students began doing rotations with the zoo as an independent study option. Dr. Baitchman's experience with Dr. Evrony convinced him that this elective could be valuable to other students. So, working with the Harvard Medical School faculty, Dr. Baitchman helped formalize the elective offering in the school's course catalog in 2017.

"It is my sincere hope that as these students continue through their careers, they see beyond the single patient they are treating and see all their patients within the context of the ecosystem they live in," Dr. Baitchman says. "If the future physicians that we are teaching at the zoo go on to promote the global benefits of biodiversity preservation for human health, it could have a profound impact."

At its core, One Health—and Harvard Medical School's One Health clinical elective—addresses the connection between humans, animals

A Harvard Medical School student examines a Baird's tapir with the help of the veterinarians at the Franklin Park Zoo.

PHOTO COURTESY OF THE FRANKLIN PARK ZOO

and the environment. It seeks to create the optimal health for all species within a shared environment.

For Dr. Evrony, the experience opened his eyes to a wider world of cross-pollinating possibilities: "When I came back to the world as a medical student, I began to see all these possibilities for research. There's so much diversity out there that human doctors don't experience. Metaphorically speaking, the veterinarians and I spoke the same language; we just spoke it with different accents."

And what if this type of rotation isn't available to medical students at other institutions?

It would seem fairly simple to create opportunities for medical students to interact veterinary students at the same university. But as Marcy Souza, DVM, MPH, DABVP (avian), DACVPM, associate professor in the Department of Public Health at the University of Tennessee, points out, that isn't always possible.

"A lot of veterinary schools are located on agricultural campuses, so veterinary and medical students are geographically separated from each other," Dr. Souza says. "But I've always wondered what good would come out of combining veterinary and medical schools in the early years."

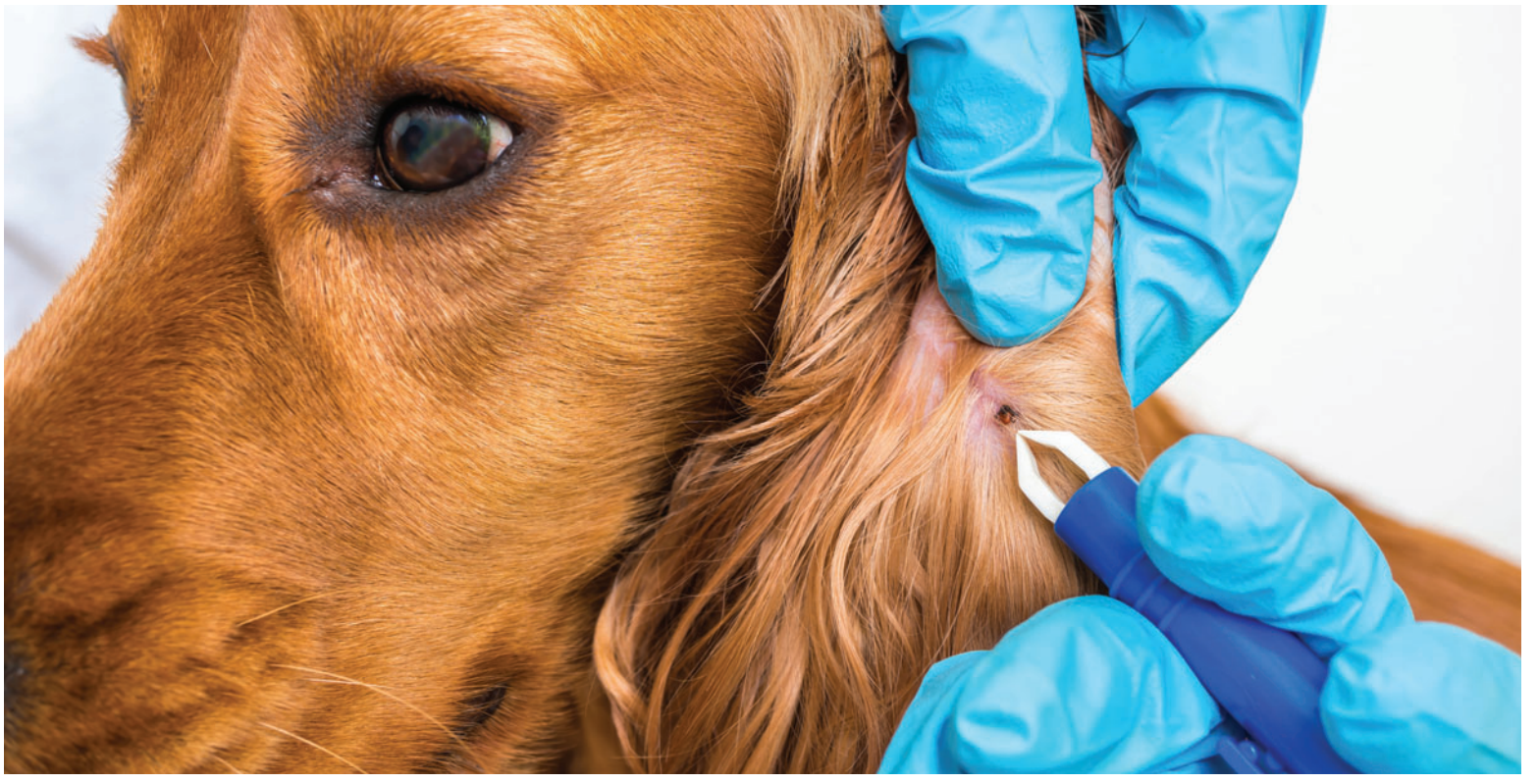
Jenifer Chatfield, DVM, DACZM, staff veterinarian at 4J Conservation Center, an instructor for federal emergency management courses and a regional commander for the National Disaster Medicine System Team, thinks medical students should consider small animal practices for a similar opportunity.

"Sixty-five percent of American households live with an animal, so it would be useful for medical students to interface with a regular practitioner," Dr. Chatfield says. "It makes me think of this case where doctors were having a difficult time diagnosing a patient. While the patient was in the hospital, her dog was taken to the vet and diagnosed with lepto. If the doctors had thought to ask her if she had a dog, her diagnosis might have come sooner. It's all about understanding that patients don't live in a vacuum."

These real-life connections happen at the Franklin Park Zoo during the One Health Clinical Elective all the time. Students come to Dr. Baitchman during the course of their rotation with unique research proposals. He mentions one memorable proposal that considered using new genomic sequencing technology to better characterize immunologic differences between amphibian species that are sensitive or resistant to chytridiomycosis, a devastating disease that results in the decline of wild amphibians worldwide.

"The massive decline in amphibians in the tropics, and the resultant loss of biodiversity in those ecosystems, has important implications for human and ecosystem health. This is a direct application of One Health," Dr. Baitchman says.

One Health depends on the collaboration between veterinarians and physicians, whether the collaboration happens during the examination of a Baird's tapir at the Franklin Park Zoo or in a simple conversation with a classmate in the university.



Lyme spreads to areas thought to be low-risk

Disease in dogs may mean higher threat to people, researchers say.

The Companion Animal Parasite Council (CAPC) recently released a study that shows that Lyme disease is spreading to regions not previously thought to be at risk for tick-borne disease. States such as Illinois, Iowa, North Dakota, Ohio, Michigan, Tennessee and West Virginia have all seen an increase in the prevalence of Lyme disease, according to a release discussing the study, which CAPC conducted from January 2012 to December 2016. Results from the study were recently published in *Environmetrics*.

"The results show increasing risk for Lyme disease in endemic areas and pinpoint regions in the U.S. where Lyme is spreading—areas not historically considered endemic," says Michael Yabsley, PhD, a professor in the Department of Population Health, College of Veterinary Medicine and Warnell School of Forestry and Natural Resources at the University of Georgia. "This expanding risk of Lyme disease demands heightened vigilance in protecting both our pets and our families."

Results suggest that canine prevalence rates for Lyme disease are rising and in areas traditionally not considered to be of high Lyme risk, suggesting that human risk may also be increasing.

Significant increases in canine Lyme prevalence have been seen in some areas that are not yet reporting significant human incidence. Researchers speculate that canine prevalence is more sensitive to changes in Lyme risk and could serve as an early warning system for changes in human risk.

The study was created to investigate regional trends in the prevalence of antibodies to *Borrelia burgdorferi*, the disease-causing bacterium of Lyme disease, according to the release. To conduct the research, the CAPC team analyzed more than 16 million Lyme tests from domestic dogs in the U.S. over 60 months. The serologic data was provided by IDEXX Laboratories.

"CAPC research shows the risk for Lyme disease is not static. The way it's changing varies spatially across the country," says Christopher McMahan, associate professor in the department of mathematical sciences at Clemson University, in the release.

Crucial in the fight against Lyme, Yabsley says, is year-round tick protection. Different species of ticks are active all 12 months of the year, and ticks that transmit Lyme are active at different times in the year in different regions, the release states. For instance, as you move further south, adult ticks are more active in the winter.

"I've been practicing for over 34 years in Nashville where many people don't think Lyme disease is a concern. But I've seen canine Lyme increasing for several years and regularly test and vaccinate for the disease," says Craig Prior, BVSC, CVJ, a veterinarian and former owner of VCA Murphy Road Animal Hospital in Nashville, Tennessee. "Many people tend to believe that if they don't go on hikes or spend time in wooded areas, they aren't at risk for Lyme. Ticks are everywhere—including suburban and gated communities where deer, raccoons, opossums, birds and other hosts frequent back yards. That's why CAPC recommends year-round tick prevention for dogs—and cats—and regular screening to protect dogs from this debilitating disease that can be extremely hard to treat."

ANDRIANO CZ/STOCK.ADOBE.COM

NVA congratulates Angelina Morgan on winning the 2018 dvm360/VHMA Practice Manager of the Year.

dvm360

Practice Manager of the Year.

Angelina Morgan, CVPM

Hospital Administrator
Pet + ER Towson and Columbia, MD

We're thrilled to see one of our team members, Angelina Morgan, recognized for all she has contributed to the veterinary profession. Our dedicated Specialty + ER Hospital business is designed to support the specific needs of our skilled local specialists and their teams. NVA rises to the unique challenges associated with providing quality care, and our passionate, visionary local hospital leaders embody our unique entrepreneurial spirit. We are building a thriving community united by our love of animals and the people who love them.

Over 600 thriving partnerships.
General Practice Hospitals | Specialty + ER Hospitals | Equine Hospitals | Pet Resorts

NVA.com | 866.767.7755

NVA Specialty+ER

Did it happen if it wasn't posted on social media?

How veterinary professionals behave online

Your colleagues are checking social media more times each day than a year ago, according to recently updated, exclusive dvm360 research study "What Vets Think."

In our annual study* of "What Vets Think" we took a hard look at how veterinary professionals are managing their work and life online. Like much of the world, the industry relies on digital resources to function. And while veterinary professionals across generations are using social media at about the same rates year over year, we see that frequency has increased. Last year, 50 percent of veterinary professionals checked their feeds several times a day. This year, that rose to 55 percent, with about 19 percent of respondents reporting they check it "(So) many times a day."

Given it's a competitive market, where vet professionals are constantly bombarded by messaging from all sorts of competing sources, we wondered: What are the go-to resources, platforms and channels? What serves them best?

Here the generational breakdown is particularly interesting, with millennial professionals classifying peer connections as much more important than connecting with clients (although that percentage has increased slightly since last year). Another generational split to note is how millennial professionals are looking to social media to follow industry influencers at a much higher rate than previous generations.

Which platforms are favored by different generations? We're particularly excited to report that millennial veterinary professionals are using Instagram as much as they are—13 percent more than last year, and 12 percent more than the rest of the survey respondents. At the moment, @dvm360mag Instagram has over 5,000 followers (currently blowing the competition out of the water).

**The 2018 What Vets Think study was distributed in September 2018 and garnered 1,057 total responses. The margin of error is 3%.*

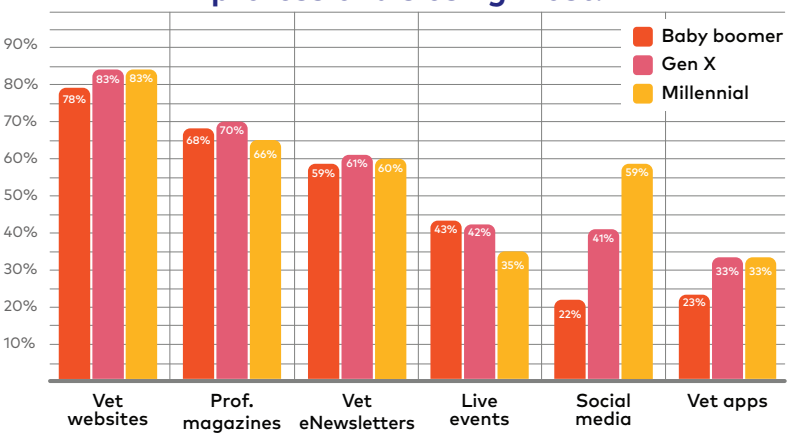
How much of the market is using social media?

91% of millennials

88% of gen x

78% of baby boomers

Which media channels are veterinary professionals using most?



Which platforms are favored by different generations?

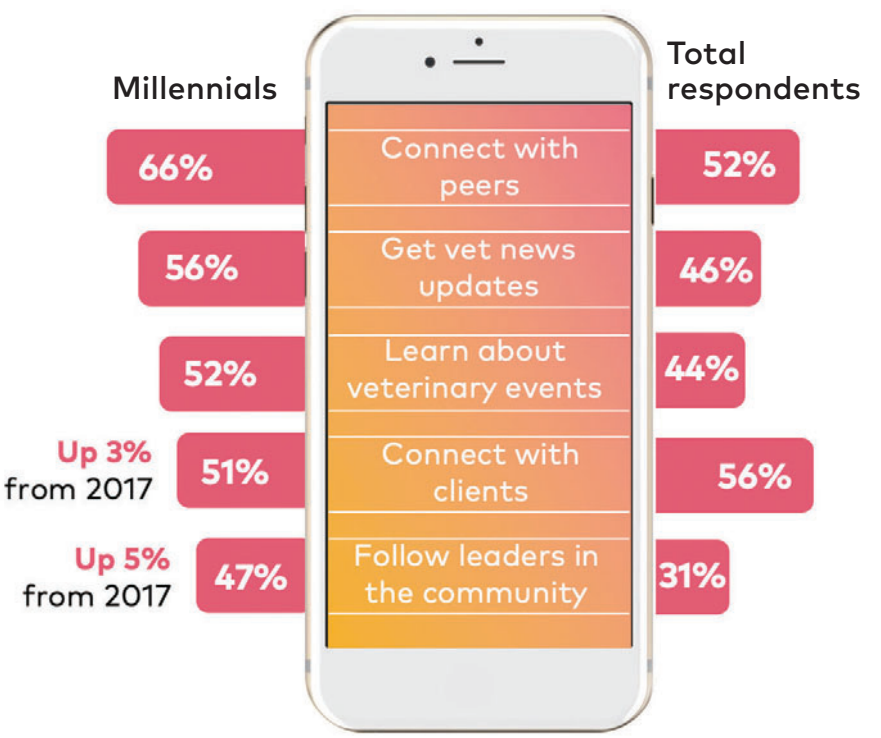
73% of millennials use Facebook, compared to **63%** of total respondents

22% of millennials use Instagram, compared to **10%** of total respondents

Millennial veterinary professionals are using Instagram **13%** more than they were in 2017

At the moment, @dvm360mag has over **5,000** Instagram followers *(currently blowing the competition out of the water).*

How do different generations prioritize their social media use?



MAHOD84/STOCK.ADOBE.COM

PURINA®
PRO PLAN® VETERINARY SUPPLEMENTS

WHAT IF...

A PROBIOTIC COULD HELP ANXIOUS DOGS FEEL CALMER?

Introducing Purina® Pro Plan® Veterinary Supplements Calming Care with *Bifidobacterium longum* (BL999), a probiotic strain shown to help dogs maintain calm behavior. In a blinded crossover design study, **90% of dogs showed an improvement** in displaying anxious behaviors such as jumping, pacing, and spinning*.

Helps dogs cope with external stressors like separation, unfamiliar visitors, novel sounds, or changes in routine and location

Helps dogs maintain positive cardiac activity during stressful events, promoting a positive emotional state

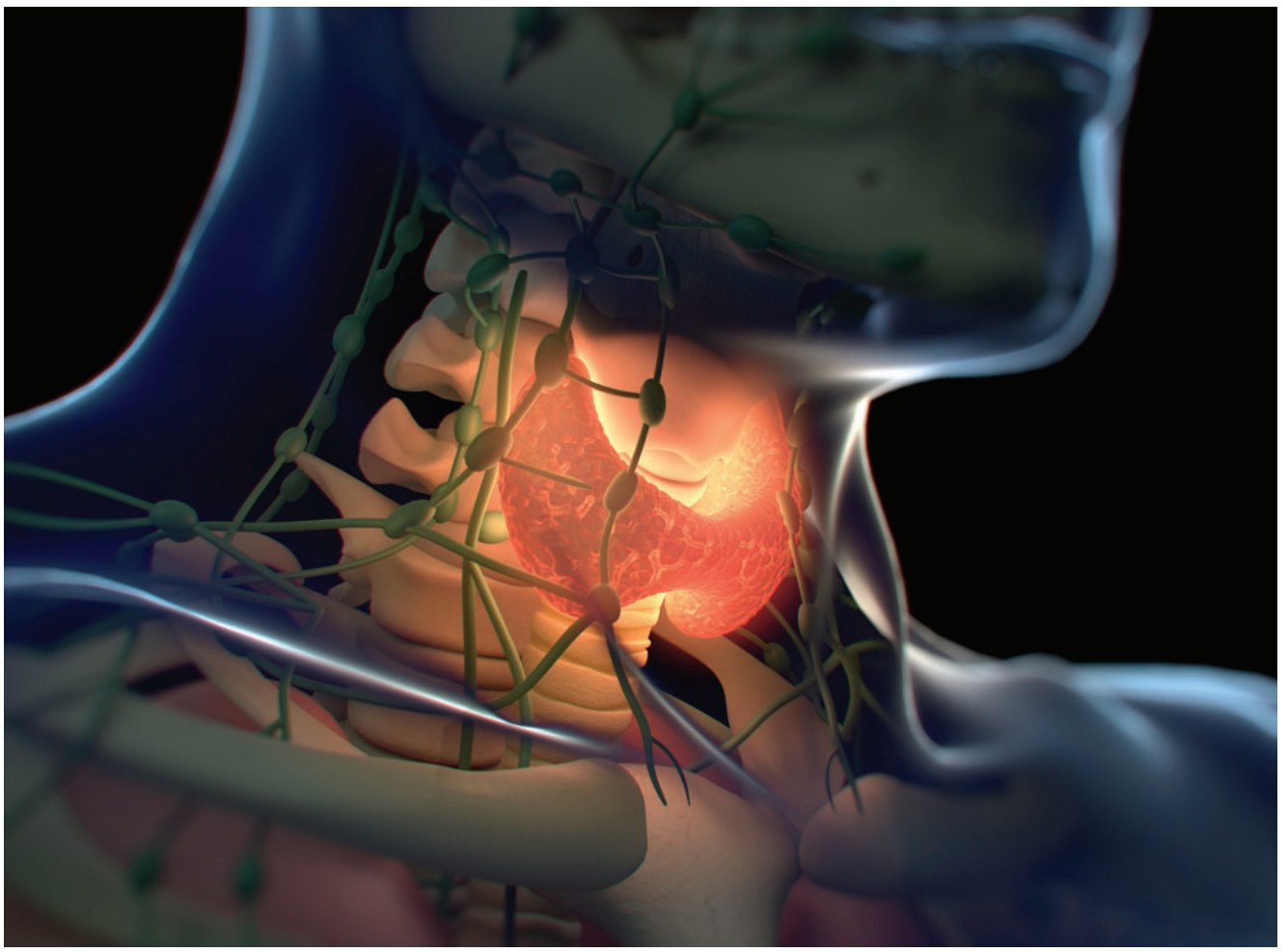
Helps blunt cortisol response to anxious events and supports a healthy immune system

LEARN MORE ABOUT NESTLÉ PURINA'S PROBIOTIC RESEARCH AT **PURINAPROPLANVETS.COM.**

1-800-222-8387 (8:00 AM - 4:30 PM CST M-F) | Talk to your Purina Veterinary Consultant

*McGowan, R. T. S. (2016). "Oiling the brain" or "Cultivating the gut": Impact of diet on anxious behavior in dogs. Proceedings of the Nestlé Purina Companion Animal Nutrition Summit, March 31-April 2, Florida, 91-97.

PURINA® Your Pet, Our Passion.®



Protect your thyroid

I got sick after decades of taking radiographs as a veterinary technician. Learn from my mistakes. Protect yourself. *by Naomi Strollo, RVT*

I will never forget the first time I was allowed to take radiographs. I was 18 years old and wanted to get into veterinary technology school. When the veterinary technician had me put on the lead apron for the first time, I felt the responsibility. I tied myself in and held the pet on the table the way she told me. She pressed the pedal down, and I heard a loud noise. That was it—the X-ray was done.

We both squeezed into a little dark room while she explained dipping the films in developer and fixer. I'll never forget that chemical smell and the fact that there was no ventilation in that room. Then we hung the films to dry. I was so proud to move on to the next level of my training and to become a veterinary technician.

Little did I know that for years no one was looking out for me—or my thyroid. No one was explaining the dangers of what can happen to my thyroid with constant radiation exposure. I did finish school, and I did become a registered veterinary technician in Ohio. We did briefly skim over radiation safety. We were also told that this was low-level radiation. We had radiation badges, but they weren't emphasized. In fact, when we went to clinicals, we didn't take them with us, so I don't remember how our radiation was monitored during internships.

'You were criticized if you dared to reach for a glove'

In my first job as an RVT, the manager told me I would get a badge eventually. Just take the X-rays, I was told, and they would order me one. I don't know if they ever did order me one, because I never saw it.

I tried to wear gloves, because I remember in school the awful pictures of people who didn't wear gloves and their hands becoming disfigured. Holding wiggly pets with gloves was a challenge. I was told to take off the gloves so I could better keep the pet still. There were no thyroid collars to be found.

Later, I moved on to a specialty and emergency facility with all the advanced machines and monitors. This practice had specialty veterinarians and an MRI machine. We did get X-ray badges at this facility. They were all lined up nicely on the wall as you walked into the big area where they take X-rays.

There was no door and no way to let anyone know when someone was taking X-rays. Someone just had to yell, "Shooting!" before hitting the pedal. No one ever bothered to move those badges. They always stayed in perfect alphabetical order. Thyroid collars were still unheard of, and you

dvm360 Find it all here.

Safety first

What are you missing when you and your team take radiographs? Check your basics in the short video at dvm360.com/imagingtip.

ANATOMY INSIDER/STOCK.ADOBE.COM

With an educational grant provided by:

BAYER

dvm360 toolkit

Do your heartworm protocols need an update?

Here's your reminder postcard.

p.3

HEARTWORM

March 2019
dvm360.com/heartwormtoolkit

One month of active heartworm prevention.

Zero days off.

Coraxis™ (moxidectin) Topical Solution for Dogs is transdermal moxidectin that achieves and sustains high serum levels and keeps killing susceptible stages of heartworms for 30 days. Administered monthly, Coraxis™ also treats and controls hookworms, roundworms and whipworms to work hard for your clinic and your patients.

Add the power of 30-day heartworm protection to your portfolio.
Visit coraxis.com or contact your Bayer sales representative.

CORAXIS™
(moxidectin)

1 dose.

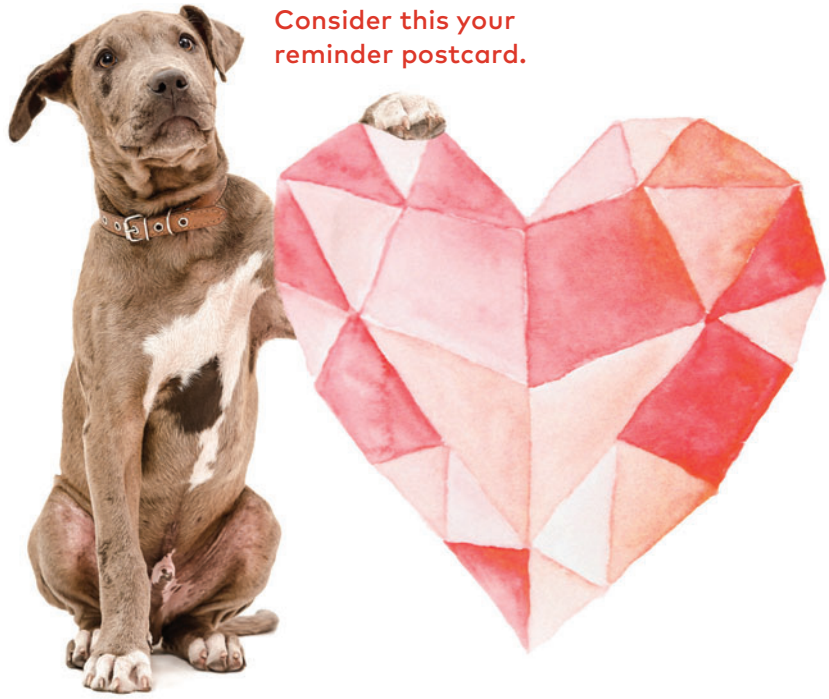
6 parasites.

30 days.

That's Coraxis.™

Coraxis™ is not approved for the treatment of adult *D. immitis*.
CAUTION: Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian. WARNING: **DO NOT ADMINISTER THIS PRODUCT ORALLY.** For the first 30 minutes after application ensure that dogs cannot lick the product from application sites on themselves or other treated animals. Children should not come in contact with the application sites for two (2) hours after application. (See Contraindications, Warnings, Human Warnings, and Adverse Reactions, for more information.) CONTRAINDICATIONS: Do not use this product on cats.

BAYER



Do your heartworm protocols need an update?

By Christopher Rehm, DVM

With new canine treatment guidelines out now, it's a perfect time to revisit your protocols to make sure your veterinary practice is current on heartworm prevention and treatment for cats and dogs.

Whether you practice in Alabama, Arizona, California or Connecticut, chances are you have a protocol in place for routine heartworm screening and prevention as well as a plan to treat heartworm-positive dogs. But the American Heartworm Society—which continually monitors the latest studies—has recently updated guidelines. Check to see if you're up-to-date on ...

SONSEDSKAYA, LISAGERRARD99/STOCK.ADOBE.COM

TOOLS YOU NEED
For the latest AHS guidelines for heartworm disease in dogs, go to **dvm360.com/heartwormtoolkit.**

Preventives: Assessing risk

The AHS heartworm guidelines on prevention call for year-round administration of heartworm preventives and practical steps to reduce mosquito exposure (for example, eliminating standing water and keeping dogs indoors during peak mosquito times) as the backbone of any prevention protocol. However, added risk may mean additional preventive steps are needed.

Factors that constitute high risk include:

Heartworm prevalence. The relative risk of heartworm infection where you practice may vary both from year to year and from season to season. Take a year-over-year look at the number of heartworm cases you've been diagnosing. Has the number been rising? The presence of heartworm-positive dogs along with environmental and climate conditions that favor the proliferation of mosquitoes—either seasonally or year-round—can increase the risk of heartworm transmission.

Client compliance. The efficacy of a prevention program is impaired by poor or inconsistent compliance. This also increases risk.

If and when the relative risk of heartworm transmission is considered high or individual client compliance is less than desirable, consider the added use of an EPA-approved repellent/ectoparasiticide. This will provide additional control of the mosquito vector and interrupt the chain of transmission by reducing the transmission from infected mosquitoes to dogs and from infected dogs to mosquitoes.

