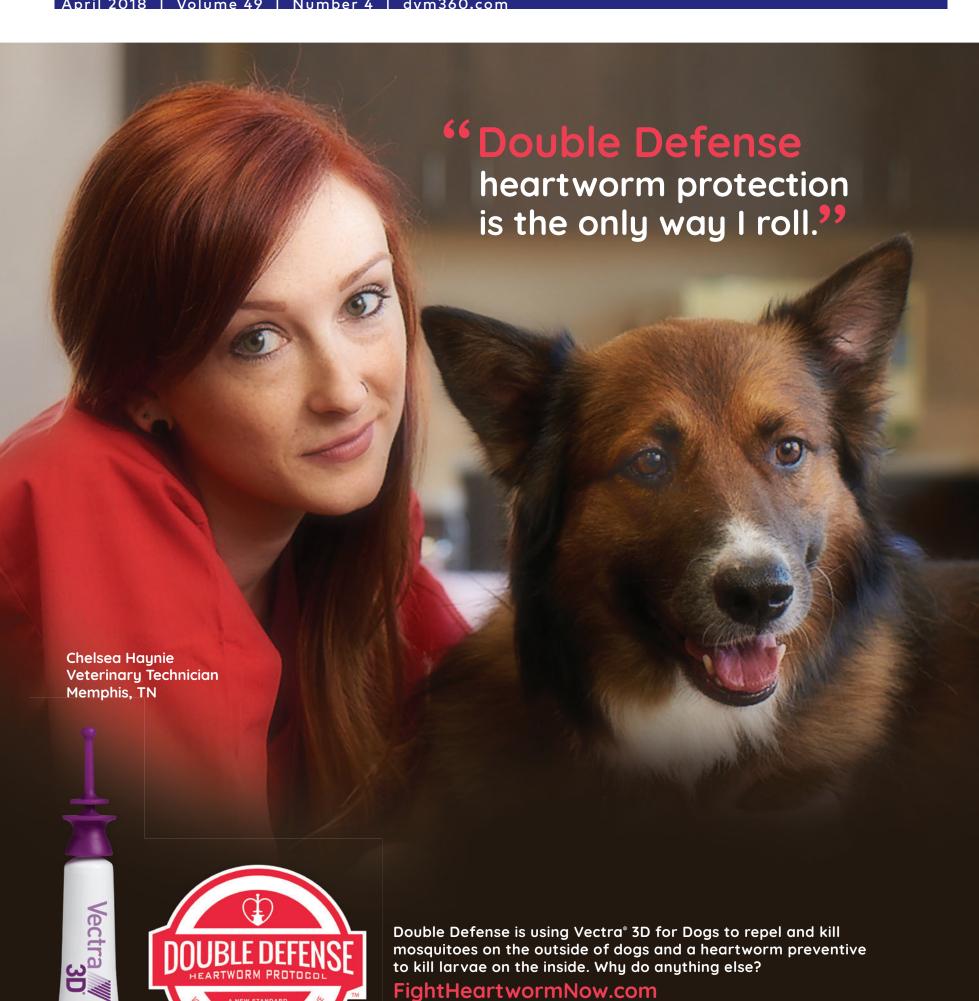


A helping paw: comfort within catastrophe

K-9 Comfort Dog Ministry helps bring light back into victims' dark world.

page 8





Double Defense Uses:

- √ Vectra® 3D for Dogs which has a 99.1% anti-feeding efficacy against mosquitoes¹
- A heartworm preventive to kill heartworm larvae



Dogs protected with Double Defense protocol had no adult heartworms¹²

Groups	Number of Dogs with Heartworms	Average Number of Adult Heartworms Per Dog
Control	唇唇唇唇唇唇	41
Vectra® 3D Only	THE PART OF THE PA	1.5
Milbemycin Only	医底底底底底底底	17.1
DOUBLE DEFENSE Vectra® 3D and Milbemycin	0 Dogs	0



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1. McCall, J.W., Hodgkins, E., Varloud, M., Mansour, A., DiCosty, U., McCall, S., Carmichael, J., Carson, B., & Carter, J. (2016, August). Blocking of the transmission of Dirofilaria immitis 1.3 (JYD-34 ML resistant strain) from infected mosquitoes to dogs and prevention of infection in dogs treated topically with dinotefuran-permethrin-pyriproxyfen and orally with millbemycin oxime alone or in combination. In 61st Annual Meeting, San Antonio, TX. Abstract No. 21, 61.



A helping paw: comfort within catastrophe

K-9 Comfort Dog Ministry helps bring light back into victims' dark world. page 8



April 2018 | Volume 49 | Number 4 | dym360.com

MightyVet initiative targets vets' well-being

A new platform announced during WVC focuses on education and support for veterinarians' careers and well-being. By Portia Stewart

ueenie, a 6-month-old cattle dog, was probably going to die. And not because treatment for rodenticide poisoning had failed. No, Queenie's owner wasn't going to opt to spend the money for treatment at all. And that was a moment in practice that hit hard for Barry Kipperman, DVM, DACVIM. Describing a solitary and isolating moment when the client refused to pay for treatment to Western Veterinary Conference (WVC) attendees, Dr. Kipperman said, "I walked out of the room, and I went to my office. And I turned off the lights, and I took off my glasses and I buried my face in the palms of my hands."



Dr. Kipperman, a practice owner and ethics lecturer at the University of California, Davis, School of Veterinary Medicine, was one of four presenters at a March 5 WVC event brought to the veterinary community by partners that included Trupanion and Not One More Vet,

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Transparency is key for the 2018 General Practice Hospital of the Year Northpointe Veterinary Hospital's all-glass approach makes the team's workflow crystal clear. By Ashley Griffin



Vets Against Insanity: Back and better than ever page 3



There shouldn't be board sanction without representation

page 36



The main entrance of Northpointe Veterinary Hospital in Yuba City, California.

Feeding that empty feeling ... and zombies page 44



Chihuahua is Auburn's smallest PDA patient page 52

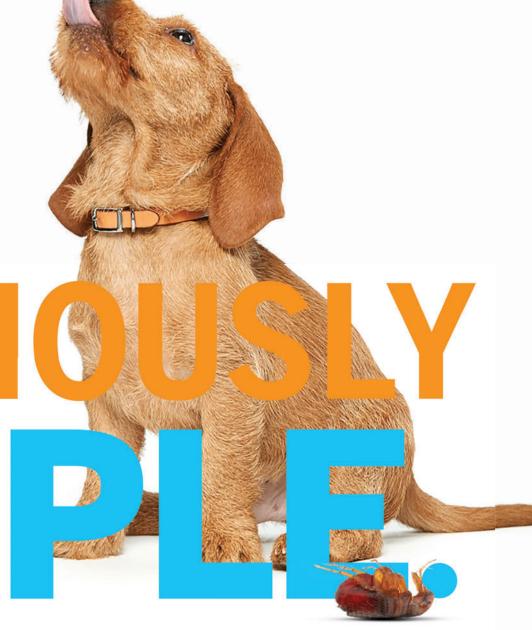






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Please see brief summary on page 03

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



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

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DIRECTOR'S CUT | Kristi Reimer Fender



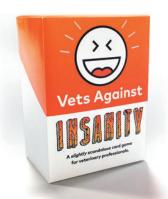
Pets and travel: So many dilemmas

To leave behind? To take along? The best solution is rarely clear.

his afternoon my husband, son and I will be loading up our suitcases, along with the kitten, and heading to my parents' house for a weekend with family. We've never traveled with Lucy before, so we're not sure how this is going to go. But I hate leaving her behind, even with our nephew housesitting, based on past experiences in which she seemed neurotically forlorn even after we returned. (Alvin the dog, on the other hand, seems perfectly happy to buddy up with the nephew—my suspicion is that extra treats are involved.)

Travel when you're a pet owner presents numerous difficulties. Boarding is expensive and not suited to every pet. Finding a pet sitter you trust is a challenge and also potentially expensive. Having someone stop by a time or two to dump food in the bowl is just not fair to the poor pet.

Which is why I suspect many folks, like us, simply take the pet along—it's a family member, after all. But this isn't an easy road either. If you go far, there are risks of acquiring diseases (see



Good news!

Vets Against Insanity, the slightly irreverent card game inspired by speakers and sessions at Fetch dvm360, is back and better than ever with a redesigned look, more variation in the cards, and a new logo. Even better news ... we'll soon be releasing an extended deck! You'll be able to purchase additional playing cards and add them to your existing deck, extending the fun for hours. In the meantime, visit

dvm360.com/VAI to learn more

dvm o CONFERENCE

pages 14 and M7). Pets with breathing problems can die on airplanes, as was tragically the case on a recent United flight. And car rides can be hours of pure terror for some animals (not to mention the puking). As we embark

on travel season, it's a good time for pet owners (including this one) to think through exactly what the best thing is for their four-footed friends and for veterinarians to stand ready with wisdom and guidance.

NexGard (afoxolaner) Chewables

Indications:

NexGard kills adult fleas and is indicated for the treatment and prevention of flea infestations (Ctenocephalides felis), and the treatment and control of Black-legged tick (Ixodes scapularis), American Dog tick (Dermacentor variabilis), Lone Star tick (Ambiyomma americanum), and Brown dog tick (Rhipicephalus sanguineus) infestations in dogs and puppies 8 weeks of age and older, weighing 4 pounds of body weight or greater, for one month.

Dosage and Administration:
NexGard is given orally once a month, at the minimum dosage of 1.14 mg/lb (2.5 mg/kg).
Dosing Schedule:

Body Weight	Afoxolaner Per Chewable (mg)	Chewables Administered
4.0 to 10.0 lbs.	11.3	One
10.1 to 24.0 lbs.	28.3	One
24.1 to 60.0 lbs.	68	One
60.1 to 121.0 lbs.	136	One
Over 121.0 lbs.	Administer the appropriate combination of chewables	

To minimize the likelihood of flea reinfestation, it is important to treat all animals within a household with an approved flea control product.

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

Warnings: Not for use in humans. Keep this and all drugs out of the reach of children. In case of accidental ingestion, contact a physician immediately.

Precautions:
The safe use of NexGard in breeding, pregnant or lactating dogs has not been evaluated. Use with caution in dogs with a history of seizures (see Adverse Reactions).

Adverse Reactions:
In a well-controlled US field study, which included a total of 333 households and 615 treated dogs (415 administered afoxolaner; 200 administered active control), no serious adverse reactions were observed with NexSard. Over the 90-day study period, all observations of potential adverse reactions were recorded. The most frequent reactions reported at an incidence of > 1% within any of the three months of observations are presented in the following table. The most frequently reported adverse reaction was vomiting. The occurrence of vomiting was generally self-limiting and of short duration and tended to decrease with subsequent allows in both groups. Five treated dogs experienced anorexia during the study, and two of those dogs experienced anorexia with the first dose but not subsequent doses.

ictions.		Treatme	ent Group	
	Afoxolaner		Oral active control	
	N¹	% (n=415)	N ²	% (n=200)
Vomiting (with and without blood)	17	4.1	25	12.5
Dry/Flaky Skin	13	3.1	2	1.0
Diarrhea (with and without blood)	13	3.1	7	3.5
Lethargy	7	1.7	4	2.0
Anorexia	5	1.2	9	4.5

Number of dogs in the afoxolaner treatment group with the identified abnormality.

*Number of dogs in the control group with the identified abnormality.

*Number of dogs in the control group with the identified abnormality.

In the US field study, one dog with a history of seizures experienced a seizure on the same day after receiving the first dose and on the same day after receiving the second dose of NexGard. This dog experienced a third seizure on eveek after receiving the third dose. The dog remained enrolled and completed the study. A third dog with a history of seizures had a sexperience of NexGard. The dog remained enrolled and completed the study. A third dog with a history of seizures received NexGard and experienced no seizures throughout the study.

*To report suspected adverse events, for technical assistance or to obtain a copy of the MSDS, contact Merial at 1-888-637-4251 or http://www.merial.com

*NexGard. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.merial.com

*NexIded 64 Action.