Testing: The 'how' and 'when' of heat treatment

Heat treatment of serum samples prior to antigen tests can improve testing accuracy when antigen blocking produces false-negative results on in-clinic heartworm tests. While acknowledging that this added step has value when active clinical disease is suspected in the absence of a positive antigen test, however, the AHS does not recommend this step for routine in-clinic screening.

> The step-by-step AHS heartworm treatment protocol is designed to help reduce the severity of complications from adulticide therapy.

Why not? The available heartworm tests are highly sensitive and accurate.

Heat treatment of samples is contrary to label instructions for in-house tests and may interfere with the accuracy of both heartworm tests and combination tests designed to detect antibodies of other infectious agents.

Suspected serum samples should be sent to a veterinary reference lab or a college of veterinary medicine's parasitology department.

Treatment: Make the AHS protocol your go-to

The step-by-step AHS heartworm treatment protocol—which includes administering a macrocyclic lactone (ML) preventive to kill juvenile worms and doxycycline to eliminate *Wolbachia* species bacteria prior to melarsomine administration—is designed to help reduce the severity of complications from adulticide therapy. The protocol includes a one-month waiting period between antibiotic and adulticide administration to allow more time for effects of the doxycycline to reduce worm biomass, reduce Wolbachia species metabolites and render microfilariae unable to mature to adults.

The AHS argues that this should be the default heartworm treatment. It's true that alternative non-arsenical protocols have been studied in the U.S. and Europe because of the need in cases where melarsomine treatment can't be used. However, the length of time required to kill adult worms, the uncertainty of "slow kill" treatment in resistance, the increased pathology, and the unknown restriction requirements with these protocols make them less than ideal for most patients and less predictable in outcomes. More studies are definitely needed.

Dr. Christopher Rehm, president, American Heartworm Society

The American Heartworm Society was founded in early 1974 by a group of veterinary practitioners and scientists concerned about heartworm disease. Active membership is open to all veterinarians and scientists with interests in any aspect of heartworm disease. The AHS is governed by an executive board made up of veterinary practitioners, academicians and researchers. Christopher Rehm, DVM, is the owner of Rehm Animal Clinics of Mobile and Baldwin counties, four small animal clinics in south Alabama and has served as the AHS president since 2016.

Don't take 'no' for an answer

Despite your parasite preventive conversations in the exam room, a client may ask anybody in the hospital, including receptionists, 'Do I really need to shell out money for this?' Here's how to make sure everyone on the team is armed for the conversation.

The American Heartworm Society (AHS) canine guidelines for heartworm prevention, diagnosis and treatment were recently revised, with a strong emphasis placed on the importance of year-round heartworm prevention.

Why? A 2016 AHS survey of almost 5,000 veterinary practices revealed that the number of heartworm-positive pets per clinic rose by 21 percent since the previous survey of three years earlier.

Among veterinarians who reported that heartworm disease was "on the rise" since the previous survey, the leading reason was that "owners skip doses or don't give preventives year-round." This compliance conundrum highlights the importance of client conversations about heartworm prevention—a priority that puts staff members front and center. Following are suggestions for handling heartworm prevention pushback from owners.

OKSANA KUZMINA, LISAGERRARD99/STOCK.ADOBE.COM

Client: "Heartworm medicine's so expensive. Why should I spend my money on it?"

Veterinary team member: "While it seems expensive, you get a lot more value for your prevention dollar than

you realize. Consider this: You can protect your dog from a fatal heartworm infection for an entire month for what you'd spend on a pastry and coffee at your local coffee shop. Many monthly medications also offer more than just heartworm protection— some protect against fleas and common intestinal worms, too. That's important to your pet's health as well as that of your family, when you consider that parasites like roundworms and hookworms can be spread to your kids and other household members."

Client: "I still don't think I can justify spending money on it."
Veterinary team member: "Here are two important facts you need to know. First, preventing heartworms is a lot cheaper than treating them; heartworm treatment can cost up to $1,000 in medication and veterinary bills. Secondly, while heartworm disease in dogs can be treated and the worms eliminated, the damage left by heartworms is forever, and many dogs are left with residual health problems."

(Bonus round for staff members in "nonendemic" areas)

Client: "I don't think I need it. Heartworms aren't that common around here."
Veterinary team member: "While heartworm disease isn't as common here as in other parts of the U.S., heartworms have been diagnosed in every state in this country. In parts of the country that stay cold for six months or more, there are lots of warm, protected spots where mosquitoes that transmit heartworms can live. In urban areas, radiated heat is stored in concrete and asphalt and is released at night when mosquitoes are active. In rural areas, mosquitoes may find a warm spot in a hollow log or animal burrow to ride out the winter. In dry locales, thanks to sprinkler systems, birdbaths and watering cans, there are pockets of standing water everywhere where mosquitoes can breed.

"I know parasite preventives may be an added expense you weren't expecting, and you may be weighing the costs and benefits. Makes perfect sense. It boils down to this: No matter where you live, is it worth putting your pet at risk? Isn't it easier to give a single medication once a month—or an injection every six months—to keep him or her safe? Think about it this way: You may never have been in a car wreck, but you still put on your seat belt. Would you risk your life by not wearing one? Why would you risk your pet's life by not giving him or her heartworm prevention?"

Here comes the sun:

Are you ready for parasite season?

Longer days. More vegetation. Spring brings forth a sense of hope and, at the same time, more stuff to encourage parasite numbers.

The time for the rise of the parasites begins—acknowledging, of course, that some warmer climates never quite lose them. So we asked a local veterinary clinic for what parasitology-related questions they have and snagged answers from Richard Gerhold, DVM, MS, PhD—always ready to deliver crucial parasite prevention tips.

Do heartworm preventives with efficacy against intestinal parasites work for routine puppy deworming?

Dr. Gerhold: Depending on the active drug in the preventive, the treatment should be effective at removing *Toxocara canis* (roundworms), *Ancylostoma caninum* (hookworms) and potentially *Trichuris vulpis* (whipworms). Ivermectin is not effective against *T. vulpis*, so animals receiving a preventive with only ivermectin would need a secondary product for treatment of infection with *T. vulpis*. Furthermore, tapeworm infections would need to be treated with either praziquantel or fenbendazole, depending on the tapeworm species. Finally, if dogs are being treated with ProHeart 6, they will also need to be given a monthly medication to control intestinal parasites.

What are the latest updates on microfilarial resistance to heartworm?

Dr. Gerhold: While there does appear to be some legitimate resistance

GRIGORITA KO/STOCK.ADOBE.COM

While there does appear to be some legitimate resistance of *Dirofilaria immitis microfilariae* to at least some of the preventives, it's a minor issue compared to lack of owner compliance in administering monthly heartworm preventives to dogs and cats.

of *Dirofilaria immitis microfilariae* to at least some of the preventives, it's a minor issue compared to lack of owner compliance in administering monthly heartworm preventives to dogs and cats. Efforts should be focused on educating owners about the necessity of compliance with monthly administration of heartworm preventive. Furthermore, veterinarians should avoid the use of the slow-kill method for adult heartworms if at all possible. The use of slow kill greatly increases the chances of selecting for resistant strains of *D. immitis microfilariae* that may be transmitted to other canids.

What do you think of genetically modifying mosquitoes to make them less capable of transmitting diseases?

Dr. Gerhold: I am in favor of research to investigate options for genetically controlling vector-borne disease. I see this research as being similar to the release of sterile male screw worm flies that led to eradication of screw worms from the United States. Hopefully there is funding for such research projects in the future to test the efficacy of such genetically modified vectors.

Dr. Richard Gerhold works in the Department of Biomedical and Diagnostic Sciences in the College of Veterinary Medicine at the University of Tennessee.

Counter cost concerns with heartworm treatment

Show clients the value of heartworm treatment as well as payment help.

The recently updated American Heartworm Society (AHS) canine heartworm guidelines emphasize the advantages of the protocol over the non-arsenical treatment protocols that have been studied in the U.S. and Europe. While these protocols are needed for dogs that aren't candidates for melarsomine treatment, the hope is that most heartworm-positive dogs can undergo the AHS treatment regimen, which is designed to eliminate the highest percentage of adult worms while minimizing treatment complications.

So, you have the better protocol and access to medications. What can you do to make sure the pet owner isn't put off by cost or a weak recommendation?

Countering cost concerns with adulticide treatment

Create a step-by-step estimate that breaks down the treatment steps. Treatment estimates that break out the different costs can help veterinary clients understand the complexity of heartworm treatment as well as the total cost. Pet owners understand that fees are associated with lab tests and imaging as well as with medications, monitoring and—in some instances—hospitalization. (*Editor's note*: Worried that if you list all the specific costs that clients will argue to knock some of them off? It's all good. Itemize the parts of the treatment but don't include individual prices.)

Create a payment plan that mirrors

VOREN1/STOCK.ADOBE.COM

By Chris Duke, DVM, founder of Bienville Animal Medical Center in Ocean Springs, Mississippi.

the treatment plan. One benefit to the AHS treatment protocol is that the medications are administered in a step-by-step fashion. Because there are 60 days between the initial diagnosis and the first melarsomine injection—as well as another 30 days between the first and second injections—payments can be billed in tandem with the medication. This also gives the client the opportunity to save for the costliest component of treatment: the melarsomine injections.

Use third-party payment plans. For clients who aren't enrolled in a pet health insurance plan or who can't afford to pay as they go, programs like CareCredit and Scratchpay can help owners stretch out the treatment costs in a manageable payment schedule.

Putting the brakes on slow kill

While it may be tempting to offer alternative protocols to clients on tight budgets, forgoing adulticide treatment is not always in the long-term best interest of the pet. Here's how to handle it:

Explain the risks. Because it can take years for alternative protocols to achieve results, the progression of pulmonary pathology and damage from adult heartworms continues over an extended period of time. Most clients want what's best for their pet; we do our clients a disservice if we don't provide our best recommendation first.

Compare the costs. While non-arsenical protocols eliminate the cost of melarsomine, they aren't necessarily cheap. Doxycycline—which should be used in non-arsenical as well as adulticide regimes to kill *Wolbachia* species bacteria and reduce the reproductive potential of adult heartworms—is a fairly expensive antibiotic. Meanwhile, dogs on non-arsenical therapy require repeated antigen tests to ascertain their status.

Just make sure with any change in protocols that you and your team are on the same page on the importance of the change if it affects what pet owners are paying. This is about strong recommendations and strong communication. In my view, good medicine is always good business, and maintaining standards of integrity keeps our patients healthier—and our clients happier—in the long run.

3 simple strategies to talk heartworms

Add some oomph to your heartworm prevention conversations with these tips.

By Ronald Hamilton, BSc, DVM

If your heartworm prevention conversations feel a bit stale, use these quick tips to protect pets against this dangerous killer.

1. Use cooked spaghetti as an example.

Pet owners are often surprised to learn that heartworms can range in size from 4 to 12 inches and look like cooked spaghetti wrapping through the heart. Dogs are a natural host for heartworms, which means that the worms that live inside the dog mature into adults, mate and produce offspring.

If untreated, their numbers can increase, and dogs have been known to harbor several hundred worms in their bodies. You can drive this point home by showing pet owners an entire box of cooked spaghetti in a clear glass jar, representing the magnitude of heartworm infestation.

2. Explain the mosquito bite phenomenon.

Sometimes pet owners need a better understanding of how heartworm disease is transmitted, and explaining the worm's life cycle can help. I recommend adapting information from the American Heartworm Society.

3. Teach cat owners about the gravity of infection.

Remind pet owners that heartworm can be sneaky in cats. Tell them to watch for signs, including coughing, asthma-like attacks, periodic vomiting, lack of appetite or weight loss. Remind them that there's no treatment for cats, so they should contact your practice

as soon as they notice any signs or suspect a problem. Cat owners are always under the impression that because cats are indoors, they are not susceptible to heartworms. But—spoiler alert—mosquitos fly into homes! Visual aids like an emailed video link showing what cats look like with heartworm-caused respiratory distress, or having a video explaining the transmission process on in the lobby or exam rooms is a big help in demonstrating the effect heartworms can have, particularly for the cats.

Minimizing heartworm transmission in relocated dogs: An algorithm

The American Heartworm Society (AHS) has announced a new set of best practices for minimizing heartworm transmission in relocated dogs, including recommendations for testing, treatment and prevention, that were developed in collaboration with the Association of Shelter Veterinarians (ASV), according to a society release.

These guidelines are intended to help in situations such as newly adopted pets left homeless by a recent hurricane, the dog that moved cross-country with its family or the canine companion that's returning from a beach vacation—situations the society says are familiar to veterinarians in today's mobile society.

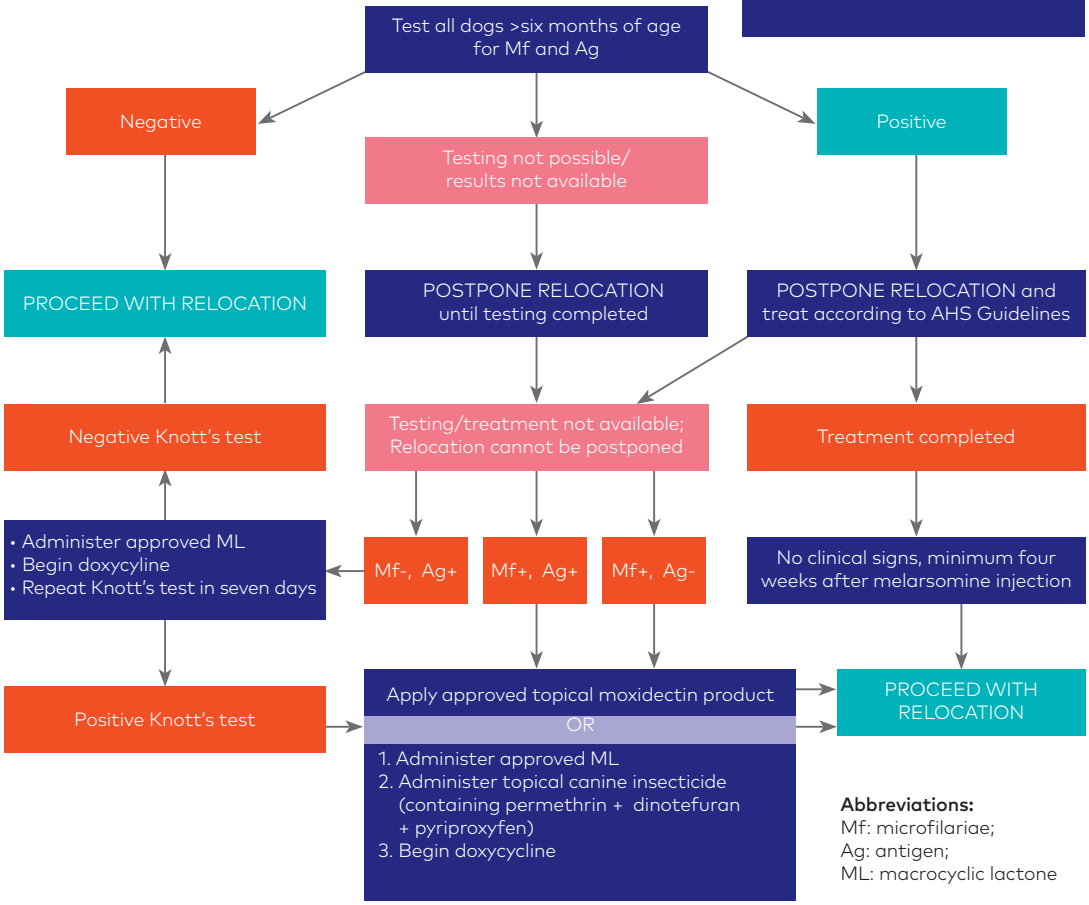
"Preventing transmission of *D[irofilaria] immitis* has always been a focus of the AHS heartworm guidelines. However, we believe we need to do more given the potential for heartworm-positive dogs to serve as reservoirs for infection," says AHS President Chris Rehm, DVM, in the release. "For example, if a microfilaria-positive dog is rescued in one state and subsequently moved to a new home in another state where nearby pets are unprotected, mosquitoes feeding on the new dog can quickly become heartworm vectors. The results can be disastrous for unprotected pets in the vicinity."

While the ideal scenario is to treat infected dogs before transporting or traveling with them, situations often dictate that infected animals can't undergo a full course of heartworm treatment, including adulticide administration, before hitting the road, the release states. The goals of the AHS transportation guidelines are to prevent infected dogs from becoming heartworm reservoirs, ensure that untimely travel doesn't trigger heartworm disease complications, and ensure that, once treated, dogs are on lifelong heartworm prevention. These guidelines are also an algorithm to decide best course of treatment for a pet.

Best practices include the following steps:

- Testing all dogs 6 months of age or older before relocation
- Delaying relocation of heartworm-positive dogs
- Pretreating heartworm-positive dogs (e.g. administering macrocyclic lactone drugs, applying an EPA-approved product that kills and repels mosquitoes,

TOOLS YOU NEED
For a free download of this algorithm, go to **dvm360.com/heartwormtoolkit.**



Abbreviations:
Mf: microfilariae;
Ag: antigen;
ML: macrocyclic lactone

and administering antibiotics) when relocation can't be delayed

> Following guidelines for microfilaria testing and retesting to avoid transportation of microfilaremic dogs

> Following guidelines for transport after administration of melarsomine to infected dogs.

"It is clear that care, cooperation and communication are needed on both ends of any journey that involves a heartworm-positive dog," Dr. Rehm states. "Our goal is to help veterinarians who oversee the health of both traveling and adopted dogs—as well as their clients—understand the threat and make the prevention of heartworm transmission a priority.

When the pet owner thinks heartworms are #FakeNews

Your veterinary client thinks that heartworms are nothing more than a made up scam for money. Here's how I like to steer them straight. *Erika Ervin, MBA, CVPM, CVT*

When I'm faced with a client who doesn't believe heartworms exist, first I try to determine their source of information. This helps me tailor my approach and understand how their sources convinced them so well. This is important, because you wouldn't want to offend someone if they're receiving information from a friend or family member.

One of the best ways I educate clients on the topic of heartworms and the threat they pose to dogs and cats is to share my personal experiences. This approach is more genuine than just giving clients facts about heartworms—something they can just claim you've made up. With personal stories, I'm able to connect with clients and gain their trust. Once we've established trust, I can start to ask about their views on heartworm and dispel any myths they may have heard or false information they've received.

Maybe money is important to them. In that case, I'd explain how prevention is always more affordable than treatment. And in cats especially, where there is no treatment, it becomes a matter of life and death.

Or maybe they place high value on science and facts. For those clients, I'd explain to them how heartworm is found in all 50 states today. I'd explain how Hurricane Katrina impacted heartworm prevalence in different areas around the country and why, now more than ever, it's important to protect our pets against heartworm. There's a chance many other pet owners aren't protecting their pets, and that poses a risk for transmission to our pets.

At the end of the day, the only way to gain credibility with pet owners is to discover what they value most and use that to formulate the best response. This way you'll resonate with what they find important and they'll be more likely to trust and buy into your message.

FROM YOUR VETERINARIAN

dvm360

Is heartworm prevention *worth it?*

Heartworm medication is an expense you might not have expected, but it's an important one. Here are answers to common questions to help you think about a single medication once a month—or an injection every six months—to keep your pet safe and sound.

Heartworm medicine can be expensive. Why should I spend my money on it?

While it seems expensive, you get a lot more value for your prevention dollar than you realize. Consider this: You can protect your dog from a fatal heartworm infection for an entire month for what you'd spend on a pastry and coffee at your favorite coffee shop.

Many monthly medications also offer more than just heartworm protection—some protect against fleas and common intestinal worms, too. That's important to your pet's health as well as that of your family, when you consider that parasites like roundworms and hookworms can be spread to your kids and other household members.

I still don't think I can justify spending money on it

Here are two important facts you need to know. First, preventing heartworms is a lot cheaper than treating them; heartworm treatment can cost up to $1,000 in medication and veterinary bills. Second, while heartworm disease in dogs can be treated and the worms eliminated, the damage left by heartworms is forever, and many dogs are left with residual health problems.

I don't think I need it. Heartworms aren't that common around here.

While heartworm disease may not be common in some parts of the U.S., heartworms have been diagnosed in every state in the country. In parts of the country that stay cold for six months or more, there are lots of warm, protected spots where mosquitoes that transmit heartworms can live. In urban areas, radiated heat is stored in concrete and asphalt and is released at night when mosquitoes are active. In rural areas, mosquitoes may find a warm spot in a hollow log or animal burrow to ride out the winter. In dry locales, thanks to sprinkler systems, birdbaths and watering cans, there are pockets of standing water everywhere where mosquitoes can breed.

Think about it this way: You may never have been in a car wreck, but you still put on your seat belt. Would you risk your life by not wearing one? Why would you risk your pet's life by not giving him or her heartworm prevention?

HEARTWORM TREATMENT
Medications
+ Veterinary fees
+ Post-treatment preventive
+ Lab tests
+ X-rays
$1,200-$1,800

HEARTWORM PREVENTION
Twelve months of heartworm prevention
$70-$200

PIPHOLLEY/ALEXANDRIX/STOCK.ADOBE.COM; ILLUSTRATION BY ROXY TOWNSEND

Source: American Heartworm Society, heartwormsociety.org

Download the handout here by scanning the code or visting **dvm360.com/heartwormtoolkit**

An update on heartworm disease and HARD in cats

Dr. Ray Dillon shares why this 'juvenile delinquent' form of heartworm disease causes so much trouble in feline veterinary patients.

What do veterinarians need to know about feline heartworm disease and heartworm-associated respiratory disease (HARD) in cats? Ray Dillon, DVM, MS, MBA, DACVIM, professor of small animal internal medicine at Auburn University, took a few minutes to answer these questions at the 15th Triennial Heartworm Symposium in New Orleans.

Feline heartworm disease: Think quality of life, not life or death

"When we first started thinking of this disease 40 years ago, we made the mistake of always assuming it is a fatal disease," says Dr. Dillon. "And now we recognize that it is rarely a fatal disease."

Feline heartworm disease does, however, affect the cat's quality of life—often for the duration of the cat's life, Dr. Dillon says.

Even an "unsuccessful" infection—one where the parasite doesn't make it

VOREN1/STOCK.ADOBE.COM

Watch the video by scanning the code or visit dvm360.com/heartwormtoolkit

to the adult stage—can have dire consequences on the cat's respiratory tract, Dr. Dillon says. The cat is still likely to suffer from disease even though it's not the adult parasite causing it.

So what's the takeaway? According to Dr. Dillon, both veterinary professionals and clients need to be reminded that this is a quality-of-life disease instead of a life-or-death disease.

HARD: Hard diagnostics

"The incidence of HARD (and even the incidence of heartworms) in cats is an ongoing question people always want to know," says Dr. Dillon. But instead of wading through percentages with clients, Dr. Dillon simply reminds them that if it occurs in their cat, it affects 100 percent of the cat.

"We know that the infection rate throughout most of the Southeast in cats is about a third of all cats come up heartworm-antibody-positive at some point in their lives, which means they were successfully infected," says Dr. Dillon. But the real question is how far the worms traveled and developed in the cat before dying.

"Did they die precardiac?" he says. "Did they make it to the HARD stage and die? Did they make it to the adult heartworm [stage] and then the adult heartworm died?"

Dr. Dillon explains that HARD is seasonal instead of lifelong, which can complicate diagnostics.

"HARD represents a juvenile delinquent form of the adult heartworm, so it's very much like a car wreck caused by a juvenile delinquent driver: They come in, they have a wreck, they cause all kinds of damage and then they're gone," he says. "There's no way to go back and prove who caused that accident."

Because HARD is so transient, clinicians can't easily perform diagnostics that confirm the disease 100 percent. "Necropsy studies only study cats that develop fully mature adult heartworms, and that's simply the tip of the iceberg," Dr. Dillon says.

Handle concerns about the price of heartworm prevention

Money makes the world go 'round. *By Sue O'Brien*

Expense is one of the leading objections clients give for forgoing heartworm prevention. Things like:

"Heartworm prevention is too expensive."

Pet owners who assert that heartworm prevention is a luxury they can't afford may not be aware that there are low-cost options available—or understand how much treatment may set them back if they try to skimp on prevention. Is the pet a dog, cat or ferret? If it's a dog, is it a petite terrier or a massive mastiff? Does he only need heartworm prevention or should the product protect him from fleas, ticks, heartworms and hookworms? Annual costs for clients can range from $60 to $250 for dogs and from $140 to $200 for cats and ferrets, depending on the product's spectrum and whatever promotions are available from manufacturers. Within that range, most clients can find a cost they can live with while still meeting the needs of their pet.

Meanwhile, not every owner who finds cost to be a significant hurdle is vocal about it. "When I talk about year-round prevention in the exam room, I see a lot of head nodding from my clients," says Chris Duke, DVM, of Bienville Animal Medical Center in Ocean Springs, Mississippi. "However, my staff members tell me it's not uncommon for owners to back out of the purchase once I've exited the scene."

While it can be discouraging when pet owners insist on going home with prescriptions to fill through online services, Dr. Duke is an

ANASTASIIA/STOCK.ADOBE.COM

advocate of picking his battles. "We always stress that purchasing from our hospital provides our clients with important support," he says, "but refusing to provide written prescriptions can result in client alienation. We provide a prescription as long as we have a valid doctor-client relationship and the dog has had a heartworm test in the past year. However, we specify in writing that our prescriptions are only good for U.S. products and we limit refills to the point of a new blood check."

"It's up to us to provide concise, consistent and compassionate information and to create confidence in our recommendations. I tell my clients, who should they trust—a pet store worker, a TV commercial or a trained medical professional? We need to provide a winning experience at every visit—without exception—if we're going to maintain that trust.

— Dr. Christopher Rehm

"If my dog gets heartworm disease, I can always just have him treated."

The cost of treating heartworms in a dog is roughly 10 times the annual cost of preventives in most practices, but the cost of heartworms goes well beyond the dollars and cents of medications and veterinary fees. "I emphasize that the cost of prevention is a small price to pay to save pets from suffering the pain and permanent damage caused by heartworms," says Jennifer Rizzo, DVM, of Friendship Pet Hospital in San Schertz, Texas. "Having dealt with emergencies such as heart failure, pulmonary thromboembolisms and caval syndrome in the ER, I can paint a vivid picture of just how scary heartworms are. I also emphasize that prevention is a small price to pay if owners want to protect their pets from suffering and help them live a longer, happier life."

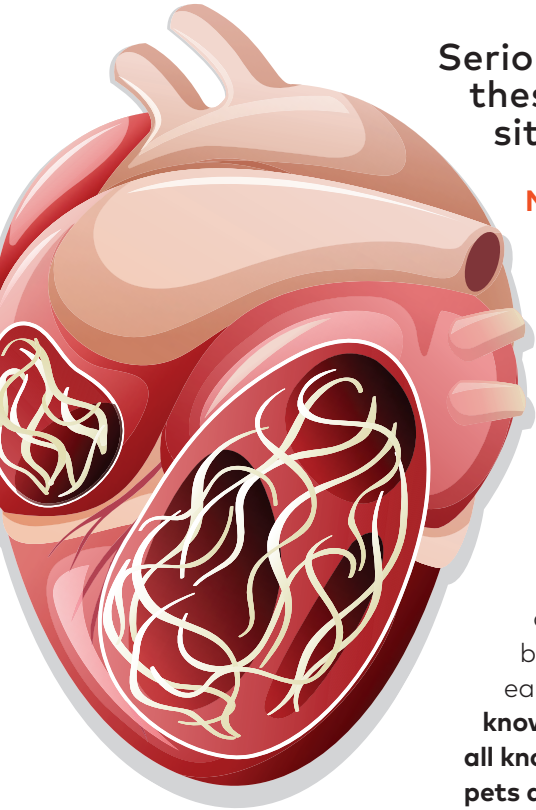
"I don't think heartworm prevention is worth it."