Effectiveness at eight hours, in a mell-controlled laboratory study, NexGard began to kill fleas four hours after initial administration and demonstrated >99% effectiveness at eight hours. In a separate well-controlled laboratory study, NexGard demonstrated 100% effectiveness against adult fleas 24 hours post-infestation for 35 days, and was ≥ 93% effective at 12 hours post-infestation through Day 21, and on Day 35. On Day 28, NexGard was 81.1% effective 12 hours post-infestation. Dogs in both the treated and control groups that were infested with fleas son Day -1 generated flea eggs at 12- and 24-hours, post-treatment 1- gegs in the NexGard treater dogs, and 4-90 eggs and 0-118 eggs in the NexGard treater dogs, and 4-90 eggs and 0-118 eggs in the control dogs, at 12- and 24-hours, respectively). At subsequent evaluations post-infestation, fleas from dogs in the treated group were essentially unable to produce any eggs (0-1 eggs) while fleas from dogs in the control group continued to produce eggs (1-141 eggs). In a 90-day US field study conducted in households with existing flea infestations of varying severity, the effectiveness of NexGard against fleas on the Day 30, 60 and 90 visits compared with baseline was 98.0%, 99.7%, and 99.9%, respectively.

Collectively, the data from the three studies (two laboratory and one field) demonstrate that NexGard kills fleas before they can lay eggs, thus preventing subsequent flea infestations after the start of treatment of existing flea infestations.

In well-controlled laboratory studies, NexGard demonstrated >97% effectiveness against *Dermacentor variabilis*, >94% effectiveness against *Ixodes scapularis*, and >83% effectiveness against *Ihipicephalus sanguineus*, 48 hours post-infestation for 30 days. At 72 hours post-infestation, NexGard demonstrated >97% effectiveness against *Amblyomma americanum* for 30 days.

demonstrated >9/% effectiveness against. Amolyomma americanum for 30 days.

Animal Safety:
In a margin of safety study, NexGard was administered orally to 8 to 9-week-old Beagle puppies at 1, 3, and 5 times the maximum exposure dose (6.3 mg/kg) for three treatments every 28 days, followed by three treatments every 14 days, for a total of six treatments. Dogs in the control group were sham-dosed. There were no clinically-relevant effects related to treatment on physical examination, body weight, food consumption, clinical pathology (hematology, clinical chemistries, or coagulation tests), gross pathology, histopathology or organ weights. Vomiting occurred throughout the study, with a similar incidence in the treated and control groups, including one dog in the 5x group that vomited four hours after treatment.

In a well-controlled field study, NexGard was used concomitantly with other medications, such as vaccines, anthelimitics, antibiotics (including topicals), steroids, NSAIDS, anesthetics, and antihistamines. No adverse reactions were observed from the concomitant use of NexGard with other medications.

Storage Information: Store at or below 30°C (86°F) with excursions permitted up to 40°C (104°F).

How Supplied:
NexGard is available in four sizes of beef-flavored soft chewables: 11.3, 28.3, 68 or 136 mg afoxolaner. Each chewable size is available in color-coded packages of 1, 3 or 6 beef-flavored chewables.

NADA 141-406. Approved by FDA

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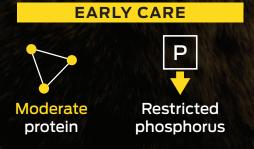


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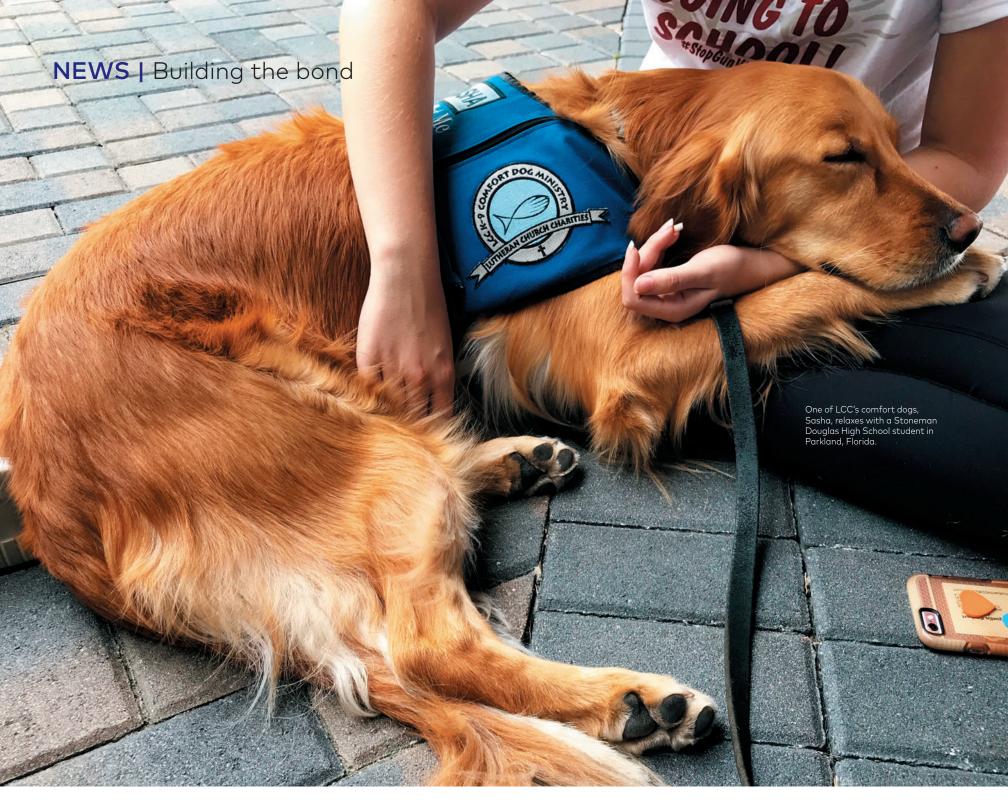
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Ahelping Comfort Within crisis

In the aftermath of a tragic event or natural disaster, Lutheran Church Charities' K-9 Comfort Dog Ministry helps bring light back into the victims' dark world. By Hannah Wagle

n the dark wake of disaster, a numbness spreads over those affected. Whether it's a natural disaster or a manmade tragedy, the light leaves people's eyes and they're left feeling isolated, alone and in need of someone to help them back to their feet—someone to listen, care and give love without judgment. The comfort dogs of Lutheran Church Charities (LCC) serve just that purpose.

The beginning of hope

It started in 2008, recalls President and CEO Tim Hetzner, with four golden retrievers and a relief mission just outside New Orleans, Louisiana: "When Hurricane Katrina hit, FEMA asked if we could do search and rescue for people and their pets. It was there on those lifeboats that we saw the magical therapy of a person with a pet going through crisis. They were

willing to risk their lives rather than part with their pets."

After that, Hetzner says the call to action for LCC K-9 Comfort Dog Ministry was explosive. "Now we have about 130 dogs in 20 states. If there's a crisis or disaster, we deploy our dogs and handlers from all over." For instance, 19 dogs from 10 states went to Florida to comfort those affected by the Parkland school shooting, Hetzner says.



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Straubinger RK, Chang YF, Jacobson RH, Appel MJ. Sera from OspA-vaccinated dogs, but not those from tick-infected dogs, inhibit in vitro growth of Borrelia burgdorferi. J Clin Microbiol. 1995;33(10):2745-2751.

² Rice Conlon JA, Mather TN, Tanner P, Gallo G, Jacobson RH. Efficacy of a nonadjuvanted, outer surface protein A, recombinant vaccine in dogs after challenge by ticks naturally infected with *Borrelia burgdorferi. Vet Ther.* 2000;1(2):96-107.

³ Probert WS, Crawford M, Cadiz RB, LeFebvre RB. Immunization with outer surface protein (0sp) A, but not 0spC, provides cross-protection of mice challenged with North American isolates of *Borrelia burgdorferi*. J Infect Dis. 1997;175(2):400-405

NEWS | Building the bond



 $Pictured from \ left to \ right: Hannah, Tobias, Ruthie \ and Jacob \ are \ ready \ to \ bring \ comfort \ to \ those \ in \ need.$

Practiced comfort

The dogs are trained by the organization, for the organization. From the time the dogs—all American Kennel Club-registered golden retrievers—are 8 weeks old, they're trained for 16 to 18 months. They work with multiple handlers to prepare them to visit places with any number of people. They're trained not to be spooked by noises like gunshots—"They visit military funerals, which often have 21-gun salutes," Hetzner explains—and learn to be comfortable around people of all ages, shapes and sizes.

The directives of the handlers and comfort dogs of Lutheran Church Charities are simple. "Boots and paws on the ground within 24 hours of an invitation," Hetzner says. "We never charge those we serve. We pick up all of our transportation, food and lodgings so there's no burden on the people in the midst of a crisis. As a faith ministry, we're there to bring mercy and compassion to people going through dark times. But the key is the dogs."

Where people affected by crisis might not open up to the people around them, Hetzner says it's a different story with the organization's

comfort dogs. "Many times they'll talk to the dogs first," he explains. "They're good listeners, they don't take notes, they're confidential." He says the dogs become a type of counselor, and each of the 130 dogs have their own Facebook account, email address and other means of contact and communication so they can extend comfort even after they've left the site of the disaster. "The handler, of course, has to type the responses," Hetzner confides.

And, according to Hetzner, this quiet counseling happens wherever the dogs are called—and they've been called seemingly everywhere.

"Every time they see one of our dogs, you see the miracle of their eyes lighting up. The dogs sit or lay, and the people will lay on them like a comfort rug with a heartbeat. And then they'll talk to the dog. And then they'll start smiling, and there's hope again."

—Tim Hetzner, LCC president and CEO

They've traveled to comfort the victims of the Las Vegas, Orlando and Sandy Hook shootings, as well as other major tragic events like the Boston Marathon bombing. Recently, the dogs were in Parkland, Florida, while another dispatch of dogs made its way to victims of river flooding in Illinois, near where the organization is based in Northbrook, Illinois. Suffice to say, the dogs and their handlers have their work cut out for them.

The care of the caregivers

With the work cut out for them comes risk, of course. Hetzner agrees wholeheartedly. "The dogs take on the emotions of the people petting them," he says. "Which is



LCC's deployment map to Parkland, Florida.

Building the bond | NEWS



Jewel, an LCC comfort dog, in Parkland, Florida.

why we have a veterinarian out with us. And the handlers know their dogs. They know when they've had enough and need a break." He explains that the dogs are only working with victims for an hour, then their vests are removed and they have ample time to play and run with their handlers before the vests need to go back on.

"We very intently take care of these dogs and their emotional well-being," Hetzner says. "And the same goes for our handlers." He says compassion fatigue is common within the people of the organization alongside the dogs they work with. "We debrief every night to talk about the day," Hetzner explains. "People talk about what happened and we make sure our humans are good with it all."

As far as physical and behavioral health go, Hetzner says they pull out all the stops. "People usually ask how many years we work the dogs, and I say we leave that up to the veterinarian because the health and well-being of the dog is key to us. When the vet says they should be retired, that's what we do. Whatever's best for the dog." He explains that he is constantly in contact with John Collister, DVM, PhD, an associate professor at the University of Minnesota College of Veterinary Medicine. He also will not let a service dog be placed until it's been examined by a veterinarian working with the organization.

"We never kennel the dogs," Hetzner says. "They fly with us. Each dog has two caregivers: a primary and secondary. We don't use treats, and we feed them only high-quality food. Grooming, care and regular veterinary visits are so important to us—we don't want to wait until there's

a health issue. And the veterinarians have been wonderful. In most cases, they service our dogs for free or at cost. But most vets like dogs, y'know, and we like them."

It's an awful lot of time and care that goes into the comfort dogs, but Hetzner believes it's all worth it. "We invest a lot in these dogs," he agrees, "but they touch thousands of lives. Mercy, compassion and care are so important in times like this—it

shows the world isn't evil. There's good still in it, and people need to see that there's hope."

That moment of connection

When people in crisis go numb, Hetzner says no matter what their face shows, you can always see the truth in their eyes—and most victims' eyes hold layers of hopelessness. "But every time they see one of our dogs, you see the miracle of their eyes lighting up. The dogs sit or lay, and the people will lay on them like a comfort rug with a heartbeat. And then they'll talk to the dog. And then they'll start smiling, and there's hope again."

Read past coverage on the work of the LCC K-9 Comfort Dogs following the Sandy Hook Elementary shooting at dvm360.com/sandyhook.



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CEO Wayne Pacelle resigns from HSUS amid allegations of sexual misconduct

Ambiguous results of initial investigation prompt resignations from board; long-term fallout for animal welfare organization still unclear. By Rachael Zimlich

major shakeup in leadership at the Humane Society of the United States (HSUS) prompted by allegations of sexual misconduct against CEO Wayne Pacelle and other leaders has rattled animal welfare circles, but its impact on the organization's overall mission and future remains unknown.

Allegations of sexual misconduct by Pacelle against female employees extending back more than decade were first made public in January, and rumblings of other indiscretions at the organization are rising in its aftermath. Pacelle, a sometimes polarizing figure in terms of support in the veterinary community, resigned in early February, but the damage may have already been done.

A look back on Pacelle's career

Pacelle's work in animal welfare began early—he was appointed executive director of The Fund for Animals at 23—and he joined HSUS in 1994 as a lobbyist and spokesperson. He was installed as CEO of HSUS in 2004 and was involved in the passage of more than 25 federal animal welfare statutes during his tenure.

At times, Pacelle's views and his efforts with HSUS conflicted with the views of professional veterinary organizations like the AVMA, particularly on food animal issues. Pacelle highlighted these differences when he helped HSUS launch an alternative to AVMA, the Humane Society Veterinary Medical Association (HSVMA), in 2008.

The allegations

The HSUS first acknowledged the sexual misconduct allegations against Pacelle in a Jan. 25 announcement of an internal investigation. HSUS's board of directors said the law firm Morgan Lewis was investigating the legitimacy of workplace misconduct claims against Pacelle, but the organization shared no further details about the investigation at that time.

On Feb. 2, Rick Bernthal, chair of the HSUS board, elaborated on the

investigation, stating that an HSUS staff member had complained about inappropriate actions by Pacelle but that the Morgan Lewis review had revealed insufficient evidence to remove him from his leadership post.

"Many of the allegations were explosive in nature, and reading or hearing about them is a shock to anyone. It was to us, too," Bernthal wrote in a statement from HSUS. "But when we sifted through the evidence presented, we did not find that many of these allegations were supported by credible evidence."

This announcement sparked anger in

ing and preventing similar experiences for employees going forward.

"I thank the brave women who have come forward. I believe them. Because of their courage, we are in a better place as an organization," Kitty Block writes in her statement. "If others have concerns, we want to hear them and have channels for doing so. If they are reported, I pledge that we will investigate them fairly and thoroughly."

Whether the actions of HSUS are enough to protect the support of its donors remains to be seen.

Jim Greenbaum, founder and manag-

"I thank the brave women who have come forward. I believe them. Because of their courage, we are in a better place as an organization. If others have concerns, we want to hear them and have channels for doing so."

—Kitty Block, acting president and CEO of HSUS

the public and among some on HSUS's own board, with several board members reportedly resigning in protest of a contentious Feb. 1 vote to keep Pacelle on. Pacelle resigned on Feb. 2, effective immediately, and attorney and president of Humane Society International Kitty Block was named acting president and CEO of HSUS in place of Pacelle.

"We are most grateful to Kitty for stepping forward to lead the organization as we continue to advance our mission, which has never been more important," Bernthal wrote in a followup statement after Pacelle's resignation.

Moving forward and future fallout

HSUS would not answer additional specific questions from *dvm360* magazine on the allegations against Pacelle or whether a search for a permanent CEO was planned.

For now, HSUS is simply deferring to a prepared statement from Kitty Block in which she revealed her own past experiences with sexual harassment at HSUS and a commitment to addressing director of the human and animal advocacy group The Greenbaum Foundation, has been outspoken on his public Facebook page about the allegations against Pacelle and the fallout from the board's initial vote to keep him as CEO. Having made a \$100,000 donation to HSUS last year, Greenbaum says he plans to weigh his decision about future donations carefully based on how HSUS responds to this crisis.

"I will give considerable weight to what actions are taken—or not taken—to ensure both a healthy work environment and a reconstituted board of directors comprised of individuals capable of overseeing such a large complex organization," Greenbaum told *dvm360* magazine, noting that he made this sentiment clear in an email to Bernthal as well.

HSUS declined to address whether other donations have been impacted by Pacelle's departure.

Impact on HSVMA

Gary Block, DVM, MS, DACVIM, board president for the now

9,000-member-strong HSVMA, says he doesn't anticipate the fallout from HSUS's turmoil will negatively impact the veterinary community or reach HSVMA, since the two organizations—while affiliated—operate independently. Gary Block says HSVMA had no knowledge of the investigation or its outcome prior to news of the allegations being made public by HSUS and in the mainstream media.

As far as how HSUS will recover from the fallout of Pacelle's departure, Gary Block says, to his knowledge, as many as eight HSUS board members may have resigned. At least two have returned, and two are in negotiations to return, he says, although HSUS did not offer confirmation.

Gary Block says HSVMA has its own board and will continue to work toward improving animal welfare. As a veterinarian-facing organization, HSVMA has not appeared to have, and hopefully will continue to be free from, repercussions from what is happening at HSUS, he adds. Going forward, Block says he hopes leadership for HSUS will continue the work Pacelle started in many arenas and with the same charisma and passion. He would, however, like to see a veterinarian, and perhaps a woman, leader for the organization.

"In a way, it's very sad because Wayne was obviously very articulate and a passionate advocate for animals, and an incredible public speaker. But—and this is my opinion and my opinion only—if the allegations are in any way, shape or form true, there was really no other choice," Gary Block says. "Clearly a change was needed with this type of allegation. To hear that anyone in an upper-level management position was potentially taking advantage or creating an asymmetric power dynamic, that's disappointing in any organization."

Rachael Zimlich is a freelance writer in Cleveland, Ohio, and a former reporter for dvm360 magazine. Read dvm360's coverage of sexual harassment and the #MeToo movement in veterinary medicine at dvm360.com/metoo.

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DETECT. PREVENT. TREAT.



AHS introduces algorithm to minimize heartworm transmission in relocated dogs

In wake of 2017's multiple natural disasters, heartworm society offers guidelines for testing, treatment and prevention before pets are transported out of their current state.

he 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.

"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 admin-

istration, 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:

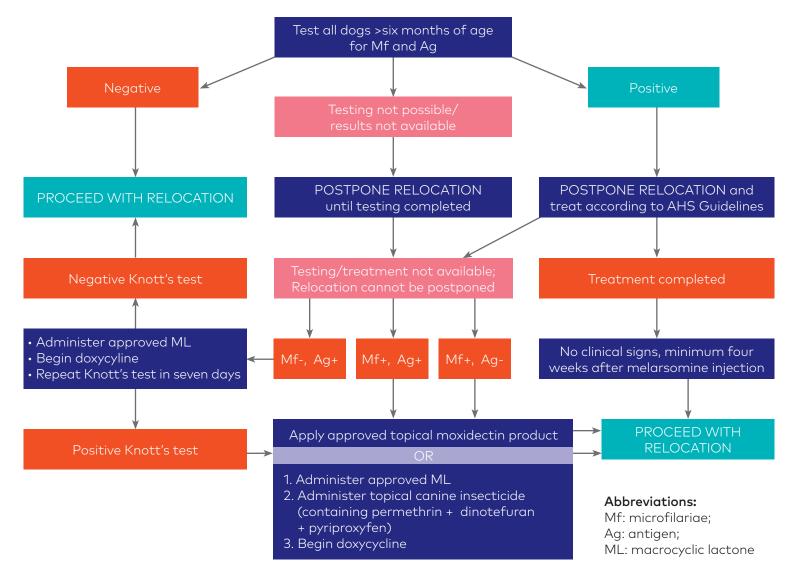
- > Testing all dogs 6 months of age or older before relocation
- > Delaying relocation of heartworm-positive dogs
- > Pretreating heartworm-positive dogs (e.g. administering macrocyclic lactone drugs, applying an EPA-

approved product that kills and repels mosquitoes, 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."

Algorithm for minimizing heartworm transmission in relocated dogs



DON'T LET THE LONE STAR TICK HIDE IN PLAIN SIGHT

Part three of a three-part series

Dr. Thomas Mather, professor of entomology and director of the TickEncounter Resource Center at the University of Rhode Island, likes to tell the story about a beagle who loved to roam freely around the bushes and mulched areas of her family's backyard. When her owners noticed what looked like handfuls of poppy seeds strewn about the house – on the couch, bedsheets and carpet – they called him for his advice.

Mather knew right away the family was dealing with a larval tick infestation. The larvae were hitching a ride on the nailbeds of the beagle's feet, where they went largely unnoticed by her owners. Sharing stories like this with your own clients can help you underscore the importance of what Mather calls "tick smarts".

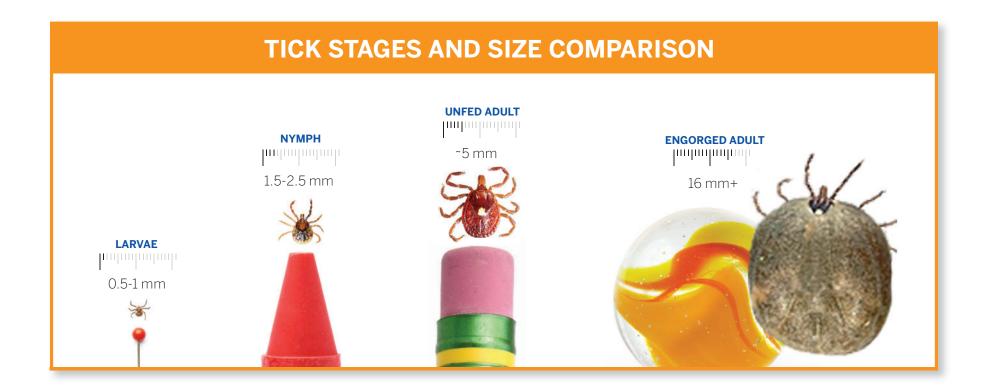
KEEPING TICKS OUT

Larval ticks, commonly called seed ticks, can lead to serious problems for pets and humans alike. A female Lone Star tick can lay up to 3,000 eggs at a time, and a single blade of grass can hold many¹.

With one brush of the leg, hundreds of larval Lone Star ticks can climb through the fabric of woven socks or hitch a ride in a pet's fur. Dr. Scott Commins, allergist at the University of North Carolina-Chapel Hill, treats patients suffering from a rare red meat allergy linked to bites from the Lone Star tick in humans. He sometimes notices larval tick bites on the feet and ankles of these patients, indicating frequent exposure to the parasites in daily life. The Lone Star tick, as both larva and adult, can be on a host and out of sight more quickly than your clients might notice.

Dr. Brian Herrin, a veterinary parasitologist at Kansas State University, tells his clients that many factors can result in successful tick control, including tick control products. Methods of prevention include frequent body checks and grooming sessions after outdoor activity with pets, and keeping a tidy yard free of organic debris where ticks can hide.

You can learn more about the Lone Star tick and tick-borne diseases at the TickEncounter Resource Center website (tickencounter.org).



1"Amblyomma americanum (Lone Star ticks)". University of Rhode Island TickEncounter Center. http://tickencounter.org/tick_identification/lone_star_tick#top. Accessed October 11, 2017. Merial is now part of Boehringer Ingelheim. ©2018 Merial Inc., Duluth, GA. All rights reserved. NEXLSTADVERTORIAL2-3-R (3/18).