Clients set their own priorities, but it can be helpful to remind them that—important as it is—there's more at stake than just their pets' health. AHS President Christopher Rehm, DVM, owner of Rehm Animal Clinics of Mobile and Baldwin Counties in Mobile, Alabama, says, "I explain to pet owners that there are four pillars in pet healthcare: protection from parasites; protection from infectious diseases; nutrition; and keeping the pet safe via proper housing, spaying or neutering and grooming. Failure to invest adequately in any one of these four areas can have disastrous results for the pet, the family and the wallet. Pillars one and two actually reach beyond the pet because some parasites and infectious diseases can be shared between pets and family members and can even represent public health concerns because of the risk of zoonotic infections."

dvm360

TOOLS YOU NEED
Get heartworm tips, tools and more at **dvm360.com/heartwormtoolkit.**

Stop slacking on these 5 recommendations



Seriously. It's time to take a stand on these veterinary client noncompliance situations.

By Sarah J. Wooten, DVM

You work with clients all day long who won't take your recommendations to heart. It can be tempting to just give in and smile and nod while they give you excuses about parasite prevention. Here are five ways to stop doing that.

No. 1: Stop telling people who say their pet doesn't go outside that they can skip heartworm preventives

Just the other day I was in a room in my house that was the farthest from any exterior doors, and guess what was buzzing around my ear? A mosquito. **You know it, I know it, we all know it: Indoor-only pets are still at risk** for heartworm disease.

No. 2: Stop arguing your client's limits

Ever said to yourself, "The client only has so much money, and the fill-in-the-blank chronic medicine is more important." Or: "OMG, this dog has so many problems I have to talk to the client about. There's no way they're going to hear me out on parasite control too!"

Do yourself a favor and suspend your own disbelief about what the client will pay for, and **just go into that exam room and give your clients the information they need** to hear—even if you don't think they want to hear it or you don't want to say it.

No. 3: Stop saying clients can give preventive only during mosquito season

I have clients push me on this all the time and, I agree—it gets old. You want to say, "Fine! Just give it during the summer!"

However … if I do that, then **I'm not doing my job or doing the client any favors.** Clients who feel "safe" from parasites

during the winter are getting a false sense of security from us when we tell them it's OK to stop parasite protection during the winter.

No. 4: Stop saying clients don't have to give prevention because you don't have heartworm in your area

Remember the micro-outbreaks of heartworm disease after dogs were rescued from areas affected by Hurricane Katrina? Hundreds of dogs were also lost or displaced after the hurricanes this season—where are those dogs and their undiagnosed heartworm disease going to end up? Have you already seen these dogs in your practice? **(Check out the algorithm on page 14.)** One need only introduce Patient, err, Dog Zero into an area with previously low reports of heartworm disease, and suddenly all dogs are at risk. Your clients deserve to know that their dog is at risk anywhere, at any time.

No. 5: Stop saying "I recommend"

One of the most profound and effective changes I've made in the way I talk to clients is to **stop saying, "I recommend ...," and instead substituted, "Your pet needs ..."** or "We need to ..." or "You need to ..." While clients value our opinion, they're less interested in what we recommend and more interested in what their pet needs. Switch your language and take the emphasis off you and put it back it onto the pet, where it belongs.

Time management tip: Make a plan with your client to address only one or two of the most important health problems, prioritize those issues along with the parasite control talk, and schedule a follow-up appointment to discuss less-pressing issues.

Experience the many layers of Advantage Multi®

(imidacloprid+moxidectin)

Every dog and cat deserves comprehensive, broad-spectrum protection. That's why Advantage Multi® delivers layers of protection from heartworms, fleas and intestinal parasites.

Provide the multi-layered protection of Advantage Multi® to the pets in your care.

Visit LayersofMulti.com or contact your Bayer Sales Representative.

*Treats and controls roundworms, hookworms and whipworms in dogs and roundworms and hookworms in cats.

CAUTION: Advantage Multi® is only available from a licensed veterinarian. Dogs: WARNING: **DO NOT ADMINISTER THIS PRODUCT ORALLY.** For the first 30 minutes after application, ensure that dogs cannot lick the product from application sites on themselves or other treated animals. Children should not come in contact with the application sites for two (2) hours after application. (See Contraindications, Warnings, Human Warnings and Adverse Reactions for more information.) Cats: Do not use on sick, debilitated, or underweight cats. Avoid oral ingestion.

were criticized if you ever dared to reach for a glove. Some veterinarians didn't like how we positioned the pets on the table, and they would walk in and hold them how they liked it. We would tell them to leave, but they had us shoot the film anyway. They said it's not enough radiation to do anything. Some stood behind those wearing lead aprons, thinking this was all the protection they needed. Looking back at how unsafe that was, I never would have hit that pedal.

The next clinic I worked at was another fast-paced small animal practice. This radiology room actually had doors. They did have badges, but we never saw them. They weren't even displayed all the time. Sometimes they were there, sometimes they weren't. I never saw a thyroid collar, and the gloves looked as perfect as the day they were purchased years before.

'I followed his rules—most of the time'

At another practice, it was mandatory that all radiographs be taken with thyroid collar, gloves and gown. Badges were worn at all times throughout the hospital—you put them on when you started that day and took them off when you left. The management posted radiation levels every month.

I was shocked. It seemed overboard to me. I didn't understand why this veterinarian was going to extremes about X-rays. I followed his rules—most of the time. I scoffed at his being overly cautious. If I didn't get the perfect view, I blamed him for making me wear the stupid gloves.

Then I started to see my radiation number increase. I knew those little badges actually meant something. I wondered how much radiation exposure I had over my entire veterinary career. I didn't know I was supposed to have my radiation company contact my old employer to transfer information to a new employer.

For more than 15 years, I worked two jobs, in general practice and in emergency. I easily took 30-plus X-rays a day, each patient getting a minimum of three views. Add on additional films because patients moved or the veterinarian wanted more views. Trauma patients would get three for the abdomen, three for the thorax, plus extremities and pelvis views. Some shifts I just left on the apron for hours because I was taking so many.

I got thyroid cancer

Now, with 24 years of taking X-rays, I wish I had taken radiation safety more seriously. I've had a full thyroidectomy due to thyroid cancer. Nineteen lymph nodes were positive for cancer and it spread to the left side of my chest. I don't have a family history of thyroid disease or any other medical explanation. My doctors have concluded that it's work-related from years of taking radiographs without the proper protection or monitoring.

If I could pass one message onto veterinary assistants, technicians and future technicians, it's this: Please take the lead seriously. Wear it! Wear your badges! Transfer your radiation numbers. That number should follow you your whole career. Just because you change jobs doesn't erase all your radiation exposure. If employers don't want to work with you, then fight for yourself. Stand up for your health and your future!

I don't blame my past employers. It was a different time. Recently, I heard about an office manager telling a new employee to use another employee's badge until her X-ray badge came in. I refused to let her take a single X-ray, and I told her to refuse. I'm more educated now, and I spread this to fellow veterinary practice coworkers. We must protect ourselves—and each other.

Know your rights. Stand up for yourself. Don't be the only veterinary team member taking radiographs all night. Keep track of how many you take per shift and demand equal radiation exposure to all. You must be your biggest advocate, because when you're going through cancer treatment, your past employers and veterinarians won't be there holding your hand.

Naomi Strollo, RVT, is Fear Free Certified and has been working in the veterinary field for more than 24 years. She practices emergency medicine and is a freelance writer.

ProZinc approved for dogs

Product becomes just the second approved insulin for use in cases of canine diabetes.

Nearly a decade ago, ProZinc (protamine zinc recombinant human insulin) was approved by the FDA for the reduction of hyperglycemia and associated clinical signs in cats with diabetes mellitus. Last week, the FDA announced that the product is now approved for use in dogs as well, making it the second approved product available to veterinarians for managing canine diabetes. Vetsulin (porcine insulin zinc suspension), manufactured by Merck Animal Health, is the other.

Available by prescription only, ProZinc comes in 10-ml multidose vials at a concentration of 40 IU/ml. It is administered via subcutaneous injection using a U-40 syringe, according to an FDA release. The recommended starting dose in dogs is 0.2 to 0.5 IU/pound of body weight (0.5-1.0 IU/kg) once daily. The starting dose for cats is 0.1 to 0.3 IU/pound (0.2-0.7 IU/kg) given twice daily. In both species, the drug should be given with or just after a meal.

The FDA says that because compounded drugs vary in quality and potency, it strongly encourages the use of FDA-approved veterinary insulin for newly diagnosed diabetic dogs or when transitioning patients between products.

Pets given any insulin product should be re-evaluated at appropriate intervals with the dose and frequency adjusted as needed based on clinical signs and laboratory parameters until adequate glycemic control has been attained.

ProZinc is contraindicated in dogs and cats sensitive to protamine zinc recombinant human insulin or any other ingredients in ProZinc. The drug should not be given during episodes of hypoglycemia. Adverse effects in the canine clinical trial included lethargy, anorexia, hypoglycemia, vomiting, seizures, shaking, diarrhea and ataxia.

Hospital of the Year:

No appointments? No problem!

This Indiana hospital, which won our top design award for hospitals over 8,000 square feet, supports the team and keeps wait times to a minimum, all while wowing clients with its beauty.

By Sarah A. Moser

Coyne Veterinary Center: Crown Point from the exterior.

If the Coyne Veterinary Center in Crown Point, Indiana, had a job description, as any good team member does, it would say: Attract clients. Other requirements: Make technicians' jobs easier, support an appointment-free environment and, of course, give clients the wow effect.

"We wanted the type of hospital that attracts the best people, who are proud and want to do their best job."
—John Coyne, DVM, practice owner

"We wanted the type of hospital that attracts the best people, who are proud and want to do their best job," says John Coyne, DVM, owner of nine veterinary practices in Chicago and northwestern Indiana. "People say it feels like coming into a Marriott hotel at our practice. Our job is to make the client-patient relationship the best it can be, and it starts with building a practice that allows us to offer the best care possible."

As Regional Director Jamie Josephson, CVPM, says, "The team working here had already mentored under Dr. Coyne and they understand our practice model. Dr. Coyne builds the hospital and gets clients in the doors, then it's our job to take care of the clients and pets and keep them coming back."

Coyne Veterinary Center earned the title of Hospital of the Year for practices 8,000-square-feet or larger in the 2019 dvm360 Hospital Design Competition, earning high praise for an efficient floor plan, excellent finishes and signage, a beautiful reception area and unique exterior design.

Building for success

Coyne Veterinary Center doesn't take appointments. Dr. Coyne admits that the concept sounds scary to people

By the numbers

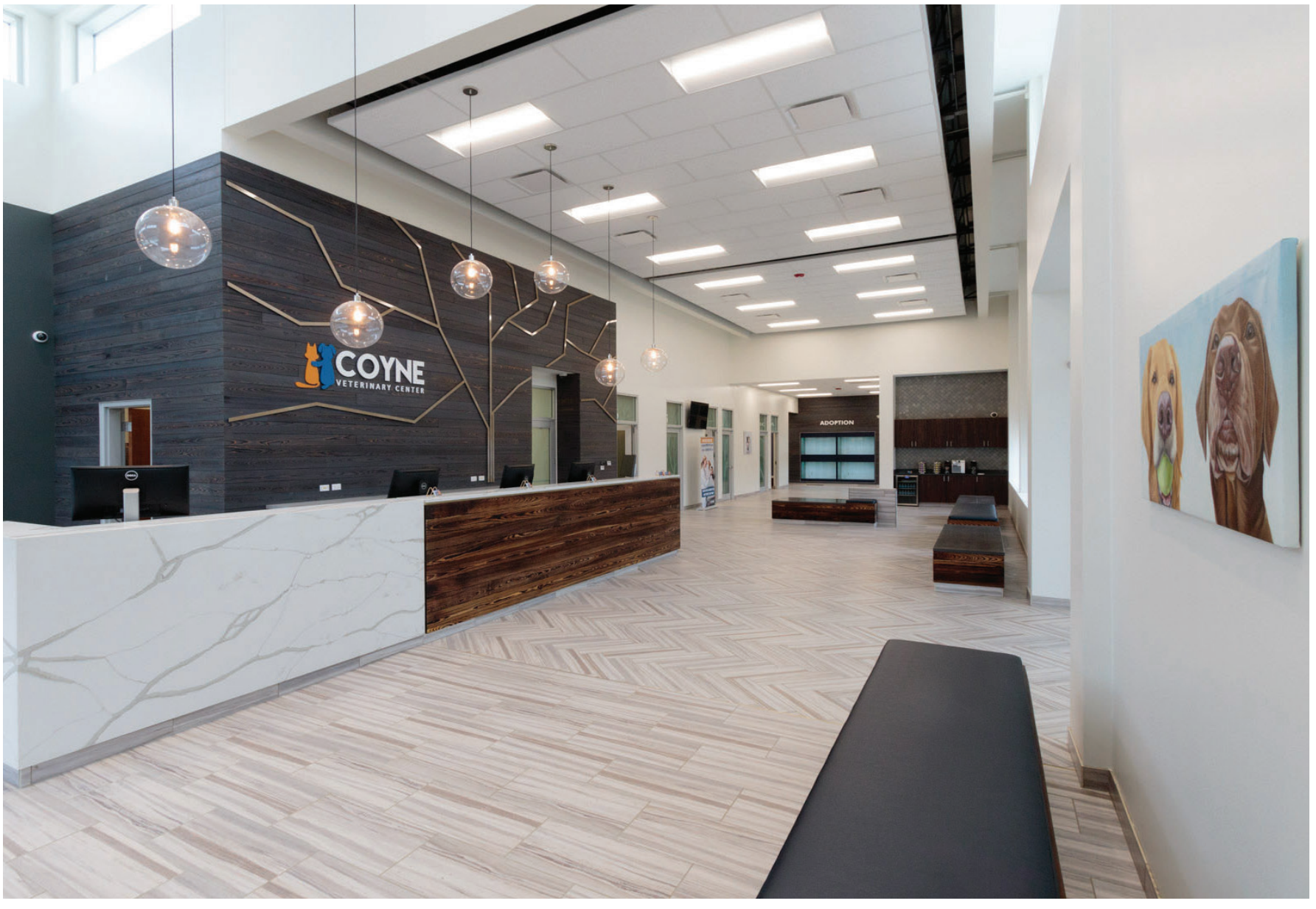
Coyne Veterinary Center: Crown Point

Owners: Drs. John Coyne and Jeremey Buishas
Number of doctors: 3 full-time, 1 part-time
Exam rooms: 11
Total cost: $3,686,386
Cost per square foot: $235.80
Square footage: 15,633
Structure type: Freestanding, new
Architect: Michael Matthys, Linden Group Architects

ALL PHOTOS COURTESY OF PAUL STRABBING, PAUL STRABBING PHOTOGRAPHY.

The 11 exam rooms all feature in-room checkout to minimize fear as animals depart after their visits, as well as to aid the flow of traffic. Windows allow natural light into each room. The same neutral porcelain tile flows from reception into the exam rooms.

In the lab, technicians are trained to do bloodwork, run ECGs, and more with ample workspace in a clean, bright environment built just for them.



In the reception area, high ceilings, natural finishes and clean, bright surfaces greet clients upon arrival. Pendant lighting and metal artwork add creative touches to the space. All public spaces use porcelain tile, with the entrance area featuring a herringbone design.

who aren't used to it, but that's the way he was taught when he started in veterinary medicine 45 years ago—and he's stuck with it. But it means he has to design his practices to support this business philosophy.

"Are we busy? Yes. It's a challenge not to make clients wait too long," says Dr. Coyne. "But clients love the flexibility and we've been able to grow well because of this structure."

To keep waiting to a minimum, the practice includes 11 exam rooms, more than most practices offer, with three full-time veterinarians and 30 full-time team members. The exam rooms are set up to check clients out at the end of an appointment, minimizing a backlog at the reception desk. Technicians are authorized to draw blood, set catheters, take radiographs, and perform ECGs and ultrasounds to keep things moving along. "Not only does this help our client flow and speed up appointments, it also empowers our technicians and lets doctors be doctors," says Dr. Coyne. "Technicians appreciate it and it shows they're an important part of the team."

A centrally located computerized pharmacy, a space for in-house blood work and a "fishbowl" doctors' office also improve the client flow. Dr. Coyne says the practice does a great deal of in-house diagnostics under the philosophy that they can get answers

more quickly, treat pets sooner and keep clients from waiting so long.

Even so, there are often two to six clients waiting in the lobby at any time. Again, Dr. Coyne designed the practice with this in mind, putting an adoption center on prominent display. He has included an adoption center in all of his hospitals since the very beginning, starting with stray animals he would bring in and rehome.

"We just love animals and want to help find every pet a forever home," he says. Another benefit is that the puppies and kittens on display entertain waiting clients. Dr. Coyne says that 75 percent of the animals adopted from his facilities remain with them as patients. "Our adoptions are priced economically, and this service ties us to the community," he says. "If you're going to be in the community, you need to be a functional part of it. Adoptions are a way to show that you're happy to be there and appreciate the opportunity to serve."

Coyne Veterinary Center works with more than 75 rescue groups across its nine hospitals. A bonding room was added to this latest facility to allow for meet-and-greets with pets up for adoption.

Menu of services

Restaurants, salons and spas all offer menus, making it easy for a client to know what's offered. After a number of clients came into Dr. Coyne's practice asking if he offered specific veterinary services, he decided to create a "menu" of sorts for the practice. "We take it for granted that our practices offer so many services, but clients don't always know," he says.

That's how the signage throughout the hospital came to be. At each area of the hospital, clients can find an accounting of the services provided—just like a menu.

The dvm360 Hospital Design Competition judges applauded the signage, noting the unique way it's displayed.

Sarah A. Moser is a freelance writer in Lenexa, Kansas.

The services menu at Coyne Veterinary Center: Crown Point.

Who won?!

Find out about all the winners in the 2019 Hospital Design Competition at dvm360.com/2019winners. Next month, read all about (and see pictures of) the under-8,000-square-foot Hospital of the Year in these pages.

The adoption center fills several needs, most importantly that of helping pets find forever homes. Dr. Coyne says the area also entertains waiting clients, and gives adoptable pets an entertaining view as well. A bonding room gives potential pet parents a place to get to know pets and make sure the fit is good for each other.

A view of part of the treatment area.

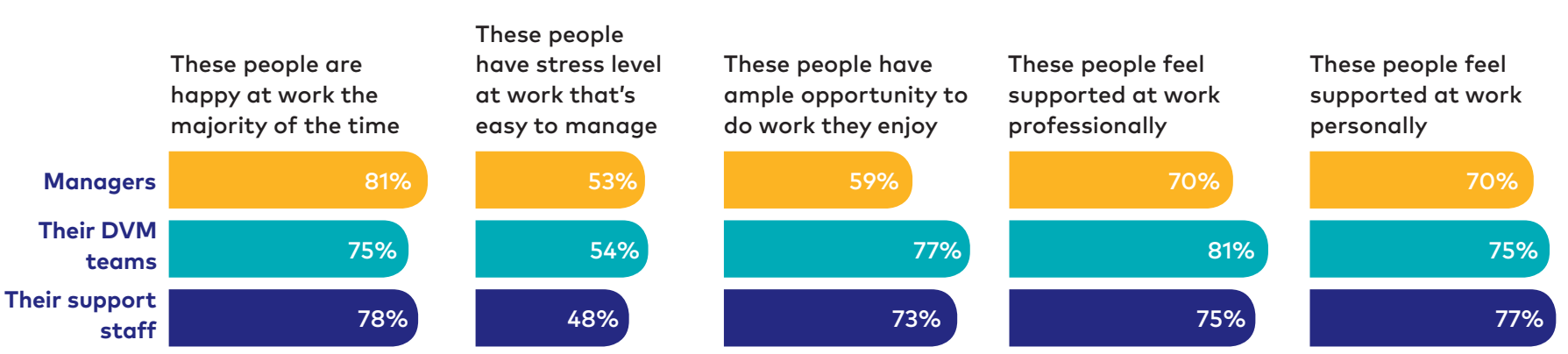
Are practice teams in balance?

Tucked away among data on revenue and client numbers in the latest Veterinary Hospital Managers Association (VHMA) Insiders' Insights report were numbers on a hot topic these days: the feelings and well-being of veterinarians and their practice teams.

The monthly report, culled from surveys from managers and practice owners who are VHMA members along with expert advice from Karen Felsted, CPA, MS, DVM, CVPM, CVA, asked, "How are you and your team doing?"

Editor's note: If you'd like to figure out the problems team members face in their jobs and ways to help them cope with them, visit our relevant content at **dvm360.com/life-balance**.

What practice managers and practice owners said about themselves and their coworkers ...



Bipartisan U.S. House bill out of Florida would make animal cruelty a federal offense

Florida lawmakers hope to close loophole making videos—but not torture—a national felony.

U.S. Reps. Vern Buchanan (R-FL) and Ted Deutch (D-FL) on Jan. 23 introduced the Preventing Animal Cruelty and Torture (PACT) Act to outlaw animal cruelty and make it easier to prosecute those responsible, according to a release from Buchanan's office.

While Congress passed legislation in 2010 to prohibit the creation and distribution of so-called "animal crush videos"—in which individuals kill, mutilate or torture animals and release the videos to the internet—the underlying acts themselves are still legal under federal law, the release states.

The PACT Act would close that loophole. Specifically, it would amend the federal criminal code to prohibit intentional acts of crushing, burning, drowning, suffocating, impaling or otherwise subjecting animals to serious bodily harm. Those convicted would face federal felony charges, fines and up to seven years in prison, the release states.

While all 50 states now consider animal cruelty a felony, a federal regulation is necessary, lawmakers say.

"By building on state and local laws, Congress should act to guarantee a level of protection for animals across the country by criminalizing these inhumane acts," Deutch says in the release about the bill. "We've acted in the past to stop the horrific trend of animal abuse videos; now it's time to make the underlying acts of cruelty a crime as well."

The bill contains exceptions for normal veterinary care, hunting and conduct necessary to protect life or property from a serious threat caused by an animal, according to the release.

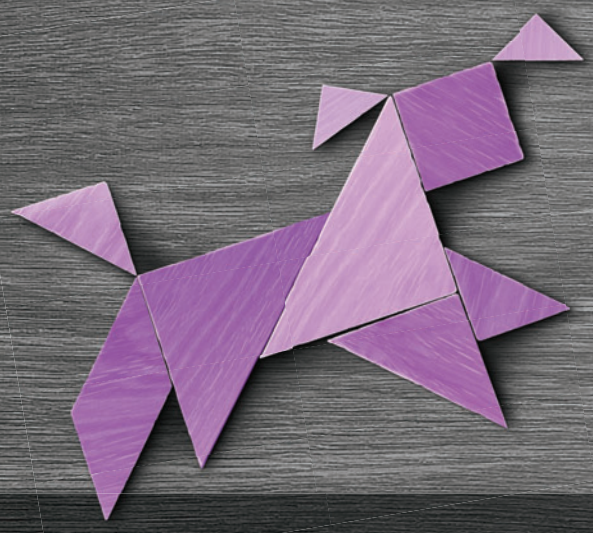
An identical bill passed the Senate during the last session of Congress but failed to move out of committee in the House.

(SERGEY NIVENS/ADOBE.STOCK.COM)

HELPING YOU SOLVE THE PUZZLE OF JOINT HEALTH

Choose from a range of multimodal products from Boehringer Ingelheim.

- Order now from your Boehringer Ingelheim representative.



Metacam® (meloxicam oral suspension)
For use in dogs only

Metacam® (meloxicam) Solution for Injection
For use in dogs

Previcox® (firocoxib)
For use in dogs only

Antinol®
For use in dogs and cats

METACAM and PREVICOX are indicated for the control of pain and inflammation associated with osteoarthritis in dogs.

ANTINOL is a joint health supplement.

Boehringer Ingelheim | MOBILITY SOLUTIONS

IMPORTANT SAFETY INFORMATION: METACAM (meloxicam oral suspension) and PREVICOX (firocoxib) are for use in dogs only. METACAM (meloxicam) Solution for Injection is approved for use in dogs or cats. Repeated use of meloxicam in cats has been associated with acute renal failure and death. Do not administer additional injectable or oral meloxicam to cats. As a class, cyclooxygenase inhibitory NSAIDs like METACAM and PREVICOX may be associated with gastrointestinal, kidney, or liver side effects. Dogs should be evaluated for pre-existing conditions and currently prescribed medications prior to treatment with METACAM or PREVICOX, then monitored regularly while on therapy. Concurrent use with another NSAID, corticosteroid, or nephrotoxic medication should be avoided or monitored closely.
For more information on products mentioned in this ad, please see full prescribing information.

Tummy troubles top list of common pet problems filed on insurance claims

Embrace Pet Insurance assembles the top five veterinary claims of 2018, with GI topping the charts for both dogs and cats. (Itching to know what's second ... ?)

Last year, gastrointestinal issues brought more pet owners into the veterinarian's office than any other ailment, according to Embrace Pet Insurance. The company combed through the more than 200,000 claims filed during the year to assemble the top five diagnoses of 2018 for both dogs and cats, along with the average costs to treat them.

For dogs, here are the most common medical conditions from last year:

With clinical signs including vomiting, diarrhea, not eating or drinking, drooling or foaming at the mouth, visits for GI issues were likely to cost $790.

Dogs with allergies exhibited itching and scabbing, watery eyes, sneezing, paw chewing, licking, vomiting or diarrhea, and racked up $390.

Ear infections, indicated by scratching or rubbing ears, ears hot to the touch, discharge or odor, redness, swelling, hair loss or loss of balance, cost $290.

Dogs experiencing lameness exhibited an inability to properly use one or more limbs, and claims averaged $620.

Cranial cruciate ligament tears were the costliest common canine condition at $4,160, and include signs such as whimpering, limping, swelling, stiffness, difficulty getting up and more.

The top five feline medical conditions were costlier: GI issues ($900), diabetes mellitus ($1,150), hyperthyroidism ($980), urinary tract infections ($370) and lymphoma ($2,520).

"Cats [are] so good at hiding pain ... it may take their owner days or weeks to notice when something is wrong, which delays treatment and ultimately leads to a higher vet bill," explained Jenna Mahan, director of claims at Embrace, in a release on the data.

Embrace also looked at claims by pet name, and found that in 2018, cats named Chloe collectively submitted more than $43,700, while dogs called Bella won the dog category in a landslide with $637,224 in claims to their name, collectively.

THAMKC/STOCK.ADOBE.COM

Heartworm 2020 aims to boost the number of protected dogs by 500K

Maker of Heartgard Plus challenges practices.

In the wake of a recent report from the American Heartworm Society (AHS) showing a 21 percent rise in heartworm incidence in three years, the maker of Heartgard Plus (ivermectin-pyrantel) has kicked off Heartworm 2020, a campaign designed to increase the number of dogs receiving heartworm prevention in 2019.

Heartworm 2020 challenges each veterinary clinic to add 20 new dogs on year-round heartworm disease prevention by Jan. 1, 2020, according to materials from Boehringer Ingelheim Animal Health, the manufacturer of Heartgard Plus. The program officially kicked off during the VMX conference in Orlando, Florida, in January.

"If every clinic does their part to get 20 new dogs on prevention, that means 583,240 more dogs will be protected from this potentially deadly disease in 2019 than were protected in 2018," says Sarah Cloud, Heartgard brand director, in a release.

To help clinics meet the goal, the company is providing heartworm disease education tools and incentives for pet owners. Clinics will also receive tracking tools and educational resources for team members. Starting in March, each clinic that participates can enter the Heartworm 2020 contest for a chance to win such prizes as a top-of-the-line washer-dryer set and a Roomba robot vacuum—items that can be used at home or in the clinic—company representatives told dvm360.