Matthew J. Salois announced as new AVMA chief economist

The former director of global scientific affairs and policy at Elanco Animal Health will replace the current (and first) Veterinary Economics Division director, Michael Dicks.

he AVMA announced in March that it has hired Matthew J. Salois, PhD, to lead the association's Veterinary Economics Division. He will replace the division's current and first—director, Michael R. Dicks, PhD, who announced his retirement after serving five years in the role.

Salois comes to the AVMA from



Elanco Animal Health, according to an association release. He has served as director of global scientific affairs and policy at Elanco

since 2016, and he was an economic research and policy advisor for the company from 2014 to 2016. Before joining Elanco, he worked as the chief economist at the Florida Department of Citrus and as an assistant professor in economics at the University of Reading in the U.K.

"Matt brings a wealth of industry experience and knowledge of economics and research," says AVMA President Michael J. Topper, DVM, in the release. "He has the opportunity now to build upon the AVMA Economic Division's solid foundation to ensure that all the incredible data we have is turned into the most effective tools and resources for our members and the profession."

Salois says the scope of achievement already accomplished by the AVMA Economics Division has been "breathtaking" and that the economics team currently in place is a testament to AVMA's commitment to the veterinary profession. "I feel very privileged to be joining not only a team that I admire,



Raise your econ IQ

Michael Dicks may be moving on from the AVMA, but his data-filled wisdom lives on at dvm360.com/AVMAecon.

GALLIPRANT® (grapiprant tablets)

For oral use in dogs only

20 mg, 60 mg and 100 mg flavored tablets

A prostaglandin E, (PGE,) EP4 receptor antagonist; a non-cyclooxygenase inhibiting, non-steroidal anti-inflammatory drug Caution: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian. Before using this product, please consult the product insert, a summary of which follows:

 $\label{locality} \textbf{Indication:} \ \mathsf{GALLIPRANT} \ (\mathsf{grapiprant} \ \mathsf{tablets}) \ \mathsf{is} \ \mathsf{indicated} \ \mathsf{for} \ \mathsf{the} \ \mathsf{control} \ \mathsf{of} \ \mathsf{pain} \ \mathsf{and} \ \mathsf{inflammation} \ \mathsf{associated} \ \mathsf{with} \ \mathsf{osteoarthritis} \ \mathsf{in} \ \mathsf{dogs}.$ Dosage and Administration: Always provide "Information for Dog Owners" Sheet with prescription. Use the lowest effective dose for the shortest duration consistent with individual response. The dose of GALLIPRANT (grapiprant tablets) is 0.9 mg/lb (2 mg/kg) once daily.

GALLIPRANT tablets are scored and dosage should be calculated in half tablet increments. Dogs less than 8 lbs (3.6 kgs) cannot be accurately dosed. **See product insert for complete dosing and administration information.**

Contraindications: GALLIPRANT should not be used in dogs that have a hypersensitivity to grapiprant. Warnings: Not for use in humans. Keep this and all medications out of reach of children and pets. Consult a physician in case of accidental ingestion by humans. For use in dogs only. Store GALLIPRANT out of reach of dogs and other pets in a secured location in order to prevent accidental ingestion or overdose.

Precoutions: The safe use of GALLIPRANT has not been evaluated in dogs younger than 9 months of age and less than 8 lbs (3.6 kg), dogs used for breeding, or in pregnant or lactating dogs. Adverse reactions in dogs receiving GALLIPRANT may include vomiting, diarrhea, decreased appetite, mucoid, watery or bloody stools, and decreases in serum albumin and total protein

If GALLIPRANT is used long term, appropriate monitoring is recommended. Concurrent use with other anti-inflammatory drugs, such as COX-inhibiting NSAIDs or corticosteroids, should be avoided. If additional pain medication is needed after a daily dose of GALLIPRANT, a non-NSAID/non-corticosteroid class of analgesic may be necessary.

The concomitant use of protein-bound drugs with GALLIPRANT has not been studied. Commonly used protein-bound drugs include cardiac, anticonvulsant and behavioral medications.

Drug compatibility should be monitored in patients requiring adjunctive therapy. Consider appropriate washout times when switching from one anti-inflammatory to another or who switching from corticosteroids or COX-inhibiting NSAIDs to GALLIPRANT use.

The use of GALLIPRANT in dogs with cardiac disease has not been studied.

It is not known whether dogs with a history of hypersensitivity to sulfonamide drugs will exhibit hypersensitivity to GALLIPRANT. GALLIPRANT is a methylbenzenesulfonamide.

Adverse Reactions: In a controlled field study, 285 dogs were evaluated for safety when given either GALLIPRANT or a vehicle control (tablet minus galliprant) at a dose of 2 mg/kg (0.9 mg/lb) once daily for 28 days. GALLIPRANT-treated dogs ranged in age from 2 yrs to 16.75 years. The following adverse reactions were observed:

Adverse reaction*	GALLIPRANT (grapiprant tablets) N = 141	Vehicle control (tablets minus grapiprant) N = 144
Vomiting	24	9
Diarrhea, soft stool	17	13
Anorexia, inappe- tence	9	7
Lethargy	6	2
Buccal ulcer	1	0
Immune mediated hemolytic anemia	1	0

*Dogs may have experienced more than one type or occurrence during the study GALLIPRANT was used safely during the field studies with other concurrent therapies, including antibiotics, parasiticides and vaccinations.

To report suspected adverse drug events and/or obtain a copy of the Safety Data Sheet (SDS) or for technical assistance, call 1-888-545-5973.

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 Information for Dog Owners: Owners should be advised of the potential for adverse reactions and be informed of the clinical signs associated with drug intolerance. Adverse reactions may include vomiting, diarrhea, decreased appetite, and decreasing albumin and total protein. Appetite and stools should be monitored and owners should be advised to consult with their veterinarian if appetite decreases or stools become abnormal.

Veterinarian if appetite decreases or stools become abnormal.

Effectiveness: Two hundred and eighty five (285) client-owned dogs were enrolled in the study and evaluated for field safety. GALLIPRANT-treated dogs ranging in age from 2 to 16.75 years and weighing between 4.1 and 59.6 kgs (9-131 lbs) with radiographic and clinical signs of osteoarthritis were enrolled in a placebo-controlled, masked field study. Dogs had a 7-day washout from NSAID or other current OA therapy. Two hundred and sixty two (262) of the 285 dogs were included in the effectiveness evaluation. Dogs were assessed for improvements in pain and function by the owners using the Canine Brief Pain Inventory (CBPI) scoring system: A statistically significant difference in the proportion of treatment successes in the GALLIPRANT group (63/131 or 48.1%) was observed compared to the vehicle control group (41/131 or 31.3%). GALLIPRANT demonstrated statistically significant differences in owner assessed pain and function. The results of the field study demonstrate that GALLIPRANT, administered at 2 mg/kg (0.9 mg/pound) once daily for 28 days was effective for the control of pain and inflammation associated with osteoarthritis. was effective for the control of pain and inflamma

Storage Conditions: Store at or below 86° F (30° C)

How Supplied: $20 \, \mathrm{mg}$, $60 \, \mathrm{mg}$, $100 \, \mathrm{mg}$ flavored tablets in 7, 30 and 90 count bottles.

XARATANA

7, 30 and 90 count bottles.

NADA 141-455, Approved by FDA

US Patents: 6,710,054; 7,960,407; 9,265,756

Made in New Zealand Manufactured for: Arratana Therapeutics, Inc., Leawood, KS 66211

Reference: Intty//www.vet.penn.edu/docs/default-source/VCIC/canine-bpi_userguide.pdf?sfvrs
Additional information is available at 1-888-545-5973.

GALLIPRANT is a trademark of Aratana Therapeutics, Inc.

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Brief

Brief Summary: AT1-040-16

IMPORTANT SAFETY INFORMATION

Not for use in humans. For use in dogs only. Keep this and all medications out of reach of children and pets. Store out of reach of dogs and other pets in a secured location in order to prevent accidental ingestion or overdose. Do not use in dogs that have a hypersensitivity to grapiprant. If Galliprant is used long term, appropriate monitoring is recommended. Concomitant use of Galliprant with other antiinflammatory drugs, such as COX-inhibiting NSAIDs or corticosteroids, should be avoided. Concurrent use with other anti-inflammatory drugs or proteinbound drugs has not been studied. The safe use of Galliprant has not been evaluated in dogs younger than 9 months of age and less than 8 lbs (3.6 kg), dogs used for breeding, pregnant or lactating dogs, or dogs with cardiac disease. The most common adverse reactions were vomiting, diarrhea, decreased appetite, and lethargy. Please see brief summary to the left for full prescribing information.

Kirkby Shaw, K., Rausch-Derra, L., and Rhodes, L. 2016. "Grapiprant: an EP4-prostaglandin receptor antagonist and novel therapy for pain and inflammation. Vet. Med. Sci. 2: 3-9.

2. Rausch-Derra, L., Huebner, M., and Rhodes, L. 2015. "Evaluation of the safety of long-term, daily oral administration of grapiprant, a novel drug for treatmen of osteoarthritis pain and inflammation, in healthy dogs." Am. J. Vet. Res. 76.10:

853-859.

3. Rausch-Derra, L., Rhodes, L., Freshwater, L., et al. 2016. "Pharmacokinetic comparison of oral tablet and suspension formulations of grapiprant, a nove therapeutic for the pain and inflammation of osteoarthritis in dogs." J. Vet. Pharmacol. March 29. DOI: 10.1111/jvp.12306.



but also to be a part of the AVMA and a world-class group of people dedicated to providing value to its members," Salois says in the release.

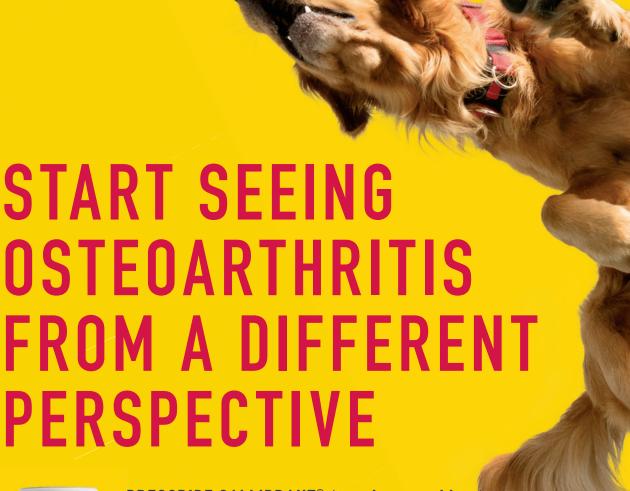
One of the new director's goals is to deliver economic analyses that provide tangible and actionable direction for the veterinary profession. "Like many economists, I have a genuine passion

for the field," he says. "But my 'why' is more than just about economics; it's about acting on the insights generated through economics to help guide decisions and, hopefully, lead the veterinary profession to a stronger place."

Salois says the AVMA has already done much to benefit its members and the profession, such as taking the many sources of data available and identifying the most relevant and valuable information "hiding inside." But he also stresses that there's a lot veterinarians can do to help economists.

"I have been privileged to work with some top-notch veterinarians the last few years, and they have truly helped me be a better economist by bringing their insights and perspective into my work," Salois says. "By partnering together, I believe that economists and veterinarians can become more than the sum of their parts. I want to hear our members' perspectives on the challenges and opportunities facing the profession and how they see economics ultimately helping them."





PRESCRIBE GALLIPRANT® (grapiprant tablets)
FROM THE EARLIEST DIAGNOSED STAGES
OF OSTEOARTHRITIS (OA).

Galliprant is a first-in-class, non-COX-inhibiting prostaglandin receptor antagonist (PRA) that specifically acts on the EP4 receptor. Its mode of action targets OA pain and inflammation while reducing the impact on GI, kidney and liver homeostasis.^{1,2} It was well-tolerated by healthy dogs in a 9-month safety study at up to 15 times the recommended therapeutic dose.^{2,3}

Visit galliprantfordogs.com/early for more information about Galliprant.