"There is still a perception that heartworm disease doesn't impact certain regions or that dogs are only at risk during summer, and the AHS data indicates that just isn't the case," says Zach Mills, DVM, head of US Pet Veterinary Professional Services for Boehringer Ingelheim, in the release. "Heartworm 2020 will help educate pet owners so that they understand why prevention is so important."

Details about Heartworm 2020 is available at heartgardclinic.com or from company sales representatives.

Jumpstart your brain:

The fight against decision fatigue

Decision-making shortcuts can ward off mental fatigue in your life and veterinary practice. *By Beckie Mossor, RVT*

Think about the number of decisions you make in a day. Would you guess it to be in the thousands? If so, you're like most people, and you're guessing low. The reality is that the average adult makes an estimated 35,000 decisions a day—more than 200 of those about food alone![1]

In a society where daily life involves an overwhelming number of choices, decision fatigue is a concept that resonates. It's also a burgeoning area of psychological research. And as the field emerges, psychologists and scientists are discovering correlations between the number of decisions a person makes and the quality of those decisions.[2] In other words, the more choices you face in a given day, the crappier your decisions turn out to be.

The good news is that you can create habits that reduce the number of decisions you have to make, which conserves your resources for the important stuff. It starts with simple awareness. Let's take a closer look.

What is decision fatigue, anyway?

Psychology defines decision fatigue as the pattern of deteriorating quality of a person's decisions after a long session of decision making. When our cognitive resources are exhausted, the quality of our decisions, self-control and task orientation decreases.[3] We can also suffer from decreased self-control, along with a reduced capacity and willingness to perform.[4]

Psychologists and neuroscientists studying the effects of decision making on the brain and body are examining everything from fine-motor skills and math abilities to food choices, figuring out how decision fatigue can deplete mental stamina.

To snooze or not to snooze?

Decision fatigue is the worst when we have too many decisions to make in a short amount of time. That said, decision fatigue affects individuals differently, and other factors like sleep, nutrition and stress also help determine our mental stamina.

Experts don't clearly understand how much a single decision contributes to fatigue, but there's some evidence that larger and more important decisions take the greatest toll. Therefore, the "cost" (monetary, emotional or otherwise) of a decision may influence the amount of fatigue imposed on the brain. An even more direct correlation exists between the number of decisions made in a period of time. When buying a car, people are more likely to choose the default options package if they're asked to make this decision at the end of the purchasing process rather than the beginning, showing less engagement and more reliance on decision shortcuts.[5]

Our daily decisions begin as early as whether to snooze the alarm clock. Then it's on to what to wear, what to eat, is there time to do dishes before leaving, what's the best route to work today—all before leaving the house. Next we face an onslaught of decisions at work, we're bombarded with product choices from countless retailers,

MICHAEL PETTIGREW/STOCK.ADOBE.COM

and we fill the gaps with social media: Do I keep scrolling? Do I give that a like or a love? Which game should I play on the subway home? By the end of the day, it's easy to see how we've made more than 35,000 decisions.

Decision fatigue takes some unique forms in the veterinary profession. From the front desk to the very back of the hospital, decisions drive our daily flow and success in practice. There's no shortage of decisions to make—whether it's prioritization of tasks and clients or determining the best equipment for the job, next task on our list or optimal path to the desired outcome.

Even after we've made a decision, we tend to overanalyze the outcome, contributing further to our fatigue level. When we give additional mental energy to a decision we've already made, we draw energy from our stamina for future decisions.

Facing the consequences of decision fatigue

Decision fatigue may mean we order pizza instead of preparing a healthy dinner or spend too much money shopping online when we get home from work. Manufacturers and marketing experts have even learned to capitalize on our decision fatigue with checkout lane offerings, which are less resistible after the prolonged mental strain of deciding between brands, sizes, sales and labeling in the grocery store.

Those consequences may not seem too severe. But what happens when someone suffering from decision fatigue holds the life of another in their hands? One study examining decisions made by parole judges found that these judges were more likely to grant parole in the morning, when they'd made fewer decisions that day and their mental energy was high. As the day progressed, the decision to grant parole fell by 10 percent.[5]

Likewise, physicians have been found to prescribe antibiotics more frequently toward the end of their shifts.[5] Another study determined that dermatologists were more prone to perform biopsies as the day progressed, and as biopsies increased, positive findings decreased—in other words, more patients were unnecessarily subjected to an invasive procedure.[2] Dermatologists were better able to identify the need for biopsy early in the day when they were fresh; later in the day they were less able to confidently determine signs of malignancy, so they more readily relied on biopsy.

Fighting decision fatigue is not just about preserving mental energy so we can persevere through fatigue at the end of the day. In veterinary medicine, we need to safeguard our decision making energy in order to provide the best level of care for our patients.

Make decisions ahead of time for mental peace

Fortunately, there are a number of simple steps we can all take to decrease the number of choices we have to make and increase our available mental resources for the day's most important decisions.

> Eliminate unnecessary decisions. Steve Jobs, Barack Obama, Mark Zuckerberg and countless other successful individuals wore some version of the same outfit every day. This is simply to eliminate the decision about what to wear. If a workplace requires uniforms, there's one less decision to make. Even if our veterinary clinic doesn't have uniforms, we can "assign" ourselves a set of scrubs for each day or pick a weekly wardrobe on the first day of the week, eliminating one decision for the day.

> Plan your meals. Determining what to eat and when can eliminate a large portion of the 200-plus food choices we make in a day. That's a lot of mental reserves! There are many great meal planning apps, books, menus and meal-delivery services. Use these tools to cut down on decisions about what to eat.

> Take advantage of technology. Using online tools can reduce many unnecessary decisions. Grocery shopping online reduces split-second decisions (and unnecessary purchases) by eliminating browsing through the grocery store. Purchase just what's needed and save time by not having to shop. Use navigation tools like Waze to eliminate decisions about traffic. By eliminating unnecessary errands, apps like these reduce mental expenditure.

> Stick to your decisions. Once you've made a decision, stick to it whenever possible. You'll be helping to train your brain that once it's done it's done, which will strengthen your ability to move forward mentally and not second-guess yourself, which drains capacity.

> Prioritize self-care. The truth is, you can't pour from an empty cup. Rest and rejuvenation just are not optional—you must prioritize them. Good nutrition and mental rest through meditation practice are two ways you can help to build your ability to mentally override racing thoughts, decreasing your mental depletion.

There will always be decisions to make, unexpected priorities and the need to change. But understanding the toll of unnecessary mental strain can help create awareness. Finding areas to decrease decision making will boost our ability to make quality decisions throughout the day, stay on track with decisions and self-control, and increase personal care. When we create self-determined decisions, a cycle of positive momentum begins.

Beckie Mossor, RVT, is the director of operations at 3K9 Working Dogs, which trains eligible canines to work in service, therapy, conservation and search and rescue programs.

References

1. Graff F. UNC TV; February 7, 2018 . UNC TV Science website. science.unctv.org/content/reportersblog/choices.

2. Seth D, Honda KM. Impact of time of day on dermatologists' decision to biopsy. *J Am Acad Dermatol* 2017;76(6; suppl 1):407.

3. Tian F, Exline M. Reduced clinical recall and attentiveness due to decision fatigue. *Am Jour Resp Crit Care Med* 2017;195:A7153.

4. Massar SA, Csathó Á, Linden DV. Quantifying the motivational effects of cognitive fatigue through effort-based decision making; May 30, 2018. Frontiers in Psychology website. www.frontiersin.org/articles/10.3389/fpsyg.2018.00843/full.

5. Polman E, Vohs KD. Decision fatigue, choosing for others, and self- construal. *Soc Psychol Personality Sci* 2016;7(5):471-478.

Teams, not fees, make equipment successful

If you want to make the most of a new purchase, you want your practice team on board and using it to its full potential. Here are my three steps to think about to get there. *By Angelina Morgan, CVPM*

This is the moment you've planned for—it's time to, for example, integrate a shiny, new radiography unit into your veterinary practice. Whether you're finally making the switch from film to digital, or upgrading your existing digital unit, you're getting ready to make a decision that will have a sizable impact on your team. And the last thing you want to do is throw a major investment against the wall to see if it sticks.

It's no surprise that the main deciding factor for this purchase centers on capturing the revenue. Formulas are everywhere online to help advise you on calculating your ROI. I think that's the easy part: fee setting, schmee setting. The way I see it, you can only price out your services within the limit of your market and demographic. To practice owners and administrators, the "value" of a cool new radiography unit means enhancing patient care, paying it off in a reasonable amount of time and adding to the bottom line. Value, however, means something different to everyone, and "everyone" includes the members of your team. So, before you embark on a number-crunching journey, it's in your best interest to diagnose the value of our new radiography unit to your team.

Step 1. Engage the people who are going to use it

They're be on the frontline using the new equipment, and they're the best people to help you identify obstacles that could stand in the way of success.

Start with your doctors. Their input and buy-in for pricing strategies and protocols are the most influential. Without their buy-in and their understanding of any new protocol changes, you risk implementing something that the doctors feel they need to create work-arounds for.

Give your veterinary technicians and assistants a voice in the planning phase. Ask them to highlight features they feel will help them provide the best patient care while considering their skills and contribution.

And what about the front desk? Is your reception team a part of capturing charges and making sure services rendered are accounted for?

Do you have inventory, maintenance or janitorial staff who will be essential in overall care of your new equipment?

dvm360 Find it all here.

Manager of the Year

Angelina Morgan is the most recent dvm360/VHMA Practice Manager of the Year. Learn from other winners and finalists at dvm360.com/pmoy.

ANDREY POPOV/STOCK.ADOBE.COM

Don't leave any position in your practice out of this exciting new enhancement! Once you've gathered the pertinent information to spark excitement throughout your practice, you're ready to hold a company meeting to announce all the ways you've listened to what they have to say. One way to engage a team is to ask for, listen to and validate their needs and concerns.

Step 2. Communicate the 'why' to your team to avoid people assuming things

It's a given that you're not going to be able to address 100 percent of everyone's concerns or ideas. But it doesn't mean you have to lose buy-in. This is where you want to be transparent and provide the reasons behind the final decisions. Be sure to connect how the new protocols and charges will provide sustainable growth for the practice overall. This could be the possibility of future equipment, increasing staff numbers, bonus structures or educational opportunities.

If you don't clearly communicate the hospital's "why," team members will need to draw their own conclusions.

If you don't clearly communicate the hospital's "why," team members will need to draw their own conclusions. And veterinary practice team members tend to be really imaginative when left to their own assumptions, so think smarter and stay in front of them.

If you find that the best decisions for the success of your new unit don't fall in line with some team members' strong opinions, it may be in your benefit to meet with those people individually for a more direct conversation. Make sure they know the non-negotiables and what impact they have for the practice while still keeping your lines of communication open.

Step 3. Empower the team to use the new equipment in every way possible

How many times have you seen a passionat technicians learn new information regarding a medication and turn that new knowledge into confidence? Knowledge, passion and confidence combined create an unflappable sense of empowerment.

In this empowerment stage, you can keep your employees engaged by fully comparing and contrasting the old unit's features to the new unit's features. Get creative with them and make their learning fun. Invite a radiologist to present an on-site lunch-and-learn to provide applicable skills in real time. Fully understanding the new equipment will help the team develop their own "why" as they see the enhancements they're bringing to patient diagnostics. Employees understanding the "why" feel more empowered to educate their clients, resulting in higher client compliance.

Yes, you've got to figure out what to charge for your services to make sure a new piece of equipment makes financial sense. But it doesn't matter how strategically you price your services if your team can't communicate the value to your clients. Before you overemphasize the numbers, take time to engage, communicate and empower.

The 2018 dvm360/VHMA Practice Manager of the Year, Angelina Morgan, CVPM, is hospital administrator at Pet+ER's two locations in Towson and Columbia, Maryland.

Could a **DVM-MS degree** open the door to One Health?

Modern medicine has reshaped our world. We think the next revolution is in recognizing the interdependence of all species and all life—and creating a dual degree to help.

By Peter Eyre, DVM&S, BSc, BVMS, PhD, Robert C. Brown, DVM

We no longer live in a time when the health professions and environmental sciences can function as separate entities. People, animals and plants constitute a single interdependent, global ecosystem. Biological threats—naturally occurring, accidental and deliberate—are among the most serious dangers facing the nation and the world.[1] Approximately 75 percent of emerging infectious diseases in humans are zoonotic, and most have wildlife reservoirs, yet the human and animal health professions as well as the environmental sciences remain uncoordinated. Veterinary medicine is largely overlooked in human health, as is evident from the small numbers of veterinarians employed in the global health sector.[2]

There is a critical need for veterinarians with a deep understanding of transdisciplinary, multispecies medicine that is not being achieved with the traditional system of veterinary education.[2,3] Given the fact that approximately 70 percent of U.S. veterinary graduates enter clinical practice, veterinary education is designed predominantly around individual animal medicine, especially companion animals.[2,3] In the overcrowded curriculum, there is no room for in-depth One Health education. The academic institutions need to find new ways of thinking about One Health and devising workable solutions. The colleges of veterinary medicine are the gatekeepers of the profession, and only

they can create educational programs that will produce a cadre of veterinarians thoroughly educated and trained for leadership roles in ecological health sciences and who will advance the role of veterinary medicine in global society.

The White House announced in September a new national biodefense strategy[4] that includes "advancing and sustaining a highly skilled public and veterinary health workforce" as well as "promoting global health security and trans-disciplinary collaboration." It's not clear when this initiative will begin and whether changes to veterinary education are intended. However, the program offers the likelihood of our profession having a larger footprint in the global health arena and offers justification and possible funding for the educational initiatives we're suggesting.

We believe that One Health education in the veterinary curriculum should be two-tiered, with those who will work at the frontiers of ecological medicine receiving a specialized education, while the majority are educated generally:

General: Integrate One Health principles into all four years of veterinary education, thus ensuring that all graduates understand the connection between the practice of veterinary medicine and environmental health, regardless of their career focus. This goal can be reached through minor changes in the veterinary curriculum.

Specific: Provide advanced education and training in interdisciplinary environmental health sciences to a chosen subset of veterinary students. This cannot be done using the traditional all-purpose model of veterinary education—only through curricular differentiation (i.e. tracking).[3,5]

Proposed One Health track

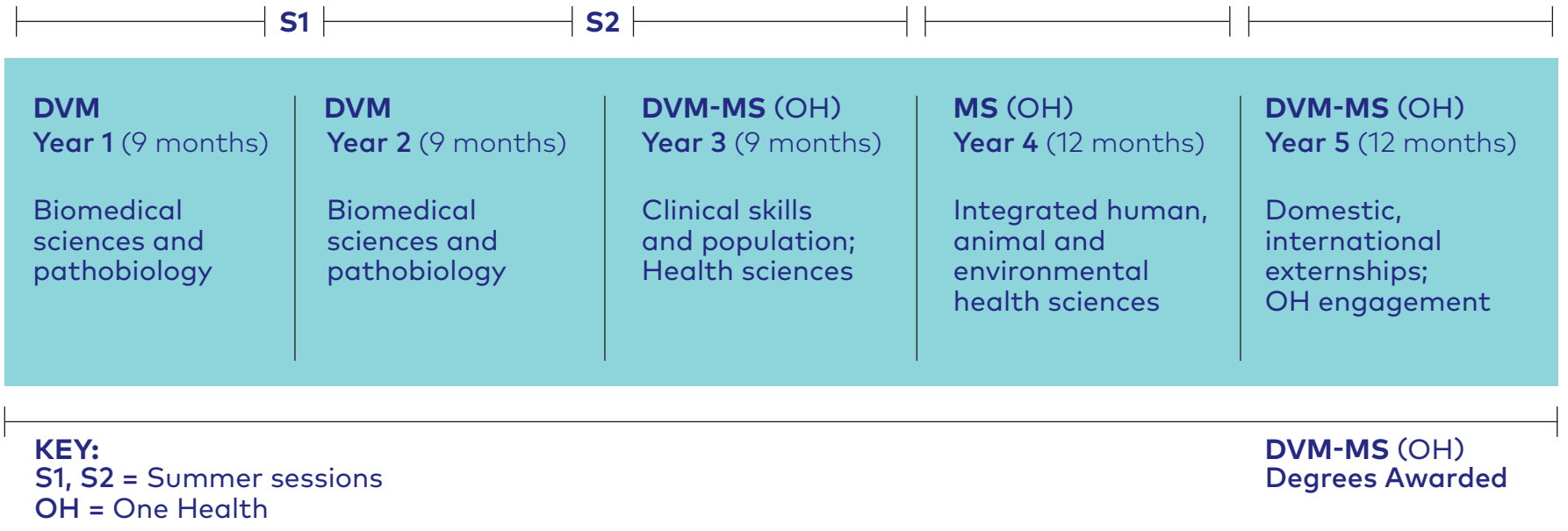
After completing years one and two of the standard veterinary curriculum, select students would be enrolled in a three-year DVM-MS One Health program (see figure on page 34). Selection criteria and enrollment numbers would be the prerogative of each college. (Interest in careers other than private practice seems to be growing,[5] so colleges should target these students.)

Year three of the DVM-MS program would cover advanced multispecies, multidiscipline clinical courses required for the DVM degree, plus elective courses in environmental health.

Year four would entail a 12-month nonthesis master's degree program in One Health, incorporating such areas as human and comparative medicine, environmental sciences, animal conservation, epidemiology, disease ecology, microbiology, toxicology, zoonoses and emerging infections, agroterrorism, food safety and security, and sociology. The year would be taught jointly by veterinary college faculty, medical school faculty, environmental scientists and conservation biologists, as appropriate.

Year five of the DVM-MS program would be a year of core and elective rotations in medicine and surgery required for the DVM degree. Some segments would be located at the veterinary teaching hospital, while others would be extramural, including environmental health locations. This arrangement would permit the establishment of standardized, constantly rotating externships. Every student should undertake at least one major international assignment.

In some instances, it may be possible to award academic credit for students'



prior experiences, including military service, thus giving educational value to One Health knowledge and skills already acquired in the field.

After completing year five, the DVM and MS degrees would be conferred.

The degree must be worth it

The combined DVM-MS degree in One Health would provide significant advantages for veterinary graduates to enter directly into the public sector. Nevertheless, the extra time and money are considerable. An important benefit of this model is that the MS degree is earned in just one year, compared to an independent master's degree that typically would take two years to complete. Another cost-saving measure would be to cut preveterinary education from four years to two years. In addition, students could undertake up to six months' paid employment during the summer months between academic years one and two, and two and three.

Participating colleges could offer student stipends, tuition waivers and travel allowances using income derived from grants and philanthropic endowments. Where possible, student awards could be structured so they're matched, in cash or in kind, by extramural host organizations. An excellent strategy would be to form a consortium of veterinary colleges, medical schools and environmental science departments that would create a fully integrated One Health curriculum and secure multiple resources and opportunities beyond what any institution could achieve individually. Participants would be true partners rather than competitors.

An important role of academia is to offer continuing education and training to practicing veterinarians. Thus, the veterinary colleges should:

Give occasional seminars in One Health to local veterinary associations.

Provide certificate-granting extended education for veterinarians wishing to explore new career opportunities in population health sciences.

Permit veterinarians who are able to invest the time and expense to enroll in Year 4 of the dual-degree program and earn the MS degree in One Health.

It would be essential for each participating college to appoint an experienced faculty member as leader of its One Health education initiatives. Success would depend on exceptional interinstitutional and interpersonal trust and cooperation.

A 'new medicine'

Veterinary medicine is justifiably proud of its history of providing excellent service to society. However, the profession clings relentlessly to its past successes, even amidst compelling evidence of the need to change. There is little sense of urgency, which is why the profession continues to talk about One Health instead of practicing it. Change takes more than good intentions. If our socioeconomic environment is holding us back, we must do everything within our power to change it. If we cannot change the environment, we need to change ourselves. This is not without risk. Even when it is for the better, radical change is always accompanied by temporary loss of security. The profession's future depends on closing the gap between what we are and what we could become. Veterinary medicine has barely scratched the surface of its One Health potential.

During the past half century, the veterinary profession has advanced in two remarkable ways. One is the immense growth in our understanding of health and disease—what we call medicine. The other is our recognition of the interdependence of human, animal and environmental biology—what we call One Health. That's a "new medicine" in the making, but one slow to develop, having been achieved in varying degrees at only a few academic institutions.[1,2,3] The veterinary colleges have a duty to produce appropriate numbers of veterinary graduates with the qualifications needed to fill the many roles for veterinarians in society, including One Health/ecological medicine. It is conceivable that this field could eventually develop into a veterinary specialty college.[3] And it is possible for veterinary medicine to lead the medical world in this endeavor if it chooses to do so.[3]

The curriculum we have described is not the only possible representation of multidisciplinary health education, but we suggest that our proposed DVM-master's degree in One Health is more holistic and covers the entire spectrum of ecosystem health (literally the health of the planet) of which public health is one component part.[6]

And while the veterinary colleges are the profession's "gatekeepers," it is the organized veterinary profession itself that holds the "keys" (accreditation and licensure) that can unlock future possibilities. For the One Health paradigm to succeed, unwavering support from leaders of the AVMA, AAVMC and other governing bodies will be essential. The futurex success of veterinary medicine depends on all of us.

An important benefit of this DVM-MS model is that the MS degree is earned in just one year. Another cost-saving measure would be to cut preveterinary education from four years to two years.

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

—Winston Churchill

References

1. Association of American Veterinary Medical Colleges. Agenda for Action: Veterinary Medicine's Role in Public Health and Bio-defense. *J Vet Med Educ* 2003;30(2).

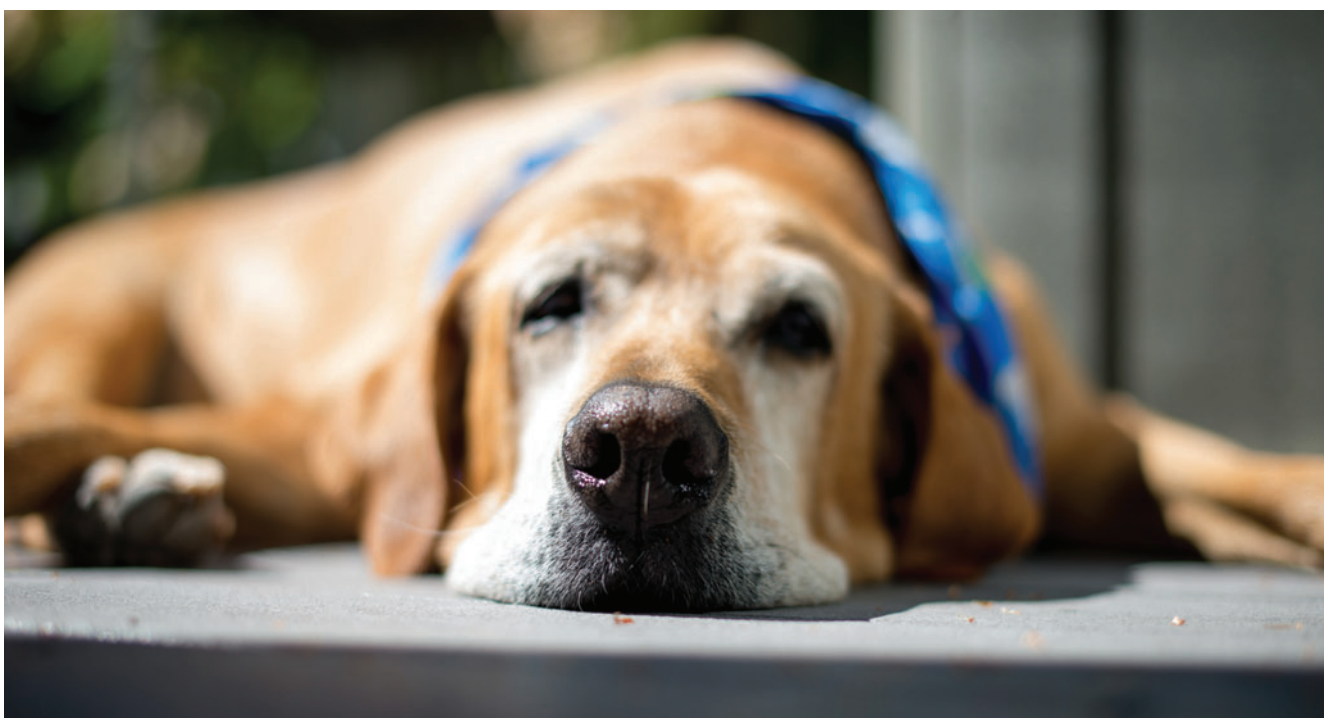
2. Hird D, King L, Salman M, and Werge R. A crisis of lost opportunity: Conclusions from a symposium on challenges for population health education. *J Vet Med Educ* 2002;29(5):205-209.

3. Nielsen NO, Eyre P. Tailoring veterinary education for the future by emphasizing one-health. *J Am Vet Med Assoc* 2017;251:502-504.

4. A New Direction against Biological Threats. info@mail.whitehouse.gov

5. Eyre P, Ragan VE. Choosing a career beyond private practice (lett). *J Am Vet Med Assoc* 2018;253:699.

6. Kahler SC. Environment: the bedrock of one-health. *J Am Vet Med Assoc* 2018;252:903-905.



Signs of chronic pain can appear to be cognitive dysfunction

This veterinarian likes the acronym DISHAA shared for signs of cognitive dysfunction in pets, but he also wants everyone to realize how similar those signs are to those of chronic pain.

DISHAA:

D -Disorientation
I -Interactions
S -Sleep-wake cycle
H -House soiling
A -Activity level
A -Anxiety level

I found the article by Julie Albright, MA, DVM, DACVB, "The Winter Years: Managing pets with cognitive dysfunction" (December 2018), very informative and helpful. As I read through the explanation of the DISHAA acronym, which was initially created by Gary Landsberg, DVM, DACVB, DECAWBM (companion animals), it made me realize how similar signs of cognitive issues are to chronic pain issues.

- **Disorientation** is sometimes seen in dogs that've had long-standing pain issues, where the pain occupies their thoughts in every waking moment.
- **Interactions** such as disinterest in games and social times are also diminished as the pet has to deal with chronic pain.
- **Sleep-wake cycle** can be secondary to finding a comfortable position to sleep in, as any of us with an acute or chronic pain condition can attest to.
- **House soiling** can occur as cats and dogs have trouble finding their owners to let them know they need to go out (in the case of dogs) and get to the litter box (in the case of cats).
- **Activity level changes** for obvious pain-related problems with ambulation.
- **Anxiety level changes** as pets find themselves less able to join in on social interactions, use stairs, walk across slippery surfaces and so on.

The DISHAA acronym is great, but let's always keep chronic pain in the back of our minds as a possible contributor to these signs.

— Michael Petty, DVM, CVPP, CVMA, CCRT, CAAPM, Arbor Pointe Veterinary Hospital, Canton, Michigan

LESLIE/STOCK.ADOBE.COM

Get in touch
Contact us on Twitter: @dvm360, on Facebook: facebook.com/dvm360, via email: dvmnews@ubm.com or online at dvm360.com/community.

dvm360 Find it all here.

Care about cognitive dysfunction?
Don't have the December issue? Read the article Dr. Michael Petty references at dvm360.com/winteryears.

Shutting down **angry tirades** at work

If casual comments offend someone in the workplace—even if they're made in jest—steps need to be taken.

Hayes Animal Care Clinic has grown a lot, now employing six veterinarians and a large support staff. This increase in staff has come with a shift in dynamics. The team of veterinarians comprises four younger women and two older men, which is reflective of most veterinary facilities since the profession is now made up mostly of women.

In addition, behavior that was appropriate in the past is no longer acceptable: inappropriate "water cooler comments" and covert workplace romances. These practices were never admirable, but they happened.

He says that if he were ever threatened in the clinic, he would bring in his gun and let them know where he stands.

Dr. Sam Kind has worked at Hayes Animal Care for 25 years. Despite his clinical expertise, his social skills remain lackluster. Over the years, when he has made inappropriate comments, staff have shrugged it off, saying, "That's just Dr. Kind being Dr. Kind." Not this time.

During a break at the clinic, Dr. Kind decides to regale the staff with his thoughts about political activists. He says that if he were ever threatened in the clinic by what he calls "extremists," he would bring in his gun and let them know where he stands. While the majority of the staff know Dr. Kind as a gentle man who blusters frequently, two of the newer, younger staff members don't. Shortly after the incident, the two team members express that Dr. Kind's gun comments have created a hostile work environment. These issues are brought to the attention of Dr. Hayes, the clinic owner.

Dr. Hayes meets with Dr. Kind to discuss the incident. Dr. Hayes, who has been a longtime colleague and friend of Dr. Kind's, states that as the owner of the clinic he is obligated to discuss the accusations with him. Dr. Kind is immediately defensive. He wants to know who made these accusations. He says his comments were clearly in jest.

Due to privacy issues, Dr. Hayes can't reveal the names of the team members. He expresses his belief that the comments were tongue-in-cheek, as Dr. Kind claimed. Nevertheless, he continues, any discussion in the workplace that creates an uncomfortable or threatening environment isn't tolerable.

Dr. Kind stomps out of the meeting. In the weeks that follow, it becomes clear that Dr. Kind now resents his coworkers. In addition, he repeatedly questions the staff about who complained so he can "put them at ease."

As a result, Dr. Hayes has another conversation with his friend and colleague. He tells Dr. Kind that this workplace transgression is not the end of the world. He advises Dr. Kind to note it, avoid such rhetoric in the future and put it behind him. Unfortunately, Dr. Kind can't do it. After 25 years of practice at the Hayes Animal Care Clinic, he announces his retirement.

Dr. Hayes doesn't discourage him. He sees this as an example of an old dog who can't learn (or accept) new tricks. Dr. Hayes knows the workplace is changing, and he thinks a more tolerant, sensitive approach to workplace behavior is a good thing, not a burden.

Do you agree with Dr. Hayes or were Dr. Kind's comments taken too seriously? Let us know at dvmnews@ubm.com.

Dr. Rosenberg's response

Workplace behavior has changed. Some critique the newfound emphasis on political correctness, claiming it removes the personal touch and fun from the workplace, but I disagree. Everyone in our field should be able to go to work feeling comfortable and safe while caring for patients. Not everyone enjoys off-color jokes and risqué remarks. I'm not saying these things need to be totally eliminated, but offensive rhetoric shouldn't be allowed. I hope Dr. Hayes and Dr. Kind can continue to be friends.

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

ALETIA2011/STOCK.ADOBE.COM

Service dogs' benefits transcend physical assistance to help with emotions, study finds

Purdue veterinary researchers document service dogs' impact on psychosocial health of both recipients as well as their family members. *By Theresa L. Entriken, DVM, Kristi Reimer Fender*

The Purdue University College of Veterinary Medicine presented research findings recently indicating that service dogs may have measurable effects on the psychosocial health of people with physical disabilities or chronic conditions.

The study, funded by Elanco Animal Health, used standardized measures to examine the relationship between the human-animal bond and psychosocial outcomes among people with service dogs. Results were published in the January 2019 issue of Disability and Rehabilitation, in addition to being presented at the VMX conference in Orlando in January.

Service, therapy, emotional support: Do you know the difference?

Here are some facts about the different kinds of dogs (and other animals) that provide aid to humans, as presented by human-animal bond researcher Maggie O'Haire, PhD, of Purdue University. Bet some of them are news to you!

> Therapy animals provide emotional support to many people in a specific setting (hospital, school, nursing home and so on).
> Emotional support animals help specific individuals.
> Service dogs perform tasks related to a patient's disability.
> Only service dogs can legally go anywhere.
> Emotional support animals can live in "no pets allowed" residences and travel in the passenger cabin on airlines, but airlines have size restrictions, and some now have species restrictions.
> Only therapy animals have a national registration/certification system and there are species restrictions—dogs and miniature horses only.
> Service, therapy and emotional support animals do not need to wear vests; none of them are legally required to be professionally trained.
> Only service dogs must abide by behavior standards.

"Our goal was to apply strong science in quantifying the effects that these dogs can have on their handlers' well-being," says Maggie O'Haire, PhD, associate professor of human-animal interaction at Purdue, in a release from Elanco. O'Haire led the research along with Kerri Rodriguez, a graduate student in human-animal interaction.

It may seem like common sense that a service dog would boost the emotional and social support, self-esteem and confidence of its owner, who is likely someone with a socially challenging condition such as cerebral palsy or muscular dystrophy. But evidence-based studies showing these psychosocial benefits have been weak, O'Haire told the audience at VMX. "After conducting our background research, we realized that the benefits of the bond were a hypothesis to be confirmed rather than an established fact," she said.

Plus, as the demand for service dogs increases—there were almost twice as many assisting people in 2017 (19,144) as in 2009 (10,769), according to Assistance Dogs International—strong scientific support is necessary to help manage recipients' expectations, enhance and maximize service dog benefits, boost recognition of the value of service dogs to insurance companies, and increase service dog access and public understanding of their roles, O'Haire said.

So Elanco and Canine Assistants, an organization that provides service dogs for a variety of physical conditions and disabilities, teamed up with the Center for the Human-Animal Bond at Purdue University College of Veterinary Medicine to quantify the impact of service dogs on patients' psychosocial health. Researchers recruited 154 individuals to participate in a cross-sectional survey, including 97 placed with a mobility or medical service dog and 57 on the waitlist to receive one (the control group).

Results showed that recipients with service dogs had significantly higher psychosocial functioning (social, emotional and work/school function) than the control group, but there were no significant differences in sleep, anger or social companionship. The recipients were all highly bonded with their dogs over the entire study period—the bond did not diminish over time.

In addition, the open-ended questionnaire revealed that psychosocial benefits were greater than the physical task-related benefits, and that the drawbacks to service dog ownership were public education and access, lifestyle adjustments, and dog care and behavior.

Results showed that before acquiring a service dog, 22% of recipients anticipated that public education/awareness about service dogs and their rights related to access would be a drawback, but that after acquiring a service dog, 44% of recipients reported this as a drawback.

O'Haire admitted that some of the results were surprising, such as the absence of a measurable benefit for social companionship associated with owning a service dog. But the fact that results were not positive across the board were evidence of the study's reliability, she said. "If we had seen a correlation in every category, we might have suspected our study design," she said.

Caregivers in the households of the people served by the dogs were also part of the study, and their results reflected the same effects—they reported significantly higher psychosocial functioning on the part of the recipients but no significant differences in sleep, anger and social companionship. Caregivers with service dogs also had better family relationships and less worry about the recipients' health.

AFRICA STUDIO/STOCK.ADOBE.COM

What **mediation means** for contracts

Why does my employment contract want me to waive my right to jury trial, and what does it mean for me as an associate?

You've been working at a nice multidoctor veterinary practice for the last five years and you really like it. The owner is an older gentleman but still sharp, and he keeps up with the latest developments in the field. One morning, he introduces you to the transition staff from PVP (Perfect Veterinary Practitioners, LLC), which, you learn, now owns the clinic.

The new management team explains to you that you'll be asked to sign a new employment contract that is the same, or even a little bit better, than the one you had with your old boss. You decide to give PVP the benefit of the doubt, and you head home to read over the new contract.

The document seems pretty much as advertised. You find a couple of points you want to clarify with the new corporate owners, but aside from that, you're pretty happy.

But wait! What's this? There's one sentence you find extremely concerning. And why is it written in boldface, large font and italics? It says this: "By signing this agreement, you acknowledge that disputes hereunder will be resolved by arbitration and you hereby waive your right to a jury trial."

The hair on the back of your neck is at attention. You think, "OK, so this big company is giving me an extra day of CE and a small bump in pay, but in exchange they want me to relinquish my constitutional rights? No way!"

Don't just quit

Before you decide to reject an otherwise acceptable employment offer from any potential employer, private or corporate, let's go over some fundamental facts about jurisdiction and waiver language in veterinary employment contracts.

First, recognize that I have used the

ANTONIOGUILLEM/STOCK.ADOBE.COM

above "corporate" example because, at least currently, associate candidates are far more likely to find a jury trial waiver or a mandatory arbitration clause (or both) in a contract proposed by a corporate hospital chain than one presented by a private partnership.

This isn't because consolidators are trying to pull a fast one. It's probably because corporations are more acutely aware of how the legal process operates. So, what do they know that the average veterinarian doesn't?

Realities of litigation

There are only a few issues that are likely to generate a trial-worthy dispute between an associate veterinarian and her employer. At the top of the list is noncompetition language. One side says it's enforceable; the other says it's overly burdensome.

The second issue is the dispute over compensation. For example, Dr. A is discharged without notice, and PVP says the firing was for cause, so Dr. A isn't entitled to any severance. Dr. A says there was no cause, so she wants the 90 days' severance as called for in the contract. Amount in controversy? Twenty-five percent of a year's pay (say, about $30,000). Not inconsequential. But not exactly a double homicide.

Does a jury trial sound like fun?

An aggrieved associate under contract, or her aggrieved employer, may decide to head to court over one of these two common disputes. Dr. A will likely pay hundreds of dollars per hour to engage a litigation attorney. PVP will spend a lot too, either for outside litigation counsel or perhaps for in-house counsel hourly pay.

Many motions and discovery sessions are scheduled as the case grinds its way forward. If the case is to be tried by a judge, it's very time-consuming. If one of the parties demands a jury be selected, the cost may be more than double.

Meanwhile, how does all this look from the associate's perspective? In the case of the noncompete, she probably won't be able to take a job within the contractually proscribed noncompete region until the case is first approved by a judge to go on the trial calendar and then works its way to the top of that calendar.

And don't forget: That same court likely hears not only contract disputes, but also cases about assault, murder, drug, conspiracy fraud and other criminal matters. And those cases are subject to the constitutional requirement of a "speedy trial." So PVP and Dr. A just wait in line.

So, what exactly is PVP asking?

Some employment contracts include a simple jury trial waiver. This means that a dispute under the employment contract would be heard by a judge. This waiver can be a disadvantage to either party in a noncompetition dispute. Judges in these cases have a great deal of discretion, and one man's reasonable noncompete might be five miles while another man's reasonable noncompete might be eight. A given judge may be a great believer in employees' rights. But she might also believe that when a person signs an agreement, they should abide by it.

In summary, trials are expensive and take a long time. And neither judges nor juries can be counted on to look favorably on you as "that poor, innocent young DVM who was bamboozled into signing a contract she didn't understand." So in our example above, PVP has proposed a potentially mutually beneficial alternative.

Alternate dispute resolutionis

Arbitration is a well-established system for resolving disagreements between parties without the costs in time and money associated with litigation. And the process isn't just used for "little cases"—it shows up in disputes involving publicly traded corporations and even foreign corporations and individuals.

An arbitration is carried out by an arbitrator who is usually selected by the parties involved. The selected person is usually an attorney, and he or she is required to follow strict guidelines with respect to fairness, impartiality and fiduciary duty.

The established rules of evidence existing in the jurisdiction where the arbitration is carried out may be more or less followed, but there is more latitude in arbitration than under the rules of evidence in either a state or federal venue.

Courts may still be involved

Even in employment disputes within the framework of a veterinary employment agreement, a judge is sometimes involved. This occurs most commonly in two instances.

First, the parties may not be able to agree on an arbitrator. In that instance, a judge may become involved in appointing a person to fill this role.

Second—and this is most common in the noncompetition contract language realm—the employer may have included language in the associate's contract providing that it retains the right to go to a judge for a temporary restraining order (TRO) to prevent an associate from continuing to violate a noncompetition or nonsolicitation term in the agreement.

After issuance of the requested TRO, the final resolution as to whether the associate is or is not in violation of an enforceable noncompetition would be up to an arbitrator.

What's up with all the bold type?

Arbitration certainly has its place in resolution of legal disputes. It can save potential litigants, and the court system, a great deal of time and money.

But be aware: Agreeing to give up an important legal right such as a judge or a jury trial of your rights is a big deal. Anybody thinking of signing away the right should carefully consider in light of the anticipated expense as well as any tactical disadvantage such a waiver might involve.

However, at the same time, consider the worst of all possible worlds: I recently was involved in a noncompete lawsuit in New York that would have involved a jury—except that the judge was so busy and his calendar so backed up that he demanded the parties hold settlement conferences before he would allow the case to go on the trial calendar.

This amounted to the most expensive version of mandatory arbitration on the market today, since the attorneys had no arbitrator and were being paid by the hour to battle.

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

Stop giving people in your life **advice**

If you like telling friends, family and colleagues what to do—and as a smart, solution-driven veterinary professional, you just might—it's time to ask whether it's what people you care about actually want or need in conversations with you.

Well, I did it again. I found myself volunteering unsolicited advice to my son. You know, those times when you hear yourself say to a child, "You should … " or "If it was up to me … ." Fortunately, he knows I have a history of this, and he can say to himself, There he goes again! Perhaps you've had a similar experience. Perhaps you know something about the issue at hand that another doesn't know. After all, you just want to help!

Most of us like helping other people. We all love giving advice. Please understand, I mean well. I realize we all mean well when we give advice. We all like to think someone we know solved their problem because of our advice. We want to be perceived as wise and we like to impart our wisdom. But don't equate advice with wisdom. Don't fall into the trap of thinking that your advice is wisdom.

Don't think of advice shared as wisdom imparted. You can share your experiences or knowledge, but you can't impart wisdom. Unlike science, wisdom is a personal, internal experience achieved that can't be transferred or learned. The 18th-century philosopher Immanuel Kant wrote, "Science is organized knowledge; wisdom is organized life." Unlike the Big Bang, wisdom develops.

Wisdom has been described as "experience distilled in a progression into principles for action"—from data to information to knowledge, then add a scoop of self-awareness and a dash of first-hand experience and some patience and, voila—the beginnings of wisdom. But again, wisdom, is not something that can be imparted fully ripened. It takes time, water and fertilizer to bring in a crop of wisdom.

If someone we know and love has a problem, we often feel compelled to get involved. Surely they want our advice. After all, we have the perfect solution to every problem (except our own). The problem with advising and "helping" others is that when someone takes our advice, it can be more of an ego boost and less an altruistic act. We can start to believe that as a certain world leader says, we're the best and smartest at … well, everything!

The problem with advising and "helping" others is that when someone takes our advice, it can be more of an ego boost and less an altruistic act. We can start to believe we're the best and smartest at ... well, everything!

And it was 6th-century BCE Chinese philosopher Confucius who told us long ago, "If you're the smartest

Heartgard® Plus
(ivermectin/pyrantel)

THE PROTECTION DOGS COME RUNNING FOR.

The only Real-Beef Chewable isn't just the #1 choice of dogs,[1] owners,[2] and veterinarians[3] - it's the one dogs look forward to. HEARTGARD Plus:

- ✓ Protects dogs from heartworm disease and treats and controls 3 species of hookworms and two species of roundworms
- ✓ Is approved for puppies as young as 6 weeks of age
- ✓ Over 30 years of trusted prevention

[1] Freedom of Information: NADA140-971 (January 15, 1993).

[2] Data on file at Boehringer Ingelheim.

[3] Data on file at Boehringer Ingelheim.

Boehringer Ingelheim

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.

Misguided, particularly unsolicited, advice rarely adds much to the solution.

Are you giving advice or leading your team?

Management involves making things happen. It refers to planning and implementation in order to build ideas into realities. The role of the leader is more ethereal: to inspire, motivate and create.

The core of management is stability-focused and directive in nature—it focuses on telling people what to do. A leader must inspire and convince people that following his or her leadership will result in everyone achieving their goal. While managers often take credit for successes of their team and place blame for shortcomings, a leader gives credit and accepts blame as part of the team.

The goal is to have the people you're leading want what you want. How do you do that? If you're lucky, you can use your natural charm and powers of persuasion, but not all leaders are inherently charismatic. You do have to be good with people—not by trying to build friendships, as a manager might do, but by developing a high "emotional quotient" level and cultivating sensitivity to others. These things come more naturally to some than to others, but they can all be learned.

While managers are often risk-averse—after all, risk makes their job harder—leaders are risk seekers. As leaders we frequently have to walk on thin ice—thoughtfully, carefully, but without fear. Again, sometimes our personal makeup in terms of risk tolerance plays a part in our suitability to be leaders but, as with people skills, the ability to wisely seek risk is a skill that can be cultivated.

One of the best books on leadership I have read is *On Becoming a Leader* by Warren Bennis. Even if you are an associate, read this and other resources and push yourself to lead. Your time will come.

person in the room, then you're in the wrong room."

A friend once told me, "People don't ask for advice because they want advice. They want affirmation for what they've already decided." In fact, much advice is useless at best and destructive at worst. By trying to be smart, we can create more damage. *Lord of the Rings* author J.R.R. Tolkien said, "Advice is a dangerous gift, even from the wise to the wise, and all courses may run ill." In other words, things can go from bad to worse.

I know better, but I'm particularly bad about foisting my advice on people I really care about like family and friends. "You should do this." "Have you tried that?" But misguided, particularly unsolicited, advice rarely adds much to the solution. Sometimes the best advice you can give is not providing any at all. But it isn't that easy, is it? Listening and empathizing with the other person and emphasizing understanding can be more helpful than advice.

Advice only works in one case: when someone asks for it—and even then not so much. While they might need help or even guidance, it doesn't mean they want our input right then. Sometimes people want to talk, not listen. Talking leads to self-reflection and gives people a chance to develop their own wisdom in time.

It doesn't mean that wisdom is not a goal to be pursued, but as Carole King said in her 1971 song, "It's going to take some time."

Dr. 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 veterinary practice and lives in Anguilla, British West Indies.

MEDICINE | Pain management

General practitioners:

Don't be daunted by the down dog

Down dogs often don't need a bunch of bells, whistles and credentials to recover. They may just need time and a team effort, says rehab specialist Matthew Brunke. *By Sarah Mouton Dowdy*

What goes through your mind when a down dog presents to your general veterinary practice?

If your instinct is to hightail it out of the situation, Fetch dvm360 speaker Matthew Brunke, DVM, CCRP, CVPP, CVA, understands. Down dogs can be expensive, time-consuming, heartbreaking and scary, he admits. But odds are that if you haven't seen one yet, you will, and when you do see one, you may not be able to refer it to a specialist right away.

If you feel ill-equipped to handle a down dog, Dr. Brunke says you might be overthinking it. You don't need a building full of high-dollar equipment and a string of credentials after your name to manage rehabilitation. You do, however, need a plan.

The down dog diagnosis

According to Dr. Brunke, the down dog can "arise" (pun intended) from several causes, including trauma (such as being hit by a car), congenital malformations, neoplasia, tick paralysis, tetanus, lumbosacral disease, degenerative myelopathy, intervertebral disk disease and fibrocartilaginous embolism, to name a few. So your first task with a down dog is to determine the cause.

For Dr. Brunke, this typically doesn't require anything that's overly complex or expensive. He starts with a thorough physical exam and history, along with a minimum database (complete blood count, serum chemistry profile and urinalysis, as well as a thyroid or urine culture, if indicated). Dr. Brunke also notes that rectal exams and survey radiographs can often be helpful in determining the big picture.

You may have noticed something missing from this list—magnetic resonance imaging (MRI).

"MRI is often the last test we need," says Dr. Brunke. "It's not something every client can afford, and it doesn't do a lot of good if the client can afford the MRI but not the treatment."

Commitment issues

Once you know why the dog is down, the treatment will of course be tailored to the diagnosis, but the care for these dogs is relatively universal, says Dr. Brunke.

His next step is to open up an honest dialogue with the dog's owners to

What about bummed-out pet owners?

For owners of outpatient down dogs who live far away, Dr. Brunke sets up times for them to visually check in on their beloved pets via FaceTime.

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

KSENIA RAYKOVA/SHUTTERSTOCK.COM

Be a pro at proprioception

"Every time these dogs stand up, you need to put their feet in the appropriate places, as conscious proprioception is a treatment modality," says Dr. Brunke. "However that dog learns to walk again is how it will walk for the rest of its life."

"If you try to squeeze all of their rehab activities into an hour, your [neuro] patients won't want to do anything for days. But if they can stay for the whole day, you can ... [work] with them for 15 minutes in the morning, afternoon and evening."

—Matthew Brunke, DVM, CCRP, CVPP, CVA

determine their particular expectations and capabilities.

"I always tell clients that it may take a full three months for the dog to start walking on its own, but I only ask them to commit to two-week blocks of treatment at a time," says Dr. Brunke. "I reassess constantly and meet with my team about a patient to reset goals every one to two weeks. The team approach is critical, as my team spends the most time with the patients and the clients."

Whether or not the down dog will need to be inpatient or outpatient depends on the severity of the case, the size of the dog, the client's capabilities and your facilities, says Dr. Brunke. For example, the 85-year-old owner of a 150-lb dog that can't use any of its legs should be inpatient. But if the young, healthy owner of a dachshund wants to watch her pet overnight and save a little money in the process, that's a bit more practical. However, Dr. Brunke does prefer hospitalizing down dog patients as it's more efficient and the outcomes tend to be better (assuming you have a 24-hour facility).

"For outpatients with neurologic causes, it's easier to have them come in for a whole day during the first four to six weeks," says Dr. Brunke. "Neuro patients are exhausted after as little as five minutes of work, so if you try to squeeze all of their rehab activities into an hour, your patients won't want to do anything for days. But if they can stay for the whole day, you can slowly build strength and stamina by working with them for 15 minutes in the morning, afternoon and evening."

Nursing down dogs back to health

"Fundamental nursing care is essential for these patients," says Dr. Brunke, "and it doesn't involve anything you haven't already learned in your years in veterinary school."

> Dr. Brunke stresses the importance of letting these dogs rest. He sets aside one day of the week (usually Sunday) as a rest day during which the dogs still get nursing care but don't do any rehab. Dr. Brunke also prefers to keep down dog patients back in wards where they can get some sleep.

> "Changing recumbency every four to six hours (and attempting to keep the dog sternal during the daytime) is vital for both physical and mental well-being. Clean soft bedding, with appropriate padding (to minimize risk for pressure sores) is also needed," says Dr. Brunke.

> Bladder expression may be necessary, but Dr. Brunke recommends avoiding urinary catheters (indwelling or temporary) after the first 72 to 96 hours for two reasons: 1) Urinary function can help you determine patient progress, and 2) Catheters provide an infection access point. "Urinary medications (e.g. phenoxybenzamine, bethanecol) should be used carefully and only after ruling out any infection," says Dr. Brunke.

> "Bowel expression may be needed as well," says Dr. Brunke. "This can be done in a variety of ways, but the important thing to remember is to give the patient time." Dr. Brunke has found that many clients (and clinicians) aren't patient enough to give these dogs the time they need to void on their own (in a harness, hoist, etc.). "What used to take them three minutes may now take 30 minutes," he says. "Enemas, oral lactulose and movement (walking) can help facilitate proper bowel movements."

> Dr. Brunke says that about a third of his inpatient down dogs end up clinically depressed. "These dogs are stuck in a hospital, unable to do the things they love," he says. "I'd be depressed too." So if he notices that a dog isn't making progress, Dr. Brunke will sometimes add an antidepressant.

Bust a (passive) move

Once you get these patients through the acute period and get their pain under control, then you can introduce some passive range of motion (10 to 15 reps per exercise, three to five times a day), says Dr. Brunke. This can be a great job for technicians, who can also teach the owners of outpatient dogs how to do the exercises at home.

"Once the patient is ready to progress to standing exercises, start with maximum assistance (in which you provide 75 to 100 percent of the work) a couple of times a day after range of motion exercises," says Dr. Brunke. "Items such as carts, harnesses or hoists can be quite useful to save the staff members' backs."

When the patient is strong enough to stand without as much assistance, you can start involving other items like a clinic quad cart or an overhead hoist system, says Dr. Brunke. (Note: Don't panic if you don't have these. They're only a good investment if you see a lot of down dog patients.) These standing exercises should occur every two to four hours, between 8 a.m. and 8 p.m. (This last part is especially important to explain to clients, as they sometimes think they need to get up at 2 a.m. to exercise their pups, resulting in tired patients and owners.)

Dr. Brunke also adds some proprioceptive training at this point, such as gently rocking the dog back and forth and side to side.

According to Dr. Brunke you need to give the patient time to rest between these exercises, and he often uses additional modalities during these resting periods (e.g. laser therapy, massage, thermotherapy, cryotherapy and electrical stimulation).

If you'd rather refer, that's OK

There's no shame in referring, and sometimes you won't have a choice due to the dog's size or treatment needs (e.g. it can take a team of three or four people to move a dog that weighs 100 lb). But don't immediately assume a down dog is out of your scope because you're a general practice.

"Often, progress can be made with these patients by working with owners to set and work toward reasonable goals," says Dr. Brunke. "I recommend starting with small and medium dogs first until you get more comfortable with the process." In other words, start with a Maltese before you attempt a Mastiff.

dvm360 Find it all here.

Real rehab, real useful

Dr. Brunke has written or been a source on other great content. Find his most up-to-date list of contributions at dvm360.com/Brunke.

The ABCs of veterinary dentistry: 'R' is for retained, primary, deciduous teeth

Attention to persistent primary teeth is essential to the dental health of our patients, especially smaller breeds such as Maltese, Yorkshire terriers, Pomeranians and miniature Schnauzers. *By Jan Bellows, DVM, DAVDC, DABVP, FAVD*

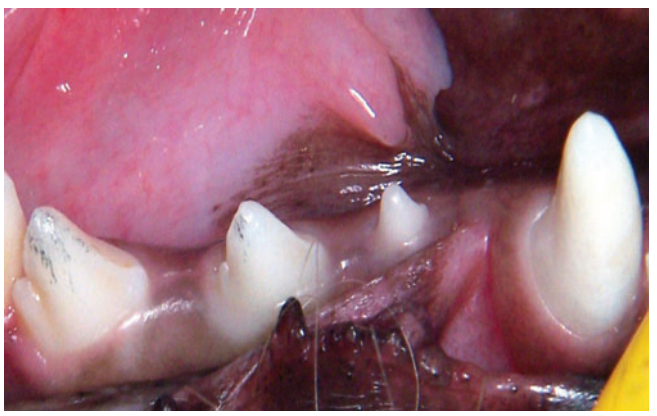


Figure 1A. A retained right mandibular primary second premolar.

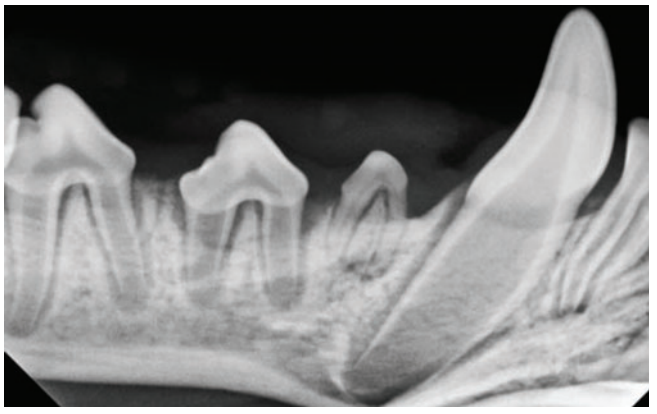


Figure 1B. A radiograph confirming the absence of secondary first and second premolars.