INDICATION

Galliprant is indicated for the control of pain and inflammation associated with osteoarthritis in dogs.

Human-animal bond certification now available through HABRI, NAVC initiative

he Human Animal Bond Research Institute (HABRI) and the North American Veterinary Community (NAVC) have launched a certification course for practicing veterinarians, veterinary nurses and practice managers: Human Animal Bond Certified.

A series of online modules created by experts in human-animal interaction science instructs veterinary professionals about the health benefits of pet ownership and human-animal interaction and how to best use that knowledge in veterinary practice, according to a release from both associations.

Participants utilize an online interface at an individualized pace, focusing on aspects of veterinary practice ranging from better client dialogue to compliance to improved financial performance, says Tom Bohn, CEO of NAVC, in the release.

In a recent HABRI survey of 2,000 pet owners who were educated about the benefits of pet ownership:

- > 92 percent said they were more likely to maintain a pet's health, including keeping up with vaccines and preventive medicine.
- > 89 percent said they were more likely to maintain a pet's health, including regular veterinary checkups.
- > 88 percent said they were more likely to provide a pet with higher-quality nutrition.
- > 51 percent said they were more likely to purchase pet health insurance.
- > 62 percent said they were less likely to skip visits to the veterinarian.

For more information about the Human Animal Bond Certification, visit NAVC.com/HAB.





Which veterinarians are charging what?

The latest installment in the Nationwide Purdue Veterinary Price Index digs deeper into GP vs. specialist, corporate vs. "Main Street," and urban vs. suburban vs. rural. By Brendan Howard

his is not Ye Olde Fee Schedule. This is not what veterinarians, practice managers and team members say they charge—which doesn't take into account discounting and other changes in pricing before a veterinary client hands over the credit card.

"These are the actual prices people are paying over time," said Kerry O'Hara, PhD, Nationwide director of research, data and strategy, to an audience at the 90th annual Western Veterinary Conference (WVC) in Las Vegas last week.

O'Hara presented top-line statistics from the most recent research, which takes a deeper dive into:

- > Generalist vs. specialist charges
- > Corporate/group practice vs. "Main Street" practice charges
- > Urban vs. suburban vs. rural practice charges.

Here are the highlights:

Uncle Sam's consumer price index is questionable

When the government puts together the consumer price index, it hires

employees to gather prices for a virtual shopping basket of products and services Americans buy each year—from houses to cars to groceries to, yes, veterinary care. But veterinary care represents only 0.3 percent of that basket. How does the government find out those prices? They call veterinary hospitals and get quotes over the phone for a few basic products or services.

Here's the scoop on that: According to the consumer price index, the total amount Americans spent on all products and services rose 14.3 percent from 2009 to 2017. What they spent on veterinary care, however, rose a whopping 30.9 percent.

The veterinary price index tells a different story

That 30.9 percent increase in prices doesn't jibe with data from millions of Nationwide claims in its veterinary price index. Nationwide and Purdue saw a rise of 10.2 percent in prices paid at time of service over the same period.

But that's still an increase, and a con-

siderable adjustment from the big recession: Prices were down 2.2 percent from 2009 to 2014, but then climbed 9.1 percent between 2015 and 2017.

What is this?

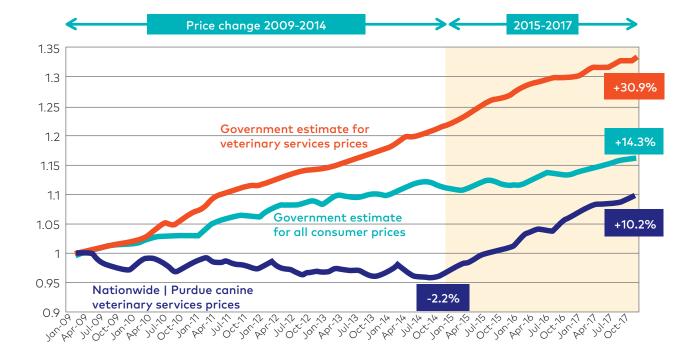
The Nationwide Purdue Veterinary Price Index uses data from claims submitted by Nationwide pet insurance holders. The data is analyzed by economists at Purdue University's Krannert School of Management.

What the Nationwide Purdue Veterinary Price Index is: The price index is based on prices paid at time of service from nine years of data and provides a look at relative change over time.

What the Nationwide Purdue Veterinary Price Index is not: The price index does not represent retail pricing or fee schedules but instead the real amount

sent retail pricing or fee schedules, but instead the real amount charged by the veterinarian and claimed by a Nationwide pet insurance customer.

Nationwide | Purdue Veterinary Price Index for canine treatments



There are more charts where this comes from See more charts created from Nationwide Purdue Veterinary Price Index data by visiting dvm360.com/priceindex18.



Even More Reasons to be "Happy"

ORAL | INTRANASAL | INJECTABLE

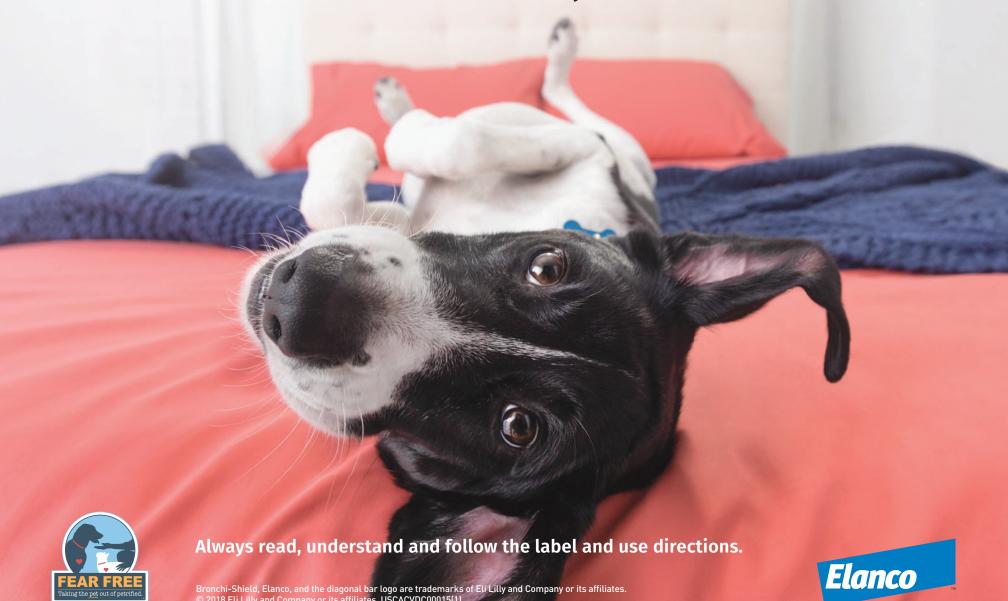
Bronchi-Shield® ORAL: a more comfortable vaccination experience with no needle sticks, no sneeze-backs and no wrestling

Bronchi-Shield® **III:** intranasal protection against *Bordetella*, adenovirus and parainfluenza



Bronchi-Shield® SQ: the affordable, injectable Bordetella vaccination

Contact your Elanco sales representative to learn more about the Bronchi-Shield family of vaccines



Prices go wild

Nationwide also took a swing at a deeper comparison: between medical services (like surgical procedures) and wellness care (like parasite prevention). What they found? Wellness care prices were up 7.8 percent between 2009 and 2014, and they were up 5.1 percent between 2015 and 2017. In those same

time periods, medical service prices were down 5.2 percent, then up 10.3 percent. Nationwide's O'Hara speculates that the initial drop may have been a result of earlier overpricing.

For comparison's sake ...

There were other stories in the data associated with important compari-

sons. Do you see your own experience in these numbers?

> General practitioner charges:

Down 2.8 percent 2009-2014, up 9.5 percent 2015-2017

- > Specialist charges: Down 10.5 percent 2009-2014, up 10.6 percent 2015-2017
- >Takeaway: Veterinary specialists started at a much higher price point, but they fell further than general practitioners during the recession. Now, specialists and generalists are much closer in price. Check it out: In 2009, specialists charged 40 percent more than general practitioners for services, with a \$124 difference. In 2017, they charged just 16 percent more for the same services, with a \$54 difference.

Nationwide Chief Veterinary Medical Officer Carol McConnell, DVM, did admit that this comparison between general practitioners and specialists isn't quite apples to apples: "These may be the same conditions, but specialists may be using different techniques than general practitioners," she said.

- > "Main Street" practice: Down 3.4 percent 2009-2014, up 9.9 percent
- > Corporate/group practice: Down 2 percent 2009-2014, up 8.3 percent 2015-2017
- > Takeaway: Turns out maybe corporate practices don't charge a ton more than Main Street practices—10 percent more, with a \$27 difference—and they're experiencing the same pressures.

"I was surprised at how similar corporate practices were in pricing," O'Hara said. "The differences were very minor."

- **> Urban:** Down 2.6 percent 2009-14, up 9 percent 2015-2017
- > Suburban: Down 2 percent 2009-14, up 8.8 percent 2015-2017
- > Rural: Down 1.6 percent 2009-2014, up 10.9 percent 2015-2017
- > Takeaway: Rural practices are coming up. In 2009, they charged \$63 less than urban hospitals for similar services; in 2017, just \$36 less.

The big takeaway? Yes, prices are going up, but O'Hara urged thoughtfulness in increases.

"Increasing prices is a living experiment," O'Hara said. "It may help the business now, but it may hurt consumer spending over time."

NADA 141-297, Approved by FDA

ProZinc®

(protamine zinc recombinant human insulin)

Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian. **Description:** ProZinc* insulin is a sterile aqueous protamine zinc suspension of recombinant human insulin.

Each mL contains:

i iii Contains.	
recombinant human insulin	40 International Units (IU)
protamine sulfate	0.466 mg
zinc oxide	0.088 mg
glycerin	16.00 mg
dibasic sodium phosphate, heptahydrate	3.78 mg
phenol (added as preservative)	2.50 mg
hydrochloric acid	1.63 mg
water for injection (maximum)	1005 mg
pH is adjusted with hydrochloric acid and/or sodium hydr	oxide.

Indication: ProZinc (protamine zinc recombinant human insulin) is indicated for the reduction of hyperglycemia and hyperglycemia-associated clinical signs in cats v diabetes mellitus.

Dosage and Administration: USE OF A SYRINGE OTHER THAN A U-40 SYRINGE WILL RESULT IN INCORRECT DOSING.

FOR SUBCUTANEOUS INJECTION IN CATS ONLY.

ProZinc insulin should be mixed by gently rolling the vial prior to withdrawing each dose from the vial. Using a U-40 insulin syringe, the injection should be administered subcutaneously on the back of the neck or on the side of the cat.

Always provide the Cat Owner Information Sheet with each prescription.

Aways provide the Cat Owner Information Sneet with each prescription.

In initial recommended ProZinc dose is 0.1 – 0.3 IU insulin/pound of body weight (0.2 – 0.7 IU/kg) every 12 hours. The dose should be given concurrently with or right after a meal. The veterinarian should re-evaluate the cat at appropriate intervals and adjust the dose based on both clinical signs and glucose nadirs until adequate glycemic control has been attained. In the effectiveness field study, glycemic control was considered adequate if the glucose nadir from a 9-hour blood glucose curve was between 80 and 150 mg/dL and clinical signs of hyperglycemia such as polyuria, polydipsia, and weight loss were improved

Further adjustments in the dosage may be necessary with changes in the cat's diet, body weight, or concomitant medication, or if the cat develops concurrent infection, inflammation, neoplasia, or an additional endocrine or other medical disorder.

Contraindications: ProZinc insulin is contraindicated in cats sensitive to protamine recombinant human insulin or any other ingredients in the ProZinc product. ProZinc insulin is contraindicated during episodes of hypoglycemia.

Warnings: User Safety: For use in cats only. Keep out of the reach of children. Avoid contact with eyes. In case of contact, immediately flush eyes with running water for at least 15 minutes. Accidental injection may cause hypoglycemia. In case of accidental injection, seek medical attention immediately. Exposure to product may induce a local or systemic allergic reaction in sensitized individuals.

Animal Safety: Owners should be advised to observe for signs of hypoglycemia (see Cat Owner Information Sheet). Use of this product, even at established doses, has been associated with hypoglycemia. An animal with signs of hypoglycemia should be treated immediately. Glucose should be given orally or intravenously as dictated by clinical signs Insulin should be temporarily withheld and, if indicated, the dosage adjusted.

Any change in insulin should be made cautiously and only under a veterinarian's supervision. Changes in insulin strength, manufacturer, type, species (human, animal or method of manufacture (rDNA versus animal-source insulin) may result in the need for a change in dosage.

Appropriate diagnostic tests should be performed to rule out other endocrinopathies in diabetic cats that are difficult to regulate.

Precautions: Animals presenting with severe ketoacidosis, anorexia, lethargy, and/or Precautions: Animals presenting with severe ketoacidosis, anorexia, lethargy, and/or vomiting should be stabilized with short-acting insulin and appropriate supportive thera until their condition is stabilized. As with all insulin products, careful patient monitoring for hypoglycemia and hyperglycemia are essential to attain and maintain adequate glycemic control and to prevent associated complications. Overdosage can result in profound hypoglycemia and death. Progestogens, certain endocrinopathies and glucocorticoids can have an antagonistic effect on insulin activity. Progestogen and glucocorticoid use should be avoided.

Reproductive Safety: The safety and effectiveness of ProZinc insulin in breeding, pregnant, and lactating cats has not been evaluated.

Use in Kittens: The safety and effectiveness of ProZinc insulin in kittens has not been

Effectiveness Field Study

In a 45-day effectiveness field study, 176 cats received ProZinc insulin. Hypoglycemia (defined as a blood glucose value of < 50 mg/dL) occurred in 71 of the cats at various (defined as a blood glucose value of < 50 mg/dL) occurred in 71 of the cats at various times throughout the study. Clinical signs of hypoglycemia were generally mild in nature (described as lethargic, sluggish, weak, trembling, uncoordinated, groggy, glassy-eyed or dazed). In 17 cases, the veterinarian provided oral glucose supplementation or food as treatment. Most cases were not associated with clinical signs and received no treatment. One cat had a serious hypoglycemic event associated with stupor, lateral recumbency, hypothermia and seizures. All cases of hypoglycemia resolved with appropriate therapy and if needed, a dose reduction and if needed, a dose reduction.

Three cats had injection site reactions which were described as either small, punctate, red lesions; lesions on neck; or palpable subcutaneous thickening. All injection site reactions resolved without cessation of therapy.

Four cats developed diabetic neuropathy during the study as evidenced by plantigrade stance. Three cats entered the study with plantigrade stance, one of which resolved by Day 45. Four cats were diagnosed with diabetic ketoacidosis during the study. Two were euthanized due to poor response to treatment. Five other cats were euthanized during the study, one of which had hypoglycemia. Four cats had received ProZinc insulin for less than a week and were euthanized due to worsening concurrent medical conditions.

The following additional clinical observations or diagnoses were reported in cats during the effectiveness field study: vomiting, lethargy, diarrhea, cystitis/hematuria, upper respiratory infection, dry coat, hair loss, ocular discharge, abnormal vocalization, black stool, and rapid breathing

Extended Use Field Study
Cats that completed the effectiveness study were enrolled into an extended use field study. In this study, 145 cats received ProZinc insulin for up to an additional 136 days. study. In this study, 145 cats received ProZinc insulin for up to an additional 136 days. Adverse reactions were similar to those reported during the 45-day effectiveness study and are listed in order of decreasing frequency: vomiting, hypoglycemia, anorexia/poor appetite, diarrhea, lethargy, cystitis/hematuria, and weakness. Twenty cats had signs consistent with hypoglycemia described as: sluggish, lethargic, unsteady, wobbly, seizures, trembling, or dazed. Most of these were treated by the owner or veterinarian with oral glucose supplementation or food; others received intravenous glucose. One cat had a serious hypoglycemic event associated with seizures and blindness. The cat fully recovered after supportive therapy and finished the study. All cases of hypoglycemia resolved with appropriate therapy and if needed, a dose reduction.

Fourteen cats died or were euthanized during the extended use study. In two cases, continued use of insulin despite anorexia and signs of hypoglycemia contributed to the deaths. In one case, the owner decided not to continue therapy after a presumed episode of hypoglycemia. The rest were due to concurrent medical conditions or worsening of the diabeter emiliture.

Information for Cat Owners: Please refer to the Cat Owner Information Sheet for more Information for Cat Owners: Please refer to the Cat Owner Information Sheet for more information about ProZinc insulin. ProZinc insulin, like other insulin products, is not free from adverse reactions. Owners should be advised of the potential for adverse reactions and be informed of the associated clinical signs. Potential adverse reactions include: hypoglycemia, insulin antagonism/resistance, rapid insulin metabolism, insulin-induced hyperglycemia (Somogyi Effect), and local or systemic reactions. The most common adverse reaction observed is hypoglycemia. Signs may include: weakness, depression, behavioral changes, muscle twitching, and anxiety. In severe cases of hypoglycemia, seizures and come can occur. Hypoglycemia pe fatal if an affected cat does not receive seizures and coma can occur. Hypoglycemia can be fatal if an affected cat does not receive prompt treatment. Appropriate veterinary monitoring of blood glucose, adjustment of insulin dose and regimen as needed, and stabilization of diet and activity help minimize the risk of hypoglycemic episodes. The attending veterinarian should evaluate other adverse reactions on a case-by-case basis to determine if an adjustment in therapy is appropriate, or if alternative therapy should be considered.

Effectiveness: A total of 187 client-owned cats were enrolled in a 45-day field study, with 176 receiving ProZinc insulin. One hundred and fifty-one cats were included in the effectiveness analysis. The patients included various purebred and mixed breed cats ranging in age from 3 to 19 years and in weight from 4.6 to 20.8 pounds. Of the cats included in the effectiveness analysis, 101 were castrated males, 49 were spayed females, and 1 was an intact female.

Cats were started on ProZinc insulin at a dose of 0.1-0.3 IU/lb (0.2-0.7 IU/kg) twice daily Cats were evaluated at 7, 14, 30, and 45 days after initiation of therapy and the dose was adjusted based on clinical signs and results of 9-hour blood glucose curves on Days 7, 14,

Effectiveness was based on successful control of diabetes which was defined as Effectiveness was based on successful control of diabetes which was defined as improvement in at least one blood glucose variable (glucose curve mean, nadir, or fructosamine) and at least one clinical sign (polyuria, polydipsia, or body weight). Based on this definition, 115 of 151 cases (76.2%) were considered successful. Blood glucose curve means decreased from 415.3 mg/dL on Day 0 to 203.2 mg/dL by Day 45 and the mean blood glucose nadir decreased from 407.9 mg/dL on Day 0 to 142.4 mg/dL on Day 45. Mean fructosamine values decreased from 505.9 μmol/L on Day 0 to 380.7 μmol/L on Day 45.

Cats that completed the effectiveness study were enrolled in an extended use field study. The mean fructosamine value was 342.0 μ mol/L after a total of 181 days of ProZinc therapy.

How Supplied: ProZinc insulin is supplied as a sterile injectable suspension in 10 mL multidose vials. Each mL of ProZinc product contains 40 IU recombinant human insu Storage Conditions: Store in an upright position under refrigeration at 36-46°F (2-8°C). Do not freeze. Protect from light.

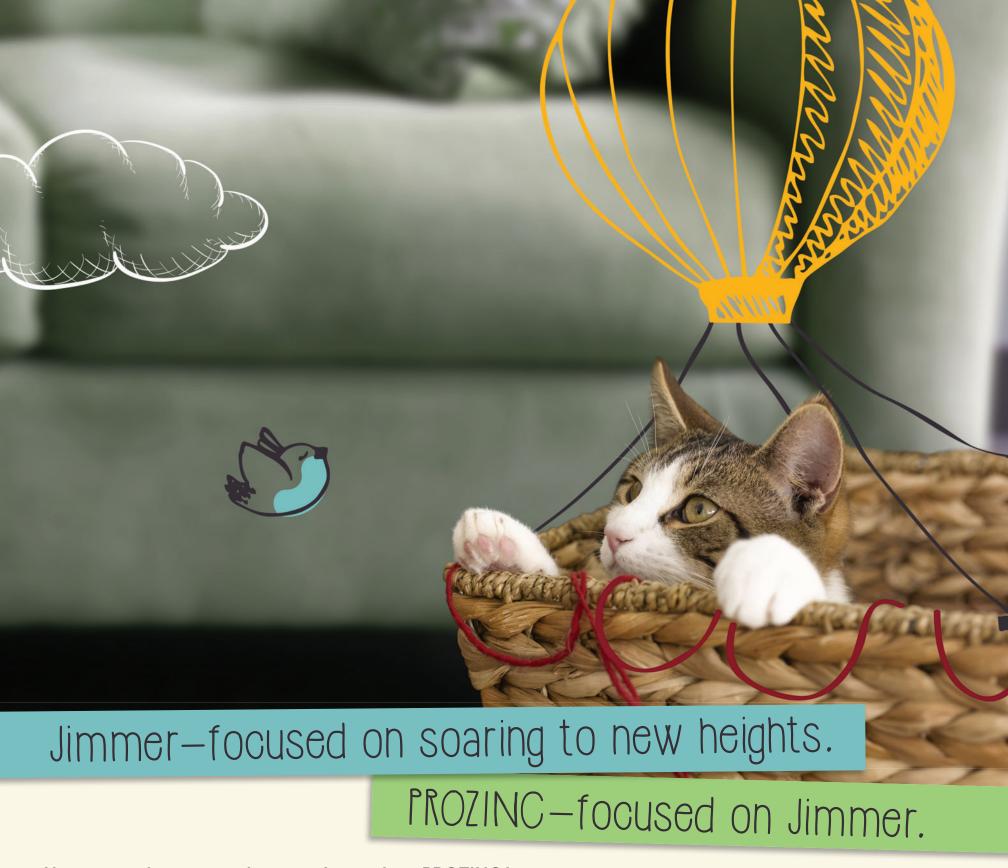
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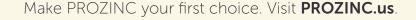
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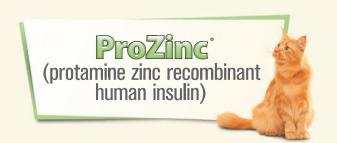




No matter what your patients are focused on, PROZINC is the ideal insulin choice that meets their individual needs.

That's because PROZINC puts diabetic cats first with efficacy proven to improve clinical signs,¹ a duration of action appropriate for felines,^{2,3} and expert veterinary support. Plus, PROZINC is the only veterinary insulin recommended by the AAHA for the initial treatment of diabetic cats.³





Important Safety Information: For use in cats only. Animals presenting with severe ketoacidosis, anorexia, lethargy, and/or vomiting should be stabilized with short-acting insulin and appropriate supportive therapy until their condition is stabilized. As with all insulin products, careful patient monitoring for hypoglycemia and hyperglycemia is essential to attain and maintain adequate glycemic control and to prevent associated complications. Overdosage can result in profound hypoglycemia and death. Progestogen and glucocorticoid use should be avoided. PROZINC insulin is contraindicated in cats during episodes of hypoglycemia and in cats sensitive to protamine zinc recombinant human insulin or any other ingredients in the PROZINC product.