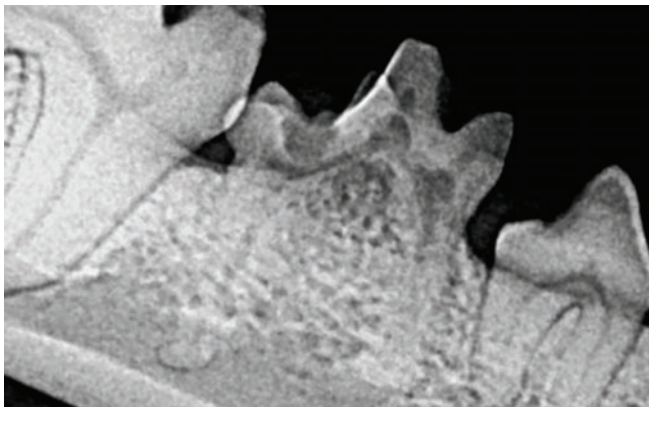


Figure 1C. A retained deciduous fourth premolar.

In cats and dogs, primary (baby) tooth roots are normally resorbed from pressure as the permanent (secondary, adult) teeth erupt pushing them out of the alveolus, starting at 14 weeks of age. The mechanism that causes resorption of primary roots isn't fully understood, nor is the cause of resorption failure. Persistent primary teeth fail to exfoliate because the permanent tooth buds are malpositioned rostrally (maxillary canines) or lingually (mandibular canines), removing the direct force to push them out of mouth. Permanent canines normally erupt by the time most dogs and cats are 6 months old.

Defining the problem

First, let's take a look at the terms:

Primary. The first teeth, which are normally shed and replaced by permanent teeth.

Retained. Primary teeth that continue to be present in cases where secondary teeth are not present.

Persistent. Primary teeth that are still present despite the eruption of permanent teeth.

Deciduous. A dental term applying to the primary teeth that is borrowed from trees and shrubs that seasonally shed leaves as a tree matures.

Secondary. Adult teeth.

The terms "retained deciduous" and "retained primary" should be reserved for rare cases when only the primary tooth clinically and radiographically exists without an accompanying secondary (adult) tooth. (Figures 1A-1C).

Persistent primary teeth are diagnosed when the primary and secondary teeth are present in the same alveolus. This results when the normal resorption of primary teeth fails to oc-

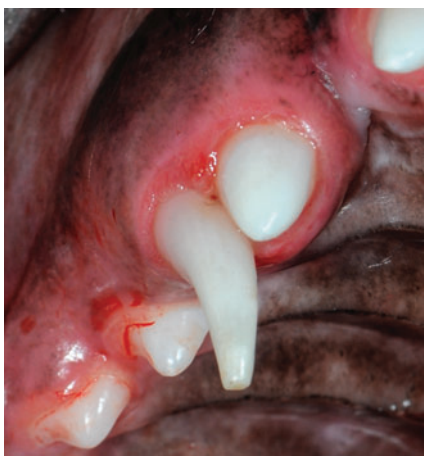
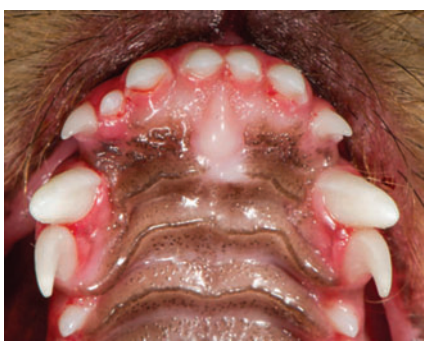


Figure 2A. A persistent right maxillary canine. Note the swelling around the primary and secondary canines.



Figures 2B and 2C. Persistent primary maxillary canines and the right third incisor.

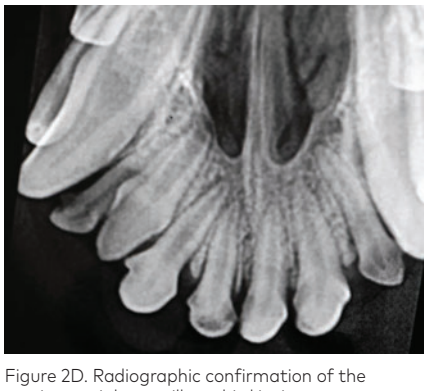


Figure 2D. Radiographic confirmation of the persistent right maxillary third incisor.

ALL PHOTOS COURTESY OF DR. JAN BELLOWS

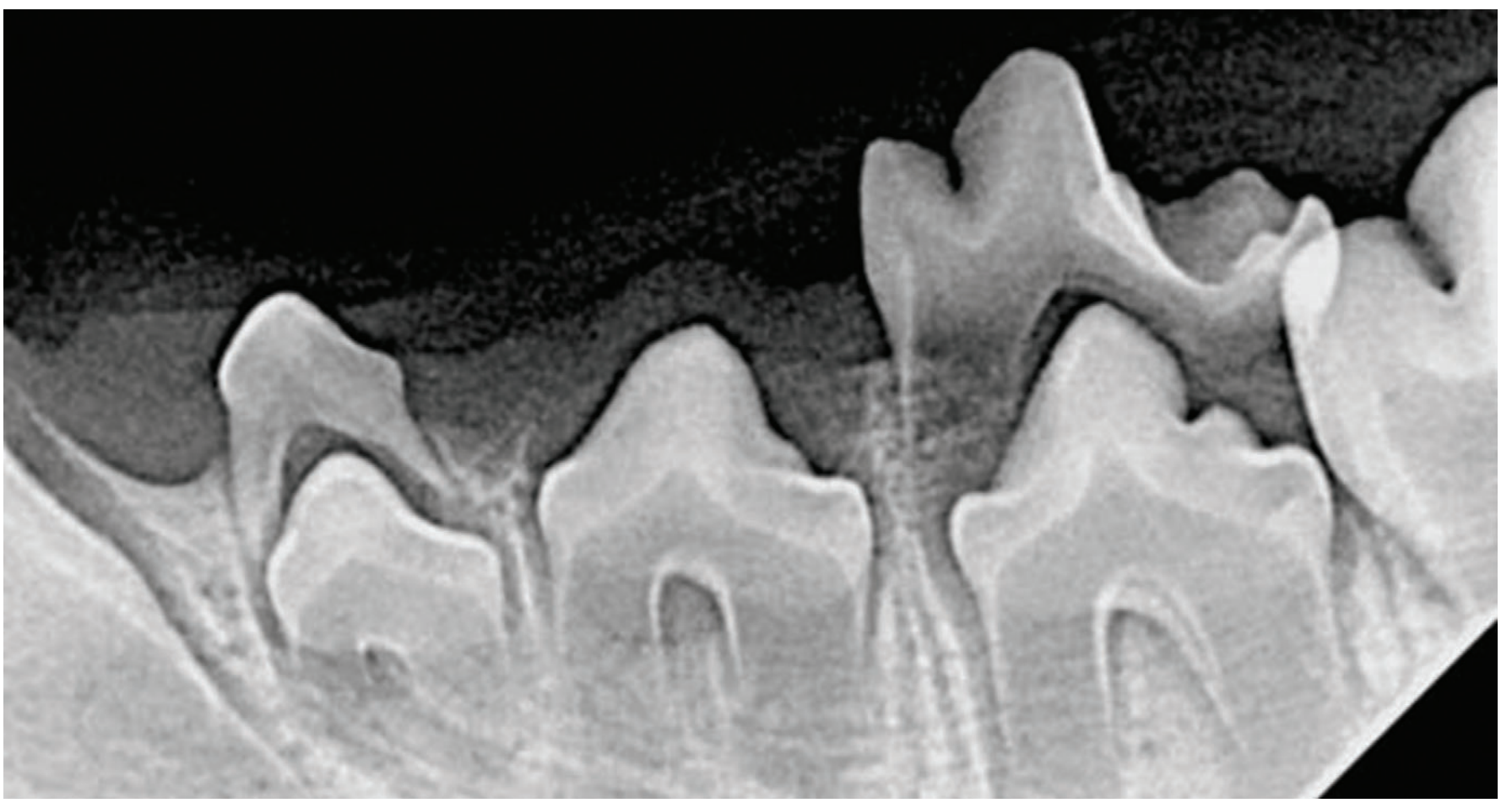


Figure 2E. Persistent primary left mandibular second and fourth premolars.

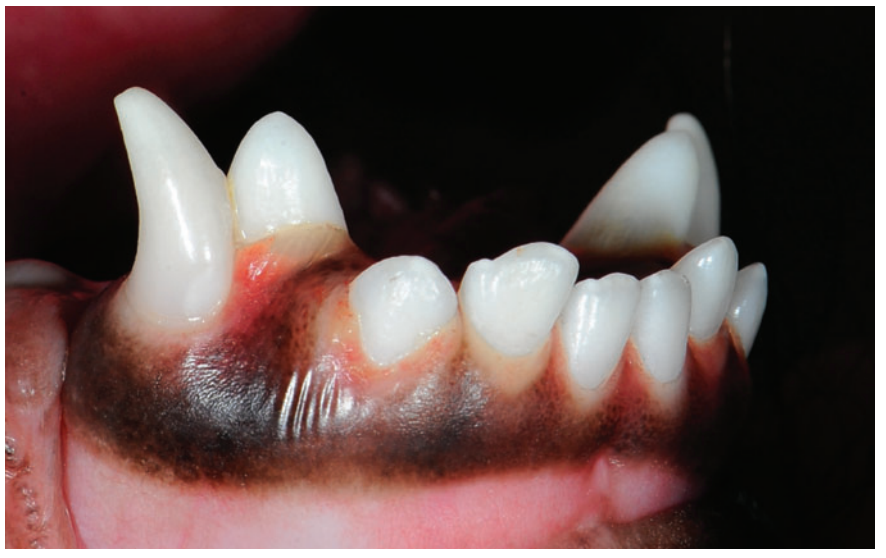


Figure 3A. A persistent primary right mandibular canine producing mesioversion of the secondary mandibular canine.

Figure 3B. Mesioversion of the left mandibular canine.

cur due to malposition of the secondary tooth, causing the secondary teeth to erupt next to the primary teeth. A retained deciduous tooth occurs where there is a primary (deciduous) tooth without an accompanying secondary (adult) tooth visible either clinically or radiographically (Figures 2A-2E).

Persistent primary teeth may overcrowd the dental arch, moving the secondary teeth to abnormal locations, causing oral discomfort. Double sets of roots may also prevent the normal development of the alveolus and periodontal support around each permanent tooth, resulting in early tooth loss. Malpositioned, primary mandibular canine teeth result in mesioversion (lingual displacement) of the permanent mandibular canine teeth causing traumatic occlusion of the hard palate (Figures 3A and 3B).

When a delayed approach is taken to determine whether the persistent primary tooth will exfoliate, the secondary adult tooth often becomes permanently malpositioned, requiring orthodontic movement, crown reduction or extraction. It is for this reason that the "wait and see" approach isn't recommended.

Just say 'no' to a trim

Some breeders trim the primary canine crowns in hopes that they'll shed early and possibly prevent orthodontic problems. Trimming, also known as deciduous tooth crown reduction, isn't recommended because it results in pulp exposure, causing the animal pain and risks the development of the surrounding permanent teeth.

Treatment

Now that we've defined the problem, let's fix it! A persistent primary tooth should be extracted as soon as the permanent tooth is observed to erupt in the same alveolus. The goal is to remove the entire primary tooth without fracture of the root. Examination of intraoral radiographs before extraction is important to get an appreciation of the subgingival anatomy of the tooth to be extracted.

Here are the extraction steps after examining intraoral radiographs:

Figure 4A. Left mandibular persistent primary canine tooth. Gingival incision used to expose the persistent primary tooth.

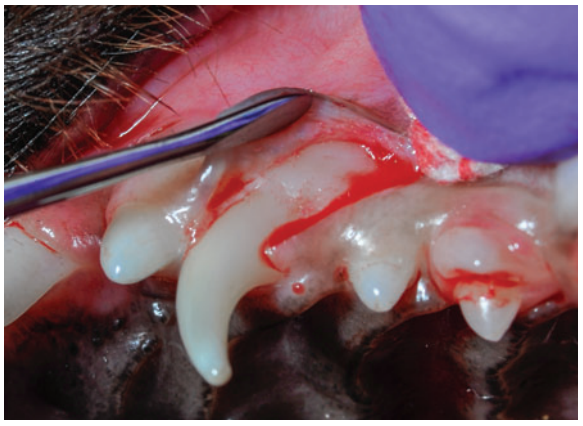


Figure 4B. Flap exposure of primary canine tooth.

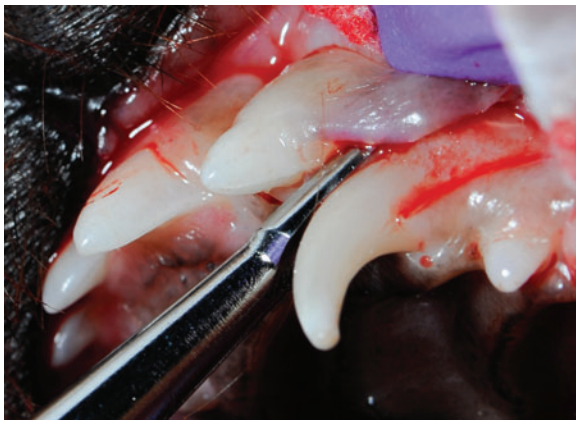


Figure 4C. Wing-tipped elevator used to loosen the primary canine tooth.

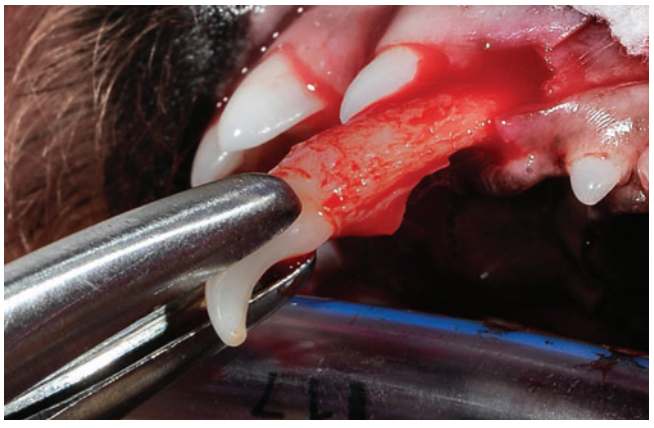


Figure 4D. Primary canine tooth delivered from the oral cavity.

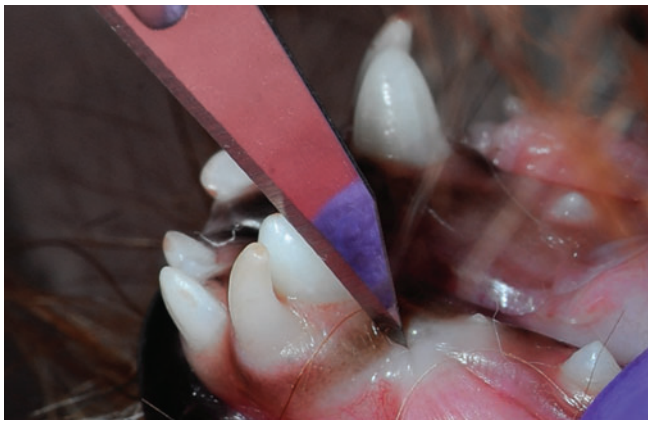


Figure 5A. Left mandibular persistent primary tooth extraction indicated.

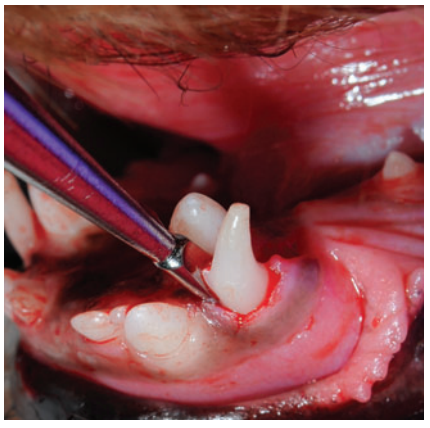


Figure 5B. Wing-tipped elevator used during extraction.

1. Make a diagonal incision over the caudal primary canine root (Figures 4A and 5A).
2. Use a No. 2 molt periosteal elevator to expose the primary canine root (Figure 4B).
3. Insert and gently torque a wing-tipped elevator to create mobility of the tooth before delivery (Figures 4C and 5B).
4. Use extraction forceps or a rongeur to deliver the tooth from the alveolus (Figures 4D and 5C).
5. Suture the incision with 4-0 absorbable suture on a P-3 reverse cutting needle.

Extraction must be done carefully to avoid accidental damage to the unerupted, permanent canine tooth that lies lingual to the mandibular teeth and rostral to the maxillary deciduous canines. Avoid placing the elevator along the lingual surface of the mandibular deciduous teeth. Instead, only elevate along the mesial surface (front), labial surface (toward the lip), distal surface (caudally) of the mandibular deciduous teeth and buccal distally around the maxillary deciduous canines. If extraction is performed early, the abnormally positioned permanent tooth frequently moves into the normal position.

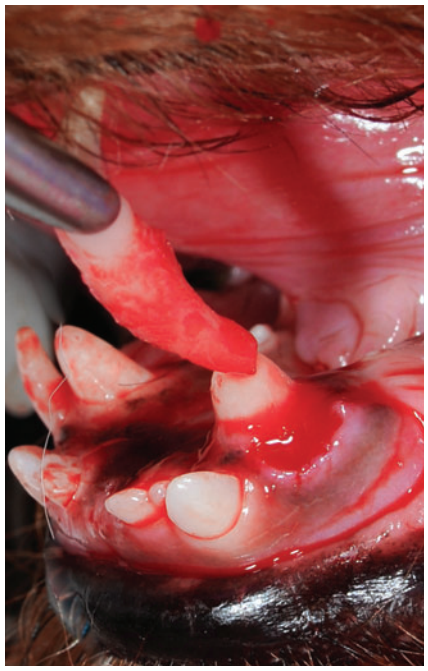


Figure 5C. Persistent primary tooth delivered from the oral cavity.

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.

A persistent primary tooth should be extracted as soon as the permanent tooth is observed to erupt in the same alveolus. The goal is to remove the entire primary tooth without fracture of the root.

Senior diets: Do they live up to the hype?

Only have a few moments to discuss nutrition with owners of senior pets? These pros have your talking points. *By Sarah J. Wooten, DVM*

Is your client still feeding an adult maintenance diet to a senior pet? It's time for a conversation. We caught up with two veterinary nutrition experts—Joe Bartges, DVM, PhD, DACVIM, DACVN, professor of internal medicine and nutrition at the University of Georgia, and Ernie Ward, DVM, founder of the Association for Pet Obesity Prevention—for the latest on senior nutrition and how discussions with clients should go.

As experts often do, they diverge in their opinions, but on one point they're in agreement: Nutrition is vital for the health of our senior veterinary patients.

Question: Do healthy senior dogs have different nutritional needs than younger dogs? If so, what differences are most important?

Dr. Bartges: There are some known differences, but there's still a lot we don't know. For example, we know that older beagles require about 50 percent more protein to maintain muscle mass than younger beagles. However, there's no "senior nutritional profile" for all dogs. The three things I think general practitioners should keep in mind are:

Protein: Healthy older dogs need more protein than younger dogs. At the very least they don't need protein restriction. But it's not only the *amount* but the *quality* of the protein that's important—you can feed a lower quantity of a higher-biological-value protein and get the same nutrition.

Energy: It's incorrect to assume that dietary fat and therefore energy should be restricted. While some older dogs may require this, a diet should be individualized depending on how the dog is doing. Older dogs need enough energy to maintain body and muscle condition without becoming overweight. Typically, we calculate the resting energy requirement (RER) and multiply this by a factor for the maintenance energy requirement (MER). The factor used depends on reproductive status and activity. The more active a dog, the more energy it takes to maintain.

Omega-3 fatty acids: Because osteoarthritis is common, omega-3 fatty acids may be beneficial and may decrease the need for drug therapy. For dogs with arthritis, we typically administer 700 to 1,500 mg of the sum of EPA and DHA—not just total fatty acids. We use this sum because EPA and DHA are the specific omega-3 fatty acids incorporated into cell membranes and metabolized. Avoid providing too much, as it can cause diarrhea, vomiting and possibly bleeding issues.

OKSIX/STOCK.ADOBE.COM

fetch™
dvm360
CONFERENCE

We believe in evidence-based learning (and fun)

At our conferences you'll find yoga and meditation and the opportunity to tackle your issues and focus on yourself. But you'll also find top-notch clinical CE that keeps you up to date on the most important issues delivered by thought leaders and innovators in the field.

At Fetch dvm360 conference, you'll get:

- ✓ Resources you need for every problem you face
- ✓ Inspiration to love your job again
- ✓ Connections with like-minded peers

Take your CE to the next level.

We have three dates and locations each year.

Go to fetchdvm360.com to learn more.

Register today.

Dr. Ward: First, there's no simple rule of thumb—each individual animal will require nutrition based on its particular genetics, lifestyle and medical history. But in general, the scientific evidence is clear that dietary metabolic needs change as dogs age. Protein digestibility is one factor that's affected. We have to watch calories, but we still want to maintain adequate protein that's highly bioavailable and digestible.

How much protein? It depends on how much the dog is eating. My experience involves weight loss and treating obesity. If a dog is eating well (ample volume), a lower-protein formulation may be sufficient. But in general, higher-protein diets are associated with improved weight loss and maintenance of lean muscle mass. I think there's sufficient evidence to support 28 to 32 percent protein on a dry-matter basis (DMB) for healthy older dogs, especially if weight loss is needed.

Q: How about cats?

Dr. Bartges: Similar to older dogs, nutrition should be individualized and not prescriptive. Approximately 20 percent of older cats have decreased digestibility, but this means 80 percent don't. As with dogs, there are no published nutrient profiles for older cats; however, nutritional requirements for cats appear less likely to change with aging when compared with dogs.

Dr. Ward: With protein digestibility, the evidence is clear that cats need higher protein levels as they age. When cats start reaching age 10 or so, that's when protein digestibility drops off the cliff, so to speak. That's why we're seeing senior cat formulations in the marketplace with higher protein levels.

There's some evidence (and my experience) that cats may benefit from about 5 g/kg/day protein to lose or maintain weight. And if we're worried about kidneys, we actually need to watch phosphorus levels more closely than crude protein. Studies have shown older cats to have decreased fat and protein digestibility, requiring higher MER.

"Feed to the patient, not the chart" is the advice I most often provide.

Q: What's the most important thing GPs should know about nutrition, and how can we communicate that to our clients?

Dr. Bartges: Nutrition should be individualized. Some older dogs require less protein, some more; some need less fat and energy while others need more; some need more fiber while some need less, and so on. Just because a dog or cat is 15 doesn't mean it needs a "senior" diet—it depends on the dog's activity, metabolism and health status.

Dr. Ward: I want to make sure the food clients are feeding has a claim that it's specially formulated for senior pets. I tell pet owners that's the first thing we'll look at, because there are regulations around those terms. If a diet says it's for senior pets, it's going to have a slightly different formulation than a growth or adult maintenance diet. The other thing I tell pet owners to look for is a diet that contains antioxidants and immune-boosting supplementation.

Q: What are some common nutritional challenges for seniors?

Dr. Ward: Without a doubt it's low protein. As protein metabolism changes with age, pets begin to lose lean muscle mass, which is a serious issue. If they're losing lean muscle mass when they're 10, 12 or 13 years of age, they're getting weaker and weaker. By the time they're 13 to 15, cats can't get in the litter box and may be peeing on the carpet, or the dog may struggle to go up the steps. So it's really important to preserve lean muscle mass. I think the biggest mistake I see clinically is that clients are feeding an adult maintenance diet that has slightly lower protein levels than I'd like for a senior pet.

Dr. Bartges: Weight loss and muscle mass loss. Unless there's a health condition necessitating it, protein and energy restriction is not necessary and some older patients actually require higher protein intake.

Q: What diseases can we help minimize or prevent with proper nutrition in senior dogs and cats?

Dr. Bartges: Much of what we know is more reactive with our nutritional recommendations. For example, my patient has gastrointestinal disease so I change the diet to a novel or hydrolyzed protein. Or I use "joint diets" in young-adult large- and giant-breed dogs because of the risk of osteoarthritis later.

Dr. Ward: This is the big question everybody wants the answer to. Adding or changing protein sources, or adding different botanicals and nutritional supplements—quite frankly, we just don't have clear evidence for the benefit, but we have trends toward benefits.

There are two benchmark studies, one by Waltham and one by Purina, that looked at a lifetime of nutrition in dogs. One common denominator was that caloric restriction improved longevity and quality of life and reduced comorbidities. When I talk to pet owners, the first thing I say is that nutrition should help extend the longevity and quality of life, and that starts by maintaining a healthy weight.

Q: At what pet age should GPs start counseling clients on changing nutritional needs?

Dr. Bartges: At every examination starting with the first examination. Nutritional assessment should be done on every patient and nutritional recommendations made on those assessments. Good resources such as AAHA's Nutritional Assessment Guidelines for Dogs and Cats or the Nutrition Toolkit from the World Small Animal Veterinary Association are available.

"Nutrition should be individualized. Just because a dog or cat is 15 doesn't mean it needs a 'senior' diet—it depends on activity, metabolism and health status."

—Joe Bartges, DVM, PhD, DACVIM, DACVN

Dr. Ward: I structure this discussion in three phases.

The first phase is puppy- or kittenhood. You want to communicate to pet owners that as their puppy or kitten grows and ages, we're going to change the diet to match the life stage. The first year of life we have a special formulation that helps them grow strong bones, develop a healthy immune system and brain, and so forth.

The second phase is adult maintenance stage, and then the senior stage. If you start positioning the message early that there will be diet changes, then you'll be more successful with your diet recommendations.

For cats, I prep clients to switch to a senior diet around age 9 to 10, because that's when I believe the physiological changes really set in. For most dogs, I'm OK with the seven-year switch. With some small breeds you can wait till age 9 or 10, but the reality is somewhere around age 7 you need to be having that conversation with dog owners.

One of the things veterinarians can do is use their reminder system to send a special birthday message on the 7th or 9th birthday that says, "Happy birthday and congratulations on the age milestone! Here are a few things to look out for, including changes in nutrition."

Q: What advances in senior nutrition are exciting to you?

Dr. Bartges: The benefits of omega-3 fatty acids, probiotics and utilization of therapeutic diets for prevention and early intervention versus their standard use when a disease is clinically evident.

Q: Is it helpful for GPs to draw parellels to senior nutrition in humans in client communication?

Dr. Bartges: While this approach is tempting, it's not always accurate. I prefer to discuss the individual pet in a patient-centered approach and use humans for comparison to illustrate points, including those that are similar and those that are not.

Dr. Ward: When it comes to counseling clients about senior nutrition needs, I wouldn't shy away from the menopause analogy. That's what I've always used because humans have been taught since we were young that a change of life is going to occur. Obviously I'm a male, but still, I'm exposed to that.

It's a salient point because it's a physiological hormonal and cellular change that you can't see—but you sure can see the effects. It's the same thing for aging dogs and cats. The system isn't probably as robust as it once was with all those little things we can't see, and we can try to meet additional needs with nutrition. This will really make the lightbulb in your client's head light up!

Dr. Sarah Wooten most recently practiced as an associate in Greeley, Colorado, and is a frequent speaker at the Fetch dvm360 conferences.

The first 3 minutes:
Recognizing a horse in shock

Use a stepwise triage exam and cardiovascular smarts to guide treatment. *By Jennifer Gaumnitz*

When you first approach a horse that may be in shock, "You're asking yourself, 'Is this patient cardiovascularly stable? Do I need to do something to keep it alive until I can figure out what's going on?'" says Jarred Williams, DVM, PhD, DACVS, DACVECC, a clinical assistant professor in Large Animal Emergency Medicine at the University of Georgia College of Veterinary Medicine. In his recent Fetch dvm360 conference session, Dr. Williams shared his strategy for identifying a horse in shock and ways to differentiate the types of shock, based on where the problem is in the horse's cardiovascular circuit.