References: 1. Nelson RW, Henley K, Cole C; PZIR Clinical Study Group. Field safety and efficacy of protamine zinc recombinant human insulin for treatment of diabetes mellitus in cats. *J Vet Intern Med*. 2009;23(4):787–793. **2.** Nelson RW. Disorders of the endocrine pancreas. In: Nelson RW, Cuoto CG, eds. *Small Animal Internal Medicine*. 4th ed. St. Louis, MO: Mosby Elsevier; 2008:764–802. **3.** Rucinsky R, Cook A, Haley S, Nelson R, Zoran DL, Poundstone M; American Animal Hospital Association (AAHA). AAHA diabetes management guidelines for dogs and cats. *J Am Anim Hosp Assoc*. 2010;46(3):215–224.

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> Continued from the cover



MightyVet aims to support veterinarians in times of distress.

a Facebook support group for veterinary professionals. The event was designed to bring awareness to issues of burnout, compassion fatigue, ethics exhaustion and suicide prevention—and to introduce the online network mightyvet.org. MightyVet was recently launched with the goal of supporting well-being for veterinary professionals through free services that include mentorship by industry experts, online resources and RACE-approved continuing education on mental health and wellness topics hosted on vetmedteam.com.

During the event Dr. Kipperman spoke about his own experience with the emotional toll of convenience euthanasia in practice.

"I particularly remember a visit where I was crying in front of my therapist, trying to reconcile what kind of doctor and what kind of person I was to treat a dog with multicentric lymphoma at 9 a.m. and kill a dog with multicentric lymphoma at 11 a.m. simply because of different resources," Dr. Kipperman said.

Queenie, he said, was the tipping point for him, leading him down a path to conduct research on the topics of economic euthanasia and the moral stress it causes for veterinarians. Data from his research was published in the April 2017 issue of *Journal of the American Veterinary Medical Association* (read the abstract at

avmajournals.avma.org/doi/10.2460/javma.250.7.785). Forty-three percent of respondents reported seeing multiple patients a day where economic constraints were an issue in their cases. And about half of respondents said clients' economic limitations could have had a moderate impact on their professional burnout, while about 25 percent cited it as a possible leading cause of burnout.

The event also focused on suicide



Dr. Sophia Vin

awareness, with a video honoring Dr.
Sophia Yin, a leading behavior expert whose death by suicide in 2014 brought increased attention to

issues of mental health and suicide in the veterinary profession.

To put a personal note on suicide prevention, a tearful and triumphant Kimberly Pope-Robinson, DVM, CCFP, founder of 1 Life Connected Consulting, shared her own journey down a path to an authentic and sustainable career in veterinary medicine. Brandishing the pill bottle she'd held the day she contemplated suicide, Dr. Pope-Robinson revealed those intimate moments to the audience.

"The day I almost took my life started like any other day," she told attendees. "I got up, I fed the dog, brushed my teeth—maybe not in that order. But at the end of the day, I had no idea I

was going to end up on the edge of my bed, sitting on my bench, with this pill bottle—this exact pill bottle—in my hand, full of Vicodin. ... When I hold this pill bottle, the emotions that come over me are incredibly intense. It contains so much of that moment, when I wanted to end it.

"I'm here today because that day I chose life," she continued. "It wasn't like a thing went off in my head and all of the sudden everything was rainbows and unicorns. In the world that's not how it works. It's a fight. It's a fight I continue on to this day."

Dr. Pope-Robinson described the



Dr. Kimberly

strategies she developed to keep herself from falling into the abyss, which included accepting that she was not broken, embracing the bad with the

good and identifying her "sinkers," or the things that drag her down in life. Through her own transparency and vulnerability, she says she hopes to let others who've been in that same place know they're not alone.

Other speakers included Sonnya Dennis, DVM, DABVP, a practice owner and president of the Association for Veterinary Informatics, who spoke on ethics exhaustion, and Carrie Jurney, DVM, DACVIM (neurology), board member for Not One More Vet, who spoke about the epidemic of suicide in the veterinary profession.

MightyVet's continuing efforts will include ongoing CE modules and MightyVet Office Hours, where academics from veterinary and veterinary technology schools will hold online question-and-answer sessions for the veterinary community to form connections in real time.

"MightyVet is an industry-wide movement that offers access to information not otherwise taught as universal core curriculum in veterinary school," said Steve Weinrauch, BVMS, MRCVS, founder of MightyVet and chief veterinary officer at Trupanion in a press release announcing the event. "Our profession can be physically and emotionally demanding, and despite the best efforts of so many, nothing has ever truly made a sustained and comprehensive difference. From veterinarian or tech student to retiree, these issues remain closer to us than most realize."

Find (your) wellness at Fetch dvm360!

Take care of your physical and mental health with wellness-inspired resources. Refuel and recharge in the way you need. In Virginia Beach, May 17-20, Drs. Betsy Charles, Bree Montana, Caitlin DeWilde, Kimberly Ann Therrien and Sarah Wooten will arm you for support in tough times. Visit fetchdvm360 .com/vb for more.



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dvm360 readers share thoughts on declawing

Three DVMs make a case for onychectomy in certain circumstances.



CAUTION: Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian

INDICATIONS: For use in dogs to prevent canine heartworm disease by eliminating the tissue stage of heartworm larvae (Dirofilaria immitis) for a month (30 days) after infection and for the treatment and control of ascards (Toxocara canis, Toxascaris leonina) and hookworms (Ancylostoma caninum, Uncinaria stenocephala, Ancylostoma braziliense).

DOSAGE: HEARTGARD® Plus (ivermectin/pyrantel) should be administered orally at monthly intervals at the recommended minimum dose level of 6 mcg of ivermectin per kilogram (2.72 mcg/lb) and 5 mg of pyrantel (as pamoate salt) per kg (2.27 mg/lb) of body weight. The recommended dosing schedule for prevention of canine heartworm disease and for the treatment and control of ascarids and hookworms is as follows:

Dog Weight	Chewables Per Month	Ivermectin Content	Pyrantel Content	Color Coding On Foil Backing and Carton
Up to 25 lb	1	68 mcg	57 mg	Blue
26 to 50 lb	1	136 mcg	114 mg	Green
51 to 100 lb	1	272 mcg	227 mg	Brown

HEARTGARD Plus is recommended for dogs 6 weeks of age and older. For dogs over 100 lb use the appropriate combination of these chewalt

ADMINISTRATION: Remove only one chewable at a time from the foil-backed blister card. Return the card with the remaining chewables to its box to protect the product from light. Because most dogs find HEARTGARD Plus palatable, the product can be offered to the dog by hand. Alternatively, it may be added intact to a small amount of dog food. The chewable should be administered in a manner that encourages the dog to chew, rather than to swallow without chewing. Chewables may be broken into pieces and fed to dogs that normally swallow treats whole.

Care should be taken that the dog consumes the complete dose, and treated animals should be observed for a few minutes after administration to ensure that part of the dose is not lost or rejected. If it is suspected that any of the dose has been lost, redosing

HEARTGARD Plus should be given at monthly intervals during the period of the year when mosquitoes (vectors), potentially carrying infective heartworm larvae, are active. The initial dose must be given within a month (30 days) after the dog's first exposure to mosquitoes. The final dose must be given within a month (30 days) after the dog's last exposure to mosquitoes.

When replacing another heartworm preventive product in a heartworm disease preventive program, the first dose of HEARTGARD Plus must be given within a month (30 days) of the last dose of the former medication.

If the interval between doses exceeds a month (30 days), the efficacy of ivermectin can be reduced. Therefore, for optim performance, the chewable must be given once a month on or about the same day of the month. If treatment is delayed by a few days or many, immediate treatment with HEARTGARD Plus and resumption of the recommended dosing regime minimize the opportunity for the development of adult heartworms.

Monthly treatment with HEARTGARD Plus also provides effective treatment and control hookworms (A. caninum, U. stenocephala, A. braziliense). Clients should be advised of m

EFFICACY: HEARTGARD Plus Chewables, given orally using the recommended dose and regimen, are effective against the tissue larval stage of *D.immitis* for a month (30 days) after infection and, as a result, prevent the development of the adult stage. HEARTGARD Plus Chewables are also effective against canine ascarids (*T. canis, T. leonina*) and hookworms (*A. caninum, U. stenocephala, A. braziliense*).

ACCEPTABILITY: In acceptability and field trials, HEARTGARD Plus was shown to be an acceptable oral dosage consumed at first offering by the majority of dogs.

ACCEPTABILITY: In acceptability and field trials, HEARTGARD Plus was shown to be an acceptable oral dosage form that was consumed at first offering by the majority of dogs.

PRECAUTIONS: All dogs should be tested for existing heartworm infection before starting treatment with HEARTGARD Plus which is not effective against adult *D. immitis*. Infected dogs must be treated to remove adult heartworms and microfilariae before initiating a program with HEARTGARD Plus.

While some microfilariae may be killed by the ivermectin in HEARTGARD Plus at the recommended dose level, HEARTGARD Plus is not effective for microfilariae clearance. A mild hypersensitivity-type reaction, presumably due to dead or dying microfilariae and particularly involving a transient diarrhea, has been observed in clinical trials with ivermectin alone after treatment of some dogs that have circulating microfilariae.

Keep this and all drugs out of the reach of children.

In case of ingestion by humans, clients should be advised to contact a physician immediately. Physicians may contact a Poison Control Center for advice concerning cases of ingestion by humans.

Store between 68°F - 77°F (20°C - 25°C). Excursions between 59°F - 86°F (15°C - 30°C) are permitted. Protect product from light.

ADVERSE REACTIONS: In clinical field trials with HEARTGARD Plus, vomiting or diarrhea within 50 phase to proceed the process of dosing was rarely observed (1.1% of administered doses). The following adverse reactions have been reported following the use of HEARTGARD: Depression/lethargy, vomiting, anorexia, diarrhea, mydriasis, ataxia, staggering, convulsions and hypersalivation.

Depression/lethargy, vomiting, anorexia, diarrhea, mydriasis, ataxia, staggering, convulsions and hypersalivation.

SAFETY: HEARTGARD Plus has been shown to be bioequivalent to HEARTGARD, with respect to the bioavailability of ivermectin. The dose regimens of HEARTGARD Plus and HEARTGARD are the same with regard to ivermectin (6 mcg/kg). Studies with ivermectin indicate that certain dogs of the Collie breed are more sensitive to the effects of ivermectin administered at elevated dose levels (more than 16 times the target use level) than dogs of other breeds. At elevated doses, sensitive dogs showed adverse reactions which included mydriasis, depression, ataxia, tremors, drooling, paresis, recumbency, exhibity, stupor, come and death HEARTGARD demonstrated no signs of toxicity at 10 times the recommended dose (60 mcg/kg) in sensitive Collies. Results of these trials and bioequivalency studies, support the safety of HEARTGARD products in dogs, including Collies, when used as recommendee HEARTGARD Plus has shown a wide margin of safety at the recommended dose level in dogs, including pregnant or breeding bitches, stud dogs and puppies aged 6 or more weeks. In clinical trials, many commonly used flea collars, dips, shampoos, anthelimintics, antibiotics, vaccines and steroid preparations have been administered with HEARTGARD Plus in a heartworm disease prevention program.

In one trial, where some pups had parvovirus, there was a marginal reduction in efficacy against intestinal nematodes. nossibly due to the program in the progra

In one trial, where some pups had parvovirus, there was a marginal reduction in efficacy against intestinal nemat to a change in intestinal transit time.

HOW SUPPLIED: HEARTGARD Plus is available in three dosage strengths (See DOSAGE section) for dogs of different weights Each strength comes in convenient cartons of 6 and 12 chewables.

For customer service, please contact Merial at 1-888-637-4251.



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r. Robert Neunzig presented a very thoughtful and logical argument on why he declaws cats. I really appreciated his article (see "The declaw debate" in the January issue of dvm360). Believe it or not, declawing saves many cats' lives!

I recall a happy day when a proud grandfather brought in his two granddaughters with two kittens they had adopted at a local shelter. Upon the first visit everything checked out well for both kittens, and I will never forget the smiling faces of those two little girls and the joy their grandfather had given them through those kittens.