The definition of shock

When a horse is in shock, the bottom line is that its tissues are not being perfused adequately. Dr. Williams says, "The important thing about blood not getting where it needs to go is that red cells saturated with oxygen are also not getting there." Although cells can survive without oxygen for some time through anaerobic metabolism, it comes down to the balance between how much ATP the cell is making versus how much ATP the cell is using. Dr. Williams says, "Technically speaking, shock is all about the ATP." But he acknowledges that you can't say to clients, "I don't think your horse's cells are producing enough ATP." Instead, you can say, "I don't think blood flow is going where it needs to well enough."

Dr. Williams explains that a cell can make a ton of ATP, but without oxygen it can only make a little bit (32 to 36 ATP with aerobic metabolism versus approximately 4 ATP with anaerobic metabolism—remember studying the Krebs cycle in biochemistry class?). In a sick animal, you might have decreased oxygen delivery (DO2). The horse might be dull, depressed, barely moving, so its oxygen utilization (VO2) is also reduced. What's important is the ratio of DO2 to VO2, Dr. Williams says.

"It's like your bank account—it doesn't really matter how much money you make," he says. "It's how much money is in your account at the end of the month. If you make $1 million a month, but spend $2 million a month, you're going to be in the red quick. If you make $10, but don't spend any of it, you're going to stay in the black. All we really care about is that the DO2 stays above the VO2 in any scenario. If that happens, you're normolactemic and likely perfusing adequately.

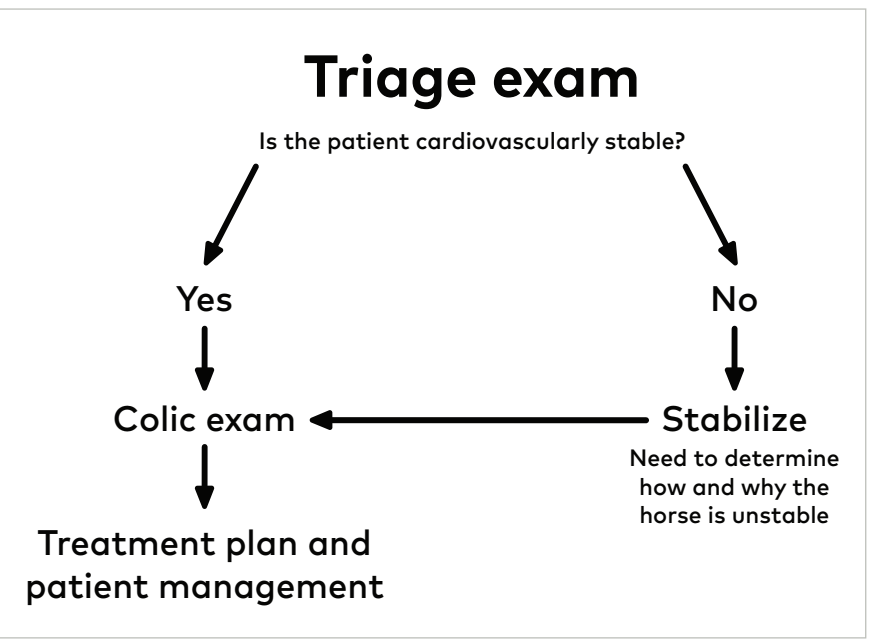
"The bottom line is when you're not perfusing adequately, then your VO2 can exceed your DO2, and your cell needs may not being met," Dr. Williams says. "That's a state that you cannot survive for a prolonged period."

The 3-minute triage

Dr. Williams says that when you perform your initial triage examination of a sick patient, you're figuring out whether the horse is unstable and, if so, how you're going to stabilize it (see the figure above). When a horse is not cardiovascularly stable, it needs to be stabilized before you can proceed with any other treatment. You need to quickly determine why it's unstable, so you can determine the best way to stabilize it.

"Some treatments for shock would be the exact opposite treatment for other types of shock," Dr. Williams says. "So, knowing what type of shock has occurred is vital." Once the horse is stabilized, you can proceed and figure out what's actually occurring with the horse to put it in that state in the first place.

Dr. Williams says one helpful part of the triage examination is looking at mentation: "When the horse walks through the door, does it seem mentally appropriate? Is it dull or depressed? Does it seem ataxic because of a primary neurologic problem, or is it ataxic out of weakness? Watching the horse walk in and seeing its demeanor, trying to extrapolate about blood flow to the brain is important."



Dr. Williams says you may have learned to do triage examinations differently, but he always starts at the head: "I feel the ears and assess the horse's peripheral temperature in relation to its core. I look at the eyes—are they sunken? I look at the gums, pick up the lips, check the capillary refill time (CRT). I feel under the horse's face for a pulse. I'll check the jugular refill time and listen to the heart for any arrhythmias. Does it sound muffled? Then I'll work my way further down. I'll feel the distal limbs for coolness. I typically listen to the GI tract because I'm right there, even though that's not really part of a triage exam. Then I listen to the lungs and take a core temperature."

Exploring the circuit

As you know, the cardiovascular system creates a closed circuit (see the figure on page 44). Blood leaves the right heart, goes to the lungs, picks up oxygen and goes back to the left heart. The left heart's whole job is to send oxygenated blood to the tissues. After oxygen is delivered, deoxygenated blood goes back to the heart. Dr. Williams says, with different types of shock, there's a problem somewhere in this circuit with the pump, the tubing or the fluid.

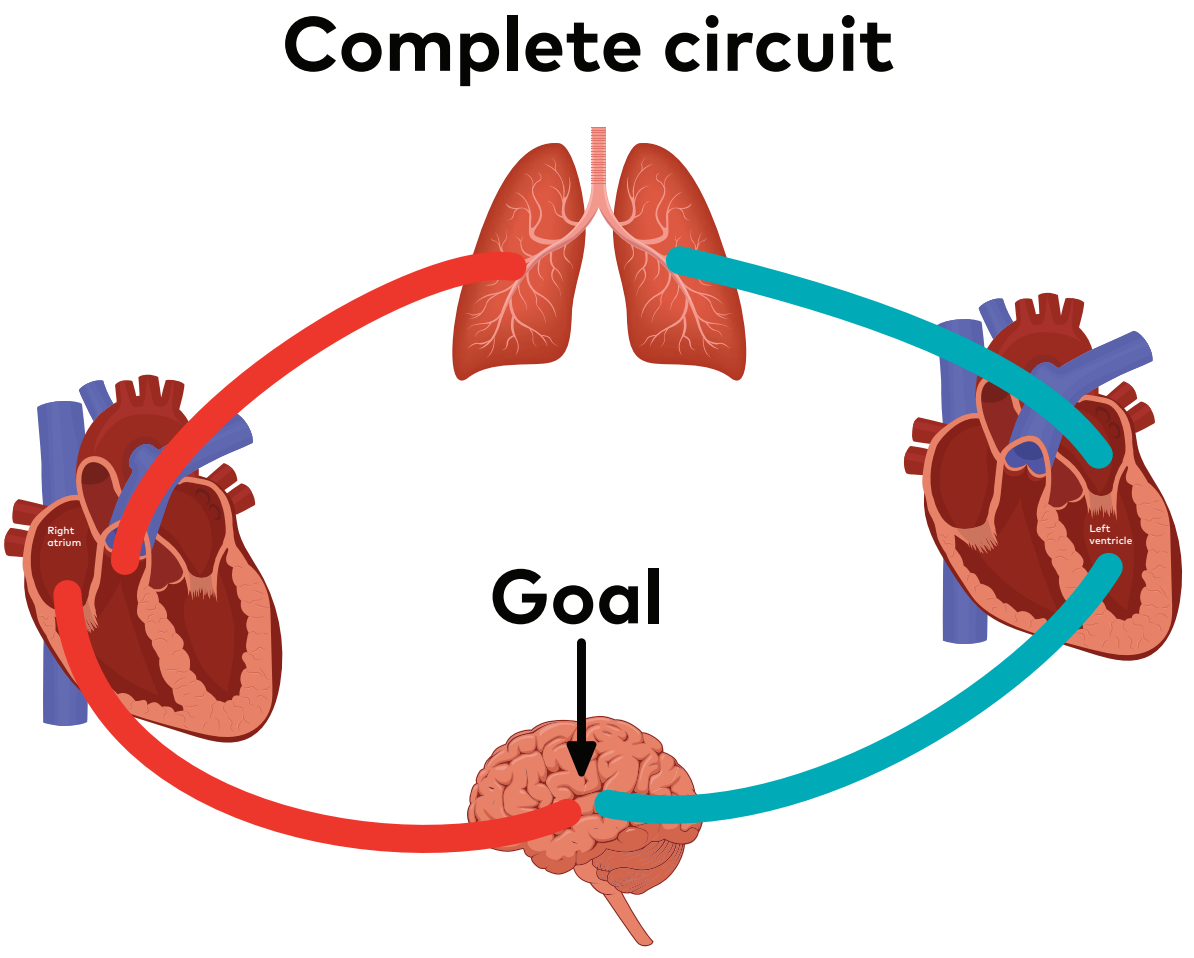
The pump

"Everything starts with the heart because that's the pump," says Dr. Williams. However, there's not that much the heart can do to help perfusion. It can speed up or slow down; it can beat harder or slower (contractility); and it can help contribute to the amount of volume that comes out of it.

"That's all the heart can control," he says. "The heart is beholden to the volume that's coming to it and the pressure it is beating against. The main aspects the heart can control are rate and contractility."

The amount of blood that leaves the heart with one beat is the stroke volume. Cardiac output is how much blood leaves the heart in 1 minute. A normal horse's cardiac output is 32 to 40 liters/minute.

"That's an insane volume going through in a minute!" Dr. Williams says. "That's a testament to how big the equine heart is." And, if 32 to 40 liters are leaving the heart every minute, that means 32 to 40 liters are being delivered to the tissues every minute, as long as the circuit is closed. And three things determine stroke volume (how much blood leaves the heart with each beat): preload, afterload and contractility.



Preload is how much volume is coming into the heart. "You may not consciously think that you're giving intravenous fluids because you want to affect preload, but that is what you're doing—increasing the volume of fluid coming to the heart," says Dr. Williams.

Afterload is the pressure against which the heart is beating. "Don't view it as a load or volume that's coming back after the beat," he says. "Think about it as the pressure against which the heart is beating. It's not truly a pressure, but decreasing afterload means that the heart can pump blood more easily. Increasing afterload means the heart is pumping against something and it's more difficult for blood to leave the heart." Less blood is going to leave the heart the more constricted large arteries after the heart are. Drugs that cause dilation can help reduce afterload.

Contractility is how hard the heart beats, which can increase or decrease. "When I exercise and feel my heart beating through my chest, that's my body trying to increase stroke volume, so it can increase cardiac output, so I deliver oxygen better," says Dr. Williams.

The tubing

"Shock is not just about the heart," says Dr. Williams, "and actually, in horses, it's rarely about the heart. We infrequently have cardiac problems in horses." So, if it's not the pump, you could have an issue with the tubing, he says.

There can be any sort of dysfunction in the arteries, which have muscular control and can constrict and dilate, and in the veins. If blood vessels aren't doing their job, blood will only be delivered as far as the heart can pump it. "So you have pressure that leaves the heart and then tubing that takes the blood where it needs to be," Dr. Williams explains.

The fluid

Fluid can be an issue too. "The vast majority of shocky animals you see are going to have hypovolemia, a loss of volume," he says. "A loss of volume equals decreased stroke volume—decreased stroke volume because of decreased preload and decreased perfusion."

Occasionally there's adequate delivery of oxygen to the cells but the cells aren't functioning correctly. Dr. Williams says that happens now and then with certain endotoxemia problems or ischemia-reperfusion injury leading to cellular dysfunction or "metabolic problems."

Now, back to the triage exam: "With your triage exam, you're really just asking, 'Where on this circuit is the problem?'" There is a hierarchy of tissues needing perfusion: the most important are the brain, heart, and lungs; next is the kidneys; then the gastrointestinal tract and enterohepatic system; and then the periphery.

"It would make no sense to have abnormalities in the cardiovascular circuit and not try to steal blood from an area that doesn't matter as much," he says. "So, cold periphery, delayed CRT, that's telling you that you might have an issue with circulation to places that matter."

The types of shock

Dr. Williams says that if you understand the circuit, it's easy to remember the types of shock: distributive, hypovolemic, obstructive, cardiogenic and metabolic/hypoxic.

Distributive shock is a tubing problem. "If the muscles in the arteries don't constrict and dilate, blood is pumping into an open, floppy bag of a vessel," he says. "The blood only goes as far as the heart can pump." This shock occurs in cases of sepsis and SIRS (systemic inflammatory response syndrome) and in severe hypotensive patients.

Hypovolemic shock is a fluid problem. There's not enough volume in the tubing. It's the most common type of shock, and it can occur with dehydration. With hemorrhagic hypovolemia, there's an open circuit, and the patient is losing blood somewhere.

Obstructive shock occurs when the circuit is obstructed. The obstruction can be intravascular or extravascular.

"You could have an obstruction within the vessels, a massive occlusion in a major vessel—like the vena cava," he says. The circuit stops because of this intravascular obstruction.

An example of an extravascular obstruction is a colon that is enlarged by gas that pushes the abdominal wall out: "If you do a rectal exam, the colon is pushed back in the pelvic inlet. It pushes against the diaphragm and the patient has difficulty breathing. With enough pressure, the vena cava may be occluded, which decreases the return to the heart. Preload will drop, and you will have obstructive shock," he explains. In dogs, this would be a gastric dilatation volvulus. Dr. Williams says that in horses you can see this with some pregnancies or with ascites.

Cardiogenic shock is a pump problem. This occurs mainly with congestive heart failure or a heart attack.

Metabolic or hypoxic shock is an oxygen problem. There are two forms of hypoxic shock—hypoxemic and cytopathic. With hypoxemic shock, desaturated blood failing to becoming saturated for some reason—whether that's because of lung disease, altitude or shunting. "Everything is circulating just fine, but the body is delivering red cells that aren't carrying much oxygen," says Dr. Williams.

With cytopathic shock, there is cellular dysfunction: "This is the worst because the triage exam is going to look relatively normal," he says. "They're not hypovolemic. The tubing is fine, the heart is working. They're delivering the oxygen to the cell, but the cell is not working. That's a horrible problem."

This happens with ischemia-reperfusion injury. "You cut off blood supply, protein gets denatured, and cell walls get broken," he says. "Then when you get blood flow back, the cell doesn't know what to do with it because the organelles are broken."

Still, in all scenarios, regardless of why you have poor perfusion, the relationship between DO2 and VO2 is the key. "In equine patients, the DO2 is almost always lower than VO2 because of poor oxygen delivery," he says. "It's not usually because of increased oxygen utilization, at least not in sick patients."

Sick animals try to decrease VO2 by not moving, Dr. Williams says: "That's why animals with colitis, enteritis or pneumonia are lethargic. They don't

have energy. They're doing everything they can to send oxygenated blood to the vital organs to stay alive. That's why the exam shows cold extremities and abnormal mucous membranes."

"What's difficult is that sometimes the cardiovascular compensation for decreased stroke volume or decreased cardiac output—the increased heart rate—is sufficient," he says. "The animal might be persistently tachycardic, not because of pain, but because that's compensation. And you might be fooled and think it doesn't look like it's in shock."

Dr. Williams believes that lactate concentration is one of the more valuable pieces of bloodwork: "As far as the quick, 'Can I take a deep breath on this case?' or 'OMG, we need to do more!' … lactate helps me more than anything outside of the physical examination."

One way to confirm that a horse is not perfusing tissues adequately is to determine whether it's hyperlactatemic. (Normal lactate concentration for a horse is less than 2 mmol/L.)

"When you're hyperlactatemic, that's the body tweeting that VO2 is higher than DO2," Dr. Williams says. "When DO2 is higher than VO2, you're in aerobic metabolism, and your cell will not create lactate—it doesn't need to. However, when VO2 is higher than DO2, when you're not perfusing adequately, you will go into anaerobic metabolism."

Lactate is a byproduct of anaerobic metabolism. Therefore, identifying hyperlactatemia signals that the anaerobic process is happening: "When you see increased lactate, the cell is demonstrating that VO2 is winning, and DO2 is losing. This could be due to decreased DO2, as in most sick patients, or it can be due to increased VO2." (Dr. Jarred Williams' advice? Carry a lactometer.)

Summary

When you do your triage exam, you're quickly ascertaining, "Do I think this horse is in shock?" The answer to this question may prompt referral or point to steps needed to stabilize the horse.

"It's your quick examination that is so telling," Dr. Williams says. "For me it's the cold periphery, the delayed CRT and the delayed jugular refill—there's not many reasons for that to happen."

Once you recognize shock, you need to identify the type of shock. You need to know why the DO2 is decreased to know how to increase it.

In the field, treatment for shock is usually going to be fluid therapy, unless you've identified that it's a heart problem and the horse should not be given fluids. Dr. Williams advises keeping catheters and hypertonic saline solution in your practice truck.

"When you identify shock and that it's not cardiogenic, you can hang a liter of hypertonic saline solution while you do the rest of your exam," he says. "That alone is going to help tremendously."

The time it takes (45 minutes) to place a catheter and get fluids infusing gives you time to explain to owners: "This is what I think is going on, and we're more stable than an hour ago."

Dr. Williams says, at that time, you should be in a much better place to either refer the horse or move forward with diagnosis and treatment of the underlying problem.

Jarred Williams, DVM, PhD, DACVS, DACVECC, is a clinical assistant professor in Large Animal Emergency Medicine at the University of Georgia College of Veterinary Medicine. His clinical interests include surgery, gastrointestinal disease, trauma and emergency and critical care. His research interests include biomechanics.

Be a better biller

Step No. 1 for equine veterinarians? Don't bill in the first place. (But if you do, I've got advice for that too.) *By Kyle Palmer, CVT*

For most equine practitioners, the further they get from providing direct care to patients, the less excited they get about their day. While that sentiment is understandable, there are a few nonmedical things that need to be a priority, and collecting payment for services rendered is at the top of that list. In a perfect world, it'd be as easy as handing the client a bill, receiving payment and zipping off to the next appointment. You and I know it's not often that easy.

Choose a good policy—and stick with it

Before we get into the ways that clients try to dodge payment and how to avoid them, let's start with the obvious. A client can't hand you a check, cash or credit card if they're not present during the appointment, and with large boarding barns, training and breeding operations, the client may be in another town, another state or another country.

When scheduling the appointment, always ask if the owner will be present, and if not, who will be on hand to represent them. Find out who will be responsible for paying for the services and get a contact number if the horse owner is absent.

If you're dealing with an absentee owner situation, make sure before you visit to render services that you've contacted them and required a credit card in advance. And don't get your payment backwards: Yes, you can let them know the amount once it's been charged, but don't agree to provide the amount and wait for approval to run the card—you might not hear back in a timely manner and you'll be on the hook waiting for payment.

It goes without saying that avoiding a "billing" policy in the first place is a terrific goal, but that may not be possible depending on your practice, so fighting each day to avoid billing on a case-by-case basis is vital. Mike Stewart, DVM at Silver Creek Equine in Silverton, Oregon, refers to it as being "coin operated," and that's a good philosophy to strive for.

Allowing clients to bill for services means that most of them will put you in the category of a "pay when we can" expense, meaning that they pay their mortgage, their auto loan, their credit card statement and probably almost everything else before they get around to paying you. Thirty days becomes 60 days, and eventually 90 days for some clients, and all of the sudden you're carrying a lot of debt on the books.

Generally, some practices have a policy of asking each client if they'll be paying with cash, check, credit or debit card when they schedule an appointment (or for a brick-and-mortar location, when they're checked in upon arrival). While some staff may find this question uncomfortable, it shows that you expect to be paid at the time of service and it doesn't run the risk of just singling out clients who've given you trouble in the past. Asking this question of everyone also gives you a bit of leverage at the end

dvm360 Find it all here.

From the horse's pen

Regular dvm360 contributor Kyle Palmer regularly writes on equine and multispecies practice. Check out more at dvm360.com/kylepalmer.

ETOTPAREN/STOCK.ADOBE.COM

of the appointment as clients can't say they weren't prepared to pay on-site. As is the case with most things, communication is crucial.

Better communication is cash in the bank

Here's the groundwork for payment with every appointment: Always provide an estimate, always answer questions about fees when scheduling the appointment, and always provide an itemized invoice at the end of appointments. Having clients who expect and understand the fees plays a role in collecting payment. Assistants are great for this. The tail end of many equine appointments is a conversation about your findings and next steps, but before that conversation starts, let the client know you're getting the charges ready (or your assistant is).

Mobile veterinarians who try to fit in too many appointments throughout the day can be guilty of feeling that it's easier to just send a bill and get on the road to the next stop than wait for the client to go get a checkbook or wallet. Skipping payment during visits may seem better, but that's just appearances. No revenue is more predictable than what you've already generated, and the longer you let a client wait to pay, the less likely it is you'll get paid.

Explaining fees and answering questions about fees also allows for clients to send a spouse, child or any other party into the house or car to grab that checkbook/wallet while they engage in the post-exam discussion, which will get you back on the road sooner.

Pick your (payment) poison

Be ready at every appointment, every time to take payment. With mobile merchant processing technology around today, there's no excuse for a practitioner not being able to swipe and take a card in the field (other than a lack of cellular service). Swipe and chip readers also prevent the hand recording, or imprinting, of a carboned credit card slip. Leaving the visit with a fully recorded credit or debit card number on file, along with an expiration date and security code, is a major liability for you as a business owner. Frankly, given the present threat of identity theft and hacking, I'm surprised clients are willing to provide you their information in that format. Moving away from merchant processing, some clients still want to pay with cash, and accordingly, you need to keep a small till available to make change.

No revenue is more predictable than what you've already generated, and the longer you let a client wait to pay, the less likely it is you'll get paid.

Offering clients the choice between cash, check or credit/debit card is important, but don't lose sight of the potential impact of each form of payment. Credit and debit card processing isn't free—you can assume you'll lose roughly 2 percent of revenue collected in that fashion via processing fees and the occasional chargeback. The risks of accepting checks are well known, and you'll have to budget some amount of expected loss due to non-sufficient funds (NSF) or closed accounts. You'll often recover most or all of these fees, but not without some time and trouble on your part. Finally, given the cost of merchant processing and the risk of accepting checks, it would seem that a perfect world would include a cash-only clientele. However, most banks have a cap on the amount of cash that can be deposited in a given month. Regardless of your policies, the cost of doing business has to include some of these items or you're in for a big surprise down the line.

Getting paid after the fact

Even if you do everything perfectly, you're likely to wind up with some accounts that are past due. Be aggressive, because they become exponentially harder to collect as time goes on.

First, create a payment policy if you don't have one, and post it where everyone can see it (your reception area, your truck, your website): "We expect payment at the time of services." Second, create an internal credit policy that establishes a schedule and strategy for responding to clients who owe you money. That second policy should remain internal, because clients who see it will think charging is acceptable.

Include details on your internal credit policy with any billing statement at the beginning of the month that's 30 days past the first statement on a specific bill. The letter should outline your "payment at the time of service" policy as well as the steps that will be taken to collect the debt, requesting that they contact you right away to resolve it.

Keep it simple and friendly—these are still your clients after all, and at this stage, it may have just been an oversight. That said, I would add a $10 late fee at that time. If the bill hasn't been paid at the next 30-day billing interval (and the client hasn't phoned you as directed to resolve the matter), send another slightly different letter requesting that full payment be made immediately. This letter should be sharper in tone and once again should outline the steps that will taken to collect the debt. This might include suspension of services, termination as a client or advancement to your next-level collections department (which may be outsourced). The second letter should come with an additional late fee of $10 attached.

If a client still hasn't paid or phoned to make arrangements by the next 30-day interval (now a 90-day delinquent debt), it's time to move to the next step, which should be a 14-day collections notice, an additional higher fee—try $50—and transfer to an aggressive stage of "in-house" collection that includes weekly calling. At this point, all services should be suspended and the client should be referred to an outside collection agency.

Collection agencies will be the first to tell you that the late fees and fee for transfer to in-house collections may not be something they can make stick. That's perfectly fine—up until that point, use the late fees and other fees as leverage to incentivize the client to call and pay. Once you advance to the collections stage, make sure whoever is communicating with the client is aware of the debt-collecting guidelines that are applicable.

Collecting money is not a fun job, which makes avoiding owed debt in the first place so vital. When it does happen though, assign it to a great staff member who understands the law and turn them loose. Diligence and regular contact is the best way to collect old debt. Diligence and good communication is the best way to avoid it in the first place.

Kyle Palmer, CVT, is a Firstline *Editorial Advisory Board member and the hospital administrator at Lake Grove Veterinary Clinic in Lake Oswego, Oregon.*

Practice hacks

Don't get payment twisted

Yes, you can call or email a horse owner off-site with the amount once you've charged it for services rendered, but don't agree to provide the amount and wait for approval to run the card—you might not hear back in a timely manner and you'll be on the hook waiting for payment.

Wait for payment ... right now

Veterinarians who try to fit in too many appointments throughout the day can be guilty of feeling that it's easier to just send a bill and get on the road to the next stop than wait for a client to get a checkbook or wallet. No revenue is more predictable than that which you've already generated, and the longer you allow a client to wait to pay, the less likely it is that you'll get paid.

Don't let pay get in the way

To facilitate payment, know the pros and cons of cash, personal check, credit card and debit card, and make sure you're letting clients pay in the way they want.

Incentivize payment

Add a $10 late fee with the next statement at least 30 days after the first statement.

New outbreak resource for equine veterinarians

American Horse Council, AAEP, USDA pledge to keep U.S. horse herd healthy in the event of another disease outbreak. *By Ed Kane, PhD*

Nearly a decade ago, the USDA approached the American Horse Council (AHC) with a question: If we have a disaster-level equine disease outbreak, what are you folks going to do about it?

The result was the creation of the National Equine Health Plan (NEHP), a document emphasizing the responsibilities of veterinarians, horse owners, regulatory officials and others in preventing and mitigating disease outbreaks. But the plan wasn't finalized until 2017, and it took the cooperation and leadership of a number of key individuals to make it a reality.

Early development

Early on in the development process, USDA equine representatives and individuals at the AHC created a draft of the plan. Its stated mission was to protect the health and welfare of horses in the United States by describing the roles and responsibilities of the equine industry, the federal government, state equine health officials, veterinarians and the U.S. diagnostic laboratory networks. "The initial effort was to lay out all the stakeholders' responsibilities so we all knew where we stood," says Cliff Williamson, director of health and regulatory affairs for the AHC.

In 2011, a group met several times to begin, but they struggled to make things work. "Unfortunately, the initial drafts never hit the mark," notes Williamson. "They were either too comprehensive or not comprehensive enough, too technical or not technical enough."

Nat White, DVM, MS, DACVS, professor emeritus of equine surgery at the Virginia-Maryland College of Veterinary Medicine, echoes these thoughts. "The initial description of the plan was not acceptable," he says. "It was not going to serve its purpose as a resource for everyone in the horse industry."

When the initial work on the NEHP stalled, the AAEP set up a task force to evaluate biosecurity and communications in the plan. As a result, Williamson was recruited to draft the plan, the Equine Disease Communication Center (EDCC) was created as a communication hub for the process, and Dr. White assumed the role of EDCC director.

"White, with his longstanding AAEP leadership, stepped up and took it upon himself to lead the initiative of putting all the segments of the NEHP together," Williamson says. He and Dr. White, along with Rory Carolyn, DVM, of the USDA, met and finally wrote the National Equine Health Plan as published in 2017. Contributing important input were individuals from the USDA, state animal health departments, the AAEP and the equine industry.

DUSKO/STOCK.ADOBE.COM

Don't hole up and suffer alone.

fetch™ dvm360 CONFERENCE

You're **brilliant** and **capable** and practice the best medicine you can ... but you can't do it all by yourself. Our industry-leading educational event connects you with other lifelong learners ready to help you navigate your career in veterinary medicine.

Together, we can do more.

We have three dates and locations each year.
Go to fetchdvm360.com to learn more.

Register today.

"The National Equine Health Plan is a resource that veterinarians can use to educate their clients and for owners to use as a resource," Dr. White adds.

Protecting the horse herd

The goal of the NEHP is to help decrease the risk of disease spread throughout the U.S. horse population. The EDCC is NEHP's communication outlet, also providing administrative oversight and leadership.

According to the EDCC, the horse industry is unique because horses are transported with great frequency and over great distances. Interstate, intrastate and international transport of horses is common—hundreds of thousands of horses are routinely transported to shows and other competitions, to racetracks, to other farms for breeding and training, and to veterinary clinics for treatment.

This extensive movement of horses makes it essential that veterinarians and owners know how to prevent and mitigate disease outbreaks, whether they occur at the home stable or in new and stressful environments. It's critical that veterinarians know what resources are available to help during disease outbreaks—which is where the NEHP comes in. According to Dr. White, the plan was purposefully kept as concise as possible, especially the roles and responsibilities of the various stakeholders, so the information would be easily accessible and relevant in a crisis.

How it all fits together

Here's how the NEHP system works: The AHC serves as the umbrella organization responsible for the leadership, fundraising and governmental relations for the EDCC, the communication arm of the NEHP. The AAEP Foundation serves as EDCC's "bank," so tax-deductible donations can be used directly to support the EDCC. The AAEP also provides office staff space and HR resources for the EDCC. The United States Equestrian Federation supports IT and is the home for the EDCC website.

The purpose of the EDCC is to get disease information out as soon as possible to the veterinary community and to horse owners to curtail health outbreaks and limit disease spread. Once the disease is under control, veterinarians, horse owners and other industry stakeholders can proceed with business as usual without fear of further disease spread or morbidity. This helps protect the horse economy.

For equine practitioners, a full exploration of the entire NEHP and the breadth of the roles of responsibilities for veterinarians—along with those of other major equine stakeholders—are available from the EDCC at equinediseasecc.org/national-equine-health-plan.

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

Key NEHP goals

> Protect the health and welfare of horses in the U.S. and North America.
> Facilitate continued interstate and intrastate movement as well as international movement of horses safely without jeopardy of disease.
> Educate members of the equine industry on how to prevent and control disease during equine events and in the case of natural disaster.
> Ensure the availability of diagnostic testing and inspection information, which provides a way to rapidly disperse accurate information about disease outbreaks.
> Provide guidelines for control, identification and containment of equine diseases.
> Educate owners and the equine industry on disease identification and prevention.

DVM responsibilities

Here are the specific roles and responsibilities for veterinarians in several categories:

Disease prevention

> Maintain knowledge of all aspects of equine disease prevention, monitoring, containment, mitigation, biosecurity and business continuity.
> Help educate horse owners and the industry about diseases and biosecurity.
> Promote disease prevention to horse owners.
> Assist horse owners and event organizers in developing disease prevention and disease control plans.
> Utilize cleaning and disinfection strategies between client horse visits.
> Maintain proper horse disease records in an electronically searchable format.
> Recommend isolation and diagnostic testing of all sick individual equines.
> Encourage appropriate vaccinations for the prevention of equine diseases.

Disease surveillance and monitoring

> Monitor equine disease prevalence and risk factors within the geographic area.
> Perform diagnostics to assess clinical situation.
> Monitor effectiveness of preventive and therapeutic measures.
> Identify and report suspected cases of reportable diseases to authorities.
> Understand the critical role private practitioners play in the National Comprehensive Equine Disease Surveillance System, which reports to veterinary diagnostic labs, academic institutions and other equine clinics.
> Deal with outbreak response, containment and mitigation
> Report suspected reportable diseases to the appropriate animal health official.
> Work with state animal health officials to monitor equine disease outbreaks.
> Direct stakeholders to sources of information and education, including the EDCC.
> At the request of state and federal officials, provide assistance during an equine disease response.
> Maintain a situational awareness of equine disease incidents and provide timely and accurate disease information updates to clients and to the EDCC.

Biosecurity

> Promote biosecurity to prevent infectious diseases.
> Recommend and initiate biosecurity during outbreaks.
> Conduct biosecurity risk assessments and develop a plan for facilities prior to an outbreak and a plan for horse gatherings.
> Educate horse owners and the equine industry about infectious diseases, prevention and biosecurity.

Diagnostics

> Work with diagnostic laboratories to ensure proper testing and sampling procedures.
> Collect and send samples from diseased animals.
> Report outcomes regarding cause of clinical presentations and determine if additional diagnostic testing is necessary to definitively diagnose a disease.

Epidemiology

> Provide pertinent equine disease data to epidemiologists.
> Assist in gathering such data during a disease outbreak.

Business continuity

> Maintain a working partnership with regulatory officials and stakeholders in the equine industry to develop disease response plans, paying particular attention to business continuity.

Drugs and vaccines

> Ensure the appropriate uses of antimicrobials, drugs and medicines to treat appropriate equine illnesses and injuries.

Funding needs

> Identify equine industry research needs and support funding of the EDCC.

VMX highlights: Vet product and company updates

The Orlando, Florida, conference formerly known as NAVC kicks off the new year for many in the animal health world. *By Kristi Reimer Fender*

While there didn't seem to be as many new products and services launched at VMX 2019 as in previous years, the companies serving the veterinary market were still on hand to discuss their initiatives and efforts in the year ahead. Here are some highlights the dvm360 team picked up during the conference.

Adequan Canine

While not a new product, Adequan Canine (polysulfated glycosaminoglycan) has come back under the umbrella of its manufacturer, American Regent (formerly Luitpold), after a number of years when it was marketed and sold by other companies—first Novartis, then Elanco. Adequan is an FDA-approved injectable, disease-modifying osteoarthritis (OA) drug that inhibits the enzymes that break down cartilage in joints. American Regent plans to shine a spotlight on canine OA this year, especially multimodal management strategies.

Blue Buffalo

Blue Buffalo has soft-launched a new therapeutic diet: Blue Natural Veterinary Diet GI Low Fat. The diet features readily digestible proteins, carbohydrates and fats, and its low fat level makes it well-suited for dogs with digestive difficulties, according to Blue Buffalo. It's also an option for acute diarrhea scenarios, when dogs need a mild food as they restabilize. Prebiotic fibers help balance and support gut health, company reps say.

In other Blue Buffalo news, the company has built a new manufacturing and R&D plant in Richmond, Indiana. With this facility joining the plant in Joplin, Missouri, Blue Buffalo will now be producing the majority of its food in house, representatives say.

Bridge Club

In honor of the one-year anniversary of the Bridge Club, a video-based community where veterinary professionals periodically gather to discuss industry hot topics, the founders have brought the annual membership rate down from $95 to $20.19 (for 2019—get it?). While participation in video conversations is free, membership allows users to access archived content. Topics on the docket for 2019 include Cushing's disease, the Veterinary Nurse Initiative, the associate veterinarian shortage, and more.

Zoetis

While all's mostly quiet on the diagnostics front as the Abaxis portfolio gets integrated, Zoetis in the meantime is emphasizing how its derm lineup can be used along the diagnostic path. Here's how it works, they say: First you have to stop the itch—use Apoquel. Next look at parasites—that's where Simparica comes in. Next address any infection—use Convenia. If the pet is still itchy, do a food trial for four to eight weeks. And finally, if there are still issues and you diagnose the patient with atopic dermatitis, that's a job for Cytopoint. Zoetis is also focusing on felines this year with the launch of Revolution Plus (a topical combo of selamectin and sarolaner) and continuing its support of Pups4Patriots (veterans with PTSD) and K9 Courage (veterinary care for retired military and police dogs).

IDEXX

If you're like us, you started to hear about Ivan Zak, DVM, creator of the Smart Flow patient management system, more and more often during the last few years. Well, IDEXX was hearing the same things, and the company scooped up Dr. Zak and made him general manager of its practice software division. Basically, Dr. Zak is hoping to fix every inefficiency a veterinary hospital can dream up. In his work as a consultant and working directly in practices, Dr. Zak noticed the same patterns of frustration across hospitals worldwide, and he's trying to address them through Smart Flow, through his work with IDEXX and in getting useful apps and gadgets to integrate with what he's built. "The future of technology is connectivity, not products," he told the dvm360

MAKSIM_E/STOCK.ADOBE.COM

team. We predict this won't be the last portent we'll hear from Dr. Zak.

Trupanion

The Trupanion folks talked to us about their Trupanion Express Partner Program, where any veterinary practice that downloads the software gets a dedicated account manager to trouble-shoot and answer questions. What is Trupanion Express, you ask? A software application that integrates with veterinary practice management software to enable direct-pay, meaning the pet owner is not out of pocket on the portion of the transaction covered by pet insurance, and the veterinarian gets paid almost immediately (usually within five minutes if everything gets entered right). Trupanion is also a major supporter of MightyVet, an industry initiative supporting well-being of the profession, with plans for webinars and symposia to happen throughout 2019.

Covetrus

Remember when Henry Schein Animal Health and Vets First Choice said they were going to merge and be called Vets First Corp.? Scratch that. Just before VMX, the two companies announced that the new standalone public company would, in fact, be called Covetrus. The new business will bring products, services and technology solutions together into a single platform, the company says—pharmaceuticals, tools to manage finances and client communications, and support to identify and fill gaps in care. Expect to hear more from Covetrus soon!

VMX: Laundry, loyalty and more

You have problems. And exhibit halls have solutions. Let's look at tackling dirty towels, jaded clients and the future of imaging.

Veterinary conference exhibit halls make strange bedfellows sometimes (hand lotions and therapy lasers?), so why not do the same thing right here with three new (or new to us) products and services we saw on the VMX show floor in January?

The laundry quandary

If you buy a consumer-grade washer and dryer from Home Depot or Lowe's, your fraying towels and heavily soiled fabrics and round-the-clock loads will kill those machines. The good news? They're relatively cheap. Place and replace and replace …

The rep with Continental at VMX said she understands the pain, and Continental has choices (no, that machine at right is not a Continental model).

Choice 1? A commercial-grade LG washer unit that will get the job done, lasting three years or so in the $3,000 range—good. Choice 2? A $6,000 commercial-grade washer unit with a five-year warranty and expected to last 15 to 20 years, even with brutal veterinary practice conditions—better. She also pitched that this monster is "soft-mounted," so you don't need a special block of concrete to hold it during its fairly wicked cleaning vibrations. There's no such thing as a guarantee in life, but it's heartening to us at dvm360 that maybe there is a better way to run the laundry in back of house.

Looking at loyalty

One of the newest additions to the Henry Schein Animal Health booth (see part of the new company Covetrus, see above) is the smartphone "customer engagement platform" for pet owners, Petlocity.

The app effectively gamifies pet care with a loyalty program that lets pet owner rack up points and get a virtual pat on the back for doing right by their pet while you market medically necessary services your practice is looking to promote. (Double points to clients for dentals this month? You got it!) The app's message center manages appointments, reminders, refill requests and other notifications and rewards.

The Petlocity rep's official line is that veterinary clients using Petlocity spent twice as much, visited twice as often and returned to redeem those rewards within 60 days.

Is the veterinary CT market heating up?

We're gonna plead our ignorance right now: Most of you have digital radiography, and those who don't will get it soon. (I mean, film, really?) But, to be honest, we don't know how hot the market is in veterinary practices for a CT scanner. We're looking to find out, but we can say that every major exhibit hall from VMX to Fetch dvm360 has at least one (and often several) equipment manufacturers and licensees selling this next wave of veterinary medical technology.

Consider that a CT scanner can run about $250,000, and you have to wonder how many of these machines each community needs and how often you'd do CT scans if you got one.

MAKSIM_E/STOCK.ADOBE.COM

All that said, a CT unit from MyVet Imaging is on the way, promising human-grade images using human hospital's "slice," which we're told is better than the "cone" (like radiography), creating a less "contrast-y image."

This unit will be fully commercially available by Q3 2019, and the rep says it'll be priced under other manufacturers' devices. His hope? General practices who shied away from the high price tag and the sense that only specialty hospitals needed a machine like this will consider it.

Does this signal CT's closer entry into general practice, in hospitals of 15 to 20 instead of hospitals of 50 to 60? Time will tell. Who's going first?

products

Zoetis

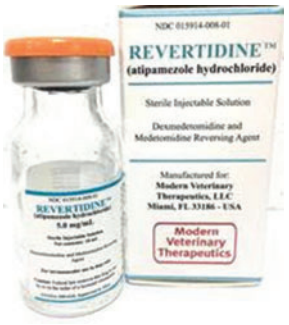
Topical flea and tick prevention for cats

Revolution Plus (selamectin and sarolaner topical solution) is a new combination topical product providing six-in-one parasite protection against fleas, ticks, ear mites, roundworms, hookworms and heartworms for cats and kittens as young as 8 weeks of age and weighing 2.8 pounds or greater. Administered monthly, it combines the broad-spectrum action of selamectin with the flea- and tick-killing power of sarolaner. It kills fleas before they can lay eggs and kills ticks for a full month.
For fastest response visit revolutionplusDVM.com

Ceva Animal Health

Flavored heartworm tablets

MilbeGuard (milbemycin oxime) Flavored Tablets are an FDA-approved generic form of milbemycin oxime. MilbeGuard is a monthly beef-flavored tablet that prevents heartworm disease and treats and controls whipworms (in dogs only), hookworms and roundworms. The active ingredient, milbemycin oxime, has been trusted by veterinarians to control heartworm for years.
For fastest response visit milbeguard.com



Modern Veterinary Therapeutics

Sedation reversal

Revertidine is an FDA-approved generic atipamezole hydrochloride injection (0.5 mg/ml) for the reversal of either dexmedetomidine or medetomidine in dogs.
For fastest response call (407) 852-8039

Treatibles/AD Remedies

Hemp oil for horses

Treatibles Full Spectrum Hemp Oil for horses combines organic full spectrum hemp oil with peppermint oil and MCT coconut oil. The naturally occurring compounds in hemp oil work to support the body's natural inflammatory response as well as ease discomfort and anxiety. The oil is virtually free of THC, nonpsychoactive and nontoxic. MCT coconut oil has been shown to improve oxygen flow to muscles, strengthen the immune system and improve the digestibility of other feeds; topically it can protect wounds and reduce the risk of infection. Peppermint oil helps to relieve intestinal gas, has a soothing effect on the smooth muscles of the stomach and intestines and increases bile secretion, making it ideal for horses prone to colic, ulcers, smooth muscle spasm, trapped gas, cramps or poor appetite. Topically, peppermint oil helps to relieve discomfort and itching from skin conditions and can act as an insect repellent.
For fastest response visit treatibles.com

Bayer Animal Health

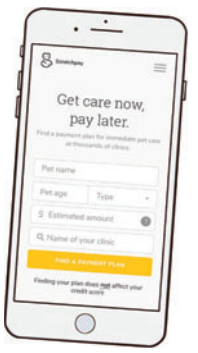
Topical heartworm control for dogs

Bayer Animal Health has launched Coraxis (moxidectin) Topical Solution for Dogs, a prescription-only, monthly transdermal product that prevents heartworm disease and treats and controls hookworms, roundworms and whipworms in dogs. Administered monthly, Coraxis is a prescription product that should be administered on the order of a veterinarian, providing veterinarians more flexibility in creating parasite protection plans for dogs. Coraxis is available in five sizes and is for use in dogs and puppies 7 weeks of age and older weighing between 3 to 110 pounds.
For fastest response visit bayer.us

VIN Foundation

Student loan estimator

The VIN Foundation has added the In-School Loan Estimator to its Student Debt Center, a tool designed to help students before and after borrowing for a veterinary education. The estimator allows pre-vet students to project their anticipated borrowing. Students who have already begun borrowing can import their federal student loan balances and estimate costs, enabling them to be more informed borrowers while in school. These estimates and what-if scenarios can then be automatically fed to a repayment simulator to help students explore loan repayment options after graduation.
For fastest response visit vin.com/studentdebtcenter



Scratchpay

Full availability of client payment tool

Scratchpay has announced that its services are now available in all 50 states. Scratchpay provides simple, affordable, payment plans to help veterinary clients manage their expenses. Pet owners can visit scratchpay.com from their smartphone or a computer, fill out a 90-second application, and get instantly approved for a payment plan without affecting their credit score. There are no setup fees, subscription fees or hardware requirements for the veterinarian, and Scratch pays the clinic in full up front via direct deposit.
For fastest response visit scratchpay.com

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

MEDICAL EQUIPMENT

MOBILE VETERINARY

MOBILE VETERINARY

SURGICAL SUPPLIES

MEDICAL EQUIPMENT

engler engineering corporation VETERINARY DENTAL, ANESTHESIA & OXYGEN EQUIPMENT

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

Wall Mount included Optional Stand Available

Mini Scale-Aire High Speed Dental Air Unit
Easily connects to a regulated nitrogen tank or external compressor

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

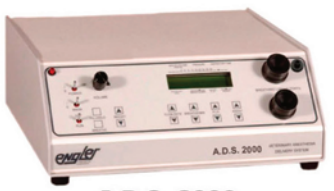
Very affordable High Speed at only **$1695**

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

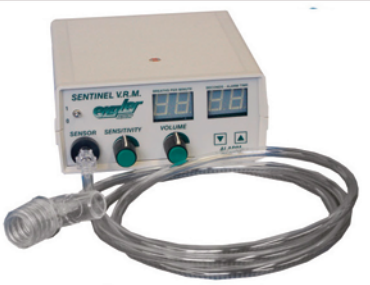
Our Most Popular High Speed for only **$4275**

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**



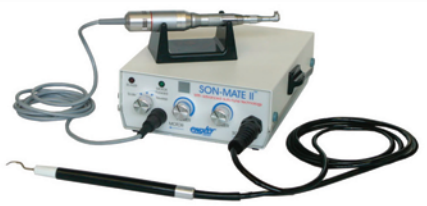
Sentinel VRM
Veterinary Respiratory Monitor

Electro-Son Electrosurge Unit
Mono & Bipolar LCD Touch Screen

NEW **$855** 5 LPM

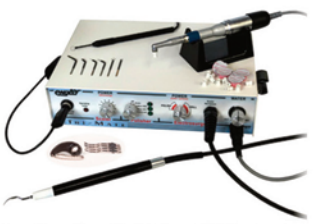
EverFlo 5 LPM
Oxygen Concentrator

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!!!***)

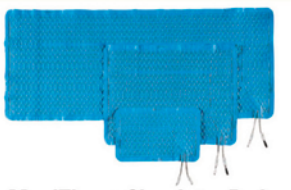
Dynax Stretcher & Gurney
The Dynax Gurney is a tubular frame construction with unique connectors creating a means of supporting the Dynax stretcher and the larger canine patient, up to 200 pounds.

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

Digital Water Circulator Warming Pump

NEW **$595**

The Engler Circulator Pump effectively warms the patient to assist in preventing Hypothermia during surgery, recovery and intensive care using heavy duty Maxitherm pads. (sold separately) MAXITHERM Pads are adaptable to the Gaymar T-Pump.



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

Dental

Employment

Pet ID Products

Medical Services

Mobile Veterinary

For a full listing of events in 2019, visit dvm360.com/calendar

May 2-5
Fetch dvm360
in Baltimore
(800) 255-6864, ext. 6
fetchdvm360.com/baltimore

August 23-26
Fetch dvm360
in Kansas City
(800) 255-6864, ext. 6
fetchdvm360.com/kc

December 12-15
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

March 15-17
28th Annual Food Animal Conference
Columbiana, AL
(334) 603-6227
alvma.com

March 19
Updates in Soft Tissue Surgery and Behavior
Whistler, British Columbia, Canada
(888) 488-3882
vetvacationce.com

March 27
How to Improve Business Outcomes Through Workplace Well-being: Regional 2019 Workshop
New Orleans, LA
vhma.org

March 29-31
The American Laser Study Club 2nd Annual Symposium
Phoenix, AZ
(866) 589-2722
americanlaserstudy-club.org

April 4-6
Insight through Interaction: 2019 VHMA Management Exchange
Indianapolis, IN
vhma.org

April 4-6
AAHA Midmark Academy of Dentistry
Hoffman Estates, IL
(720) 963-4481
aaha.petdentaltrain-ing.com

April 5-7
2019 American Academy of Veterinary Acupuncture
Portland, OR
(931) 438-0238
aava.org

April 11-13
Updates in Soft Tissue Surgery and Internal Medicine
Austin, TX
(888) 488-3882
vetvacationce.com

April 25-28
Uncharted Veterinary Conference
Greensville, SC
unchartedvet.com

April 26-27
Internal Medicine Challenges for Advanced Practitioners (Equine)
Dover, NH
vetpd.com

April 28-May 2
ICARE 2019 Int'l Conference on Avian, Herpetological and Exotic Mammal Medicine
London, UK
+44 0 207 808 5650
icare2019.eu

May 2-5
Fetch dvm360 in Baltimore
Baltimore, MD
(800) 255-6864, ext. 6
fetchdvm360.com

May 14-16
Updates in Ophthalmol-ogy and Cardiology
Savannah, GA
(888) 488-3882
vetvacationce.com

May 29-30
Dairy Cattle Welfare Symposium
Kissimmee, FL
(614) 292-9145
dcwcouncil.org

June 6-8
2019 ACVIM Forum
Phoenix, AZ
(303) 231-9933
acvim.org

June 17-19
Updates in Neurology & Emergency Critical Care
Whitefish, MT
(888) 488-3882
vetvacationce.com

July 10-12
Updates in Dermatology, Anesthesia and Emergency Critical Care
Aspen, CO
(888) 488-3882
vetvacationce.com

July 16-19
44th World Small Animal Veterinary Association Congress and 71st Canadian Veterinary Medicine Association Convention
Toronto, ON
canadianveterinar-ians.org

August 2-5
Southern Veterinary Conference
Birmingham, AL
(205) 655-2320
thesvconline.com

August 2-6
AVMA Convention
Washington, DC
avma.org/events

August 15-18
13th Keystone Veterinary Conference
Hershey, PA
(888) 550-7862
pavma.org

August 21-23
HospitalDesign360 Conference
Kansas City, MO
(800) 255-6864, ext. 6
fetchdvm360.com/hd

August 21-24
Uncharted Veterinary Conference: Staff Drama
Kansas City, MO
unchartedvet.com

August 23-26
Fetch dvm360 in Kansas City
Kansas City, MO
(800) 255-6864, ext. 6
fetchdvm360.com

September 25-26
119th Penn Annual Conference
Philadelphia, PA
(215) 746-2421
vet.upenn.edu/edu-cation/continuing-education

September 26-29
Southwest Veterinary Symposium 2019
San Antonio, TX
(972) 664-9800
swvs.org

September 28-30
Pacific Northwest Veterinary Conference
Tacoma, WA
(800) 399-7862

October 14-17
The Atlantic Coast Veterinary Conference
Atlantic City, NJ
(609) 325-4915
acvc.org

dvm360™ (Print ISSN: 2326-0688, Digital ISSN: 2326-070X) is published monthly by MultiMedia Healthcare LLC, 325 W 1st St STE 300 Duluth MN 55802. 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.

A different kind of **roadblock**

A raging bull made for an exciting morning for me and my resourceful clients.

Our veterinary clinic is on the south side of Lamesa on the business route of Interstate 87—I mean right on that road. Nothing separates an unbound animal from cars going 50 miles per hour but about 20 yards of parking lot. This has always made me crazy with worry. I've learned to check gate latches over and over, make sure halters are buckled correctly, make sure doors are closed. But still, some of them just get away.

We were testing bulls in the food animal clinic one morning. The bulls don't like this too much, and a particular one-ton Brangus was downright angry. I was working on a lameness case in the horse clinic for a couple of twentysomething cowboys from down south when the noise hit me.

It wasn't so much what people were saying; it was the tone of their shouts that sent chills down my spine—terror and dread rolled into one. My location in the barn did not offer me a view of what the commotion was about, but I had a good idea what was going on.

As I sprinted out the front door, I saw the beginning of the calamity. Someone had forgotten to close the gate at the end of the squeeze chute when the giant Brangus bull was released from his aggravating semen collection. He was totally angry … and free. All I could think was, "What kind of damage is gonna occur when this beast goes running against traffic on a highway loaded with fast-moving cars?"

You never know when a bull might be running through the streets of Lamesa.

The heroes of this story should be stated before the action begins. The two young cowboys had grown up with bad-humored bulls, and they took off running to their truck. One jumped in the driver's seat, the other on the flatbed spinning a loop into his rope. I felt immediate relief having them as backup.

I started barking orders to anyone who could hear me. I was even telling clients to saddle their horses and told a tech to go saddle mine. We weren't sure yet how much bluff and how much actual fight this critter was going to display, but we were about to find out.

The first person the bull encountered was a client standing next to his pickup. When the man saw him, he started waving his arms trying to scare the bull back to the pens. I cringed as it became apparent that this man was about to experience a whipping. The man, realizing there was nowhere to go, opened his truck door and tried to jump inside.

Too slow. The bull hooked him under the butt and knocked him off his feet. He then began pushing the man around with the top of his head until he had the fella stuffed under his pickup.

The bull then went to work on the pickup door, caving in the panel and shaking the vehicle like it was a toy. Another client put his own between the bull and the highway to prevent disaster. The bull was not a bit distracted. He caved in the door of the second truck and ripped off a rearview mirror.

Finally, the bull made it to the highway. Cars were driving south as it headed north. Drivers started slamming on brakes and swerving to avoid him. I could see the expressions on their faces: terror, anger, astonishment and relief.

I had almost run out of hope when I noticed the cavalry coming. The two twentysomethings were smart enough to leave the lot, go a few blocks north and then circle back south to head off the bull. They were positioned at just the right angle for the rope swinger on the flatbed to take action. He had that rascal roped so quick, I couldn't believe it. He secured the rope to something on the truck bed, and it held fast. The bull came to a stop as all the slack was taken.

What the cowboys had not anticipated was the bull running around the truck. Of course, as he did, he caved in yet another door. They managed to pull him back to the clinic and we got him secured in a pen. We all high-fived the young cowboys and exclaimed over what heroes they were.

I never came up with a total of what that 30 minutes cost the clinic. There were several insurance companies involved and hours spent trying to make things right. The bull owner was kind and humiliated that his animal had acted so poorly. The clients were all still alive and understanding—even the fella we had to pull out from under his truck.

I told the city I'd put up a fence to keep this from happening again. They said it was too close to the road and I couldn't. This means, if you ever drive by my clinic, you'd better slow down. You never know when a bull might be running through the streets of Lamesa.

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, SERGIO/STOCK.ADOBE.COM

RECOMMEND DASUQUIN® WITH CONFIDENCE.

» ASU works with glucosamine & chondroitin sulfate to better protect cartilage than either of those ingredients alone.

» Dasuquin® Advanced is not found online and is only available from veterinarians.

Become a member of our loyalty program at: loyalty.nutramaxlabs.com/DVM360 or to order please call Customer Service at 1-888-886-6442.

nutramax LABORATORIES
VETERINARY SCIENCES, INC.

* Among veterinary brands in the US. Survey conducted among small animal veterinarians in the United States who recommended oral joint health supplements.

Available from all fine veterinarian product distributors.

Diagnostics give your patients a voice.

IDEXX-exclusive innovation expands their vocabulary.

Order today at IDEXX Reference Laboratories • idexx.com/fecaldx

IDEXX