One month later, the same grandfather returned for the kittens' second visit with his granddaughters. This time both granddaughters had major scratches on both hands, arms and faces from the kittens. We discussed scratching posts, which the grandfather had responsibly invested in to no avail, and then our conversation led to declawing. That's when the grandfather cried, "You don't understand—the shelter made me sign a document stating I would never declaw the cats!"

When I heard that, I said I knew the head of that shelter, so please come with me—we are going call him and ask him what we should do.

The grandfather, granddaughters and kittens joined me in my office, where I proceeded to get the head of the shelter on the speakerphone. I explained to him what these new kitten owners were going through and asked for his advice since he had left the grandfather guilt-ridden about declawing the kittens.

I told the shelter owner that the grandfather was prepared to return these two kittens to his shelter, and you'd never guess what the shelter owner told the grandfather: Go ahead and declaw the kittens and never, ever return the kittens to his shelter!

I rest my case.

—Rick Campbell, DVM Salt Lake City, Utah

"I told the shelter owner that the grandfather was prepared to return these two kittens to his shelter."

—Dr. Rick Campbell

es, I declaw. But only with my surgical CO₂ laser. Obviously, complicated issues are not cutand-dried; therefore I don't understand why the use of CO₂ lasers hasn't been included in this debate. I performed declaws for several years prior to the development of surgical lasers. However, I began using a CO₂ laser soon after they came onto the veterinary market. There is no comparison!

Personally I believe we would be doing the feline species, as domesticated animals, and their "family members" an injustice not to offer declawing. But I also believe that all declawing procedures should be performed with laser. I realize not all veterinarians have a surgical laser, but they could refer to a practice that does.

> —Jeff Castle, DVM Winchester, Kentucky

n the debate over declawing cats, many are asking the question, "Would the cat rather be declawed or keep its toes?"

Even if we are foolish enough to take this road, we are asking the wrong questions. In cases where the owner's health or the cat's behavior makes declawing a near necessity, the real question to ask the cat is, "Would you rather be declawed, euthanized or given to a shelter?"

The answers given would likely not be as strongly anti-declaw as the animal rights fringe wants us to believe.

—Drew L. Allen, DVM Salt Lake City, Utah



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 visit www.HEARTGARD.com.



Society's regression is to blame for culture of sexual harassment

recently read the articles by Portia Stewart and Dr. Robin Downing concerning the #metoo movement and sexual harassment and assault (see the March issue of dvm360). I would like to offer few comments concerning questions that are raised directly or indirectly by these articles.

First, let me say that as a man, I am truly sorrowful for what they have suffered at the hands of a coward with a Y-chromosome. I refrain from using the word "man" because, by my definition, the perpetrators of the offenses against them and other women are not really men.

In response to Dr. Downing's question of why this is still happening in 2018, I believe the answer is relatively simple. When left untrained, we, like the canines we treat daily, will revert to instinctual behavior. Whether male or female, if a person is not trained from an early age to respect others, put

someone else's needs ahead of their own and resist temptation for immediate gratification by doing what is right and appropriate, then that person will revert to more instinctual behavior.

For those who deny this line of thinking, I encourage you to observe young kids at school or on a playground. I have seen the dominant personality in a class fight his or her way to the front of the line even though they were told to take another position in that line. Without intervention by the teacher, that child will do whatever is necessary to get their way and exert dominance. Watch two young boys who both want to play with a toy at the same time. They will begin to posture and challenge one another until the someone "gives up," or else a physical altercation will ensue. This is no different than two dogs that want the same treat and neither wants to concede. A fight is about to happen, as we have all seen far too many times. I argue that people are really no different.

My concern is that as we move forward as a society, we are regressing in many ways and we are blurring the lines. College students working at my practice tell me that the "hookup" culture and hypersexuality of young adults today is rampant. A huge majority of marketing today involves sex as the selling point. "Sexy" poses for selfies and pictures on social media are pervasive in today's culture.

With all this focus on sex and sexuality, I cannot see any improvement in sexual harassment in the horizon. I believe that until we are serious about absolute truth, concern for others, respect for others, established boundaries, etc., we will continue to see sexual harassment in the workplace, at schools and throughout society. Unfortunately, the social trends appear to be moving toward fewer boundaries, no absolute truths, disrespect for others, disregard for others, disdain for authority and obliteration of sexual boundaries. This is antithetical to what which would lead to more respect for others' sexuality.

I do not think any woman or man should be sexually harassed. I'm just not sure talking about it without addressing some core issues is going to lead to permanent change.

> —Ronald L. Lott, DVM Nacogdoches, Texas

NADA 141-273, Approved by FDA

Vetmedin® (pimobendan) Chewable Tablets

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

Description: Vetmedin (pimobendan) is supplied as oblong half-scored chewable tablets containing 1.25, 2.5, 5 or 10 mg pimobendan per tablet. Pimobendan, a benzimidazolepyridazinone derivative, is a non-sympathomimetic, non-glycoside inotropic drug with vasodilatative properties. Pimobendan exerts a stimulatory myocardial effect by a dual mechanism of action consisting of an increase in calcium sensitivity of cardiac myofilaments and inhibition of phosphodiesterase (Type III). Pimobendan exhibits vasodilating activity by inhibiting phosphodiesterase III activity. The chemical name of pimobendan is 4,5-dihydro-6-[2-(4-methoxyphenyl)-1H-benzimida

Indications: Vetmedin (pimobendan) is indicated for the management of the signs of mild, moderate, or severe (modified NYHA Class IIa, IIIP, or IVs) congestive heart failure in dogs due to atrioventricular valvular insufficiency (AVVI) or dilated cardiomyopathy (DCM). Vetmedin is indicated for use with concurrent therapy for congestive heart failure (e.g., furosemide, etc.) as appropriate on a case-by-case basis.

- ^a A dog with modified New York Heart Association (NYHA) Class II heart failure has fatigue, shortness of breath, coughing, etc. apparent when ordinary exercise is exceeded.
- ^b A dog with modified NYHA Class III heart failure is comfortable at rest, but exercise capacity is minimal.
- °A dog with modified NYHA Class IV heart failure has no capacity for exercise and disabling clinical signs are present even at rest.

Contraindications: Vetmedin should not be given in cases of hypertrophic cardiomyopathy, aortic stenosis, or any other clinical condition where an augmentation of cardiac output

Warnings: Only for use in dogs with clinical evidence of heart failure. At 3 and 5 times the recommended dosage, administered over a 6-month period of time, pimobendan caused an exaggerated hemodynamic response in the normal dog heart, which was associated with cardiac pathology.

Human Warnings: Not for use in humans. Keep this and all medications out of reach of children. Consult a physician in case of accidental ingestion by humans

Precautions: The safety of Vetmedin has not been established in dogs with asymptomatic heart disease or in heart failure caused by etiologies other than AVVI or DCM. The safe use of Vetmedin has not been evaluated in dogs younger than 6 months of age, dogs with congenital heart defects, dogs with diabetes mellitus or other serious metabolic diseases, dogs used for breeding, or pregnant or lactating bitches

Adverse Reactions: Clinical findings/adverse reactions were recorded in a 56-day field study of dogs with congestive heart failure (CHF) due to AVVI (256 dogs) or DCM (99 dogs). Dogs were treated with either Vetmedin (175 dogs) or the active control enalapril maleate (180 dogs). Dogs in both treatment groups received additional background cardiac therapy.

The Vetmedin group had the following prevalence (percent of dogs with at least one occurrence) of common adverse reactions/new clinical findings (not present in a dog prior to beginning study treatments): poor appetite (38%), lethargy (33%), diarrhea (30%), dyspnea (29%), azotemia (14%), weakness and ataxia (13%), pleural effusion (10%), syncope (9%), cough (7%) sudden death (6%), ascites (6%), and heart murmur (3%). Prevalence was similar in the active control group. The prevalence of renal failure was higher in the active control group (4%) compared to the Vetmedin group (1%).

Adverse reactions/new clinical findings were seen in both treatment groups and were potentially related to CHF, the therapy of CHF, or both. The following adverse reactions/new clinical findings are listed according to body system and are not in order of prevalence: CHF death, sudden death, chordae tendineae rupture, left atrial tear, arrhythmias overall, tachycardia, syncope, weak pulses, irregular pulses, increased pulmonary edema, dyspnea, increased respiratory rate, coughing, gagging, pleural effusion, ascites, hepatic congestion, decreased appetite, vomiting, diarrhea, melena, weight loss, lethargy, depression, weakness, collapse, shaking, trembling, ataxia, seizures, restlessness, agitation, pruritus, increased water consumption, increased urination, urinary accidents, azotemia, dehydration, abnormal serum electrolyte, protein, and glucose values, mild increases in serum hepatic enzyme levels, and mildly decreased platelet counts.

Following the 56-day masked field study, 137 dogs in the Vetmedin group were allowed to continue on Vetmedin in an open-label extended-use study without restrictions on concurrent therapy. The adverse reactions/new clinical findings in the extended-use study were consistent with those reported in the 56-day study, with the following exception: One dog in the extended-use study developed acute cholestatic liver failure after 140 days on Vetmedin and furosemide.

In foreign post-approval drug experience reporting, the following additional suspected adverse reactions were reported in dogs treated with a capsule formulation of pimobendan: hemorrhage, petechia, anemia, hyperactivity, excited behavior, erythema, rash, drooling, constipation, and diabetes mellitus

Effectiveness: In a double-masked, multi-site, 56-day field study, 355 dogs with modified NYHA Class II, III, or IV CHF due to AVVI or DCM were randomly assigned to either the active control (enalapril maleate) or the Vetmedin (pimobendan) treatment group. Of the 355 dogs, 52% were male and 48% were female; 72% were diagnosed with AVVI and 28% were diagnosed with DCM; 34% had Class II, 47% had Class III, and 19% had Class IV CHF. Dogs ranged in age and weight from 1 to 17 years and 3.3 to 191 lb, respectively. The most common breeds were mixed breed, Doberman Pinscher, Cocker Spaniel, Miniature/Toy Poodle, Maltese, Chihuahua, Miniature Schnauzer, Dachshund, and Cavalier King Charles Spaniel. The 180 dogs (130 AVVI, 50 DCM) in the active control group received enalapril maleate (0.5 mg/kg once or twice daily), and all but 2 received furosemide. Per protocol, all dogs with DCM in the active control group received digoxin. The 175 dogs (126 AVVI, 49 DCM) in the Vetmedin group received pimobendan (0.5 mg/kg/day divided into 2 portions that were not necessarily equal, and the portions were administered approximately 12 hours apart), and all but 4 received furosemide. Digoxin was optional for treating supraventricular tachyarrhythmia in either treatment group, as was the addition of a β-adrenergic blocker if digoxin was ineffective in controlling heart rate. After initial treatment at the clinic on Day 1, dog owners were to administer the assigned product and concurrent medications for up to 56±4 days.

The determination of effectiveness (treatment success) for each case was based on improvement in at least 2 of the 3 following primary variables: modified NYHA classification, pulmonary edema score by a masked veterinary radiologist, and the investigator's overall clinical effectiveness score (based on physical examination, radiography, electrocardiography, and clinical pathology). Attitude, pleural effusion, coughing, activity level, furosemide dosage change, cardiac size, body weight, survival, and owner observations were secondary evaluations contributing information supportive to product effectiveness and safety. Based on protocol compliance and individual case integrity, 265 cases (134 Vetmedin, 131 active control) were evaluated for treatment success on Day 29. At the end of the 56-day study, dogs in the Vetmedin group were enrolled in an unmasked field study to monitor safety under extended use, without restrictions on concurrent medications.

Vetmedin was used safely in dogs concurrently receiving furosemide, digoxin, enalapril, atenolol, spironolactone, nitroglycerin, hydralazine, diltiazem, antiparasitic products (including heartworm prevention), antibiotics (metronidazole, cephalexin, amoxicillin-clavulanate, fluoroquinolones), topical ophthalmic and otic products, famotidine, theophylline, levothyroxine sodium, diphenhydramine, hydrocodone, metoclopramide, and butorphanol, and in dogs on sodium-restricted diets.

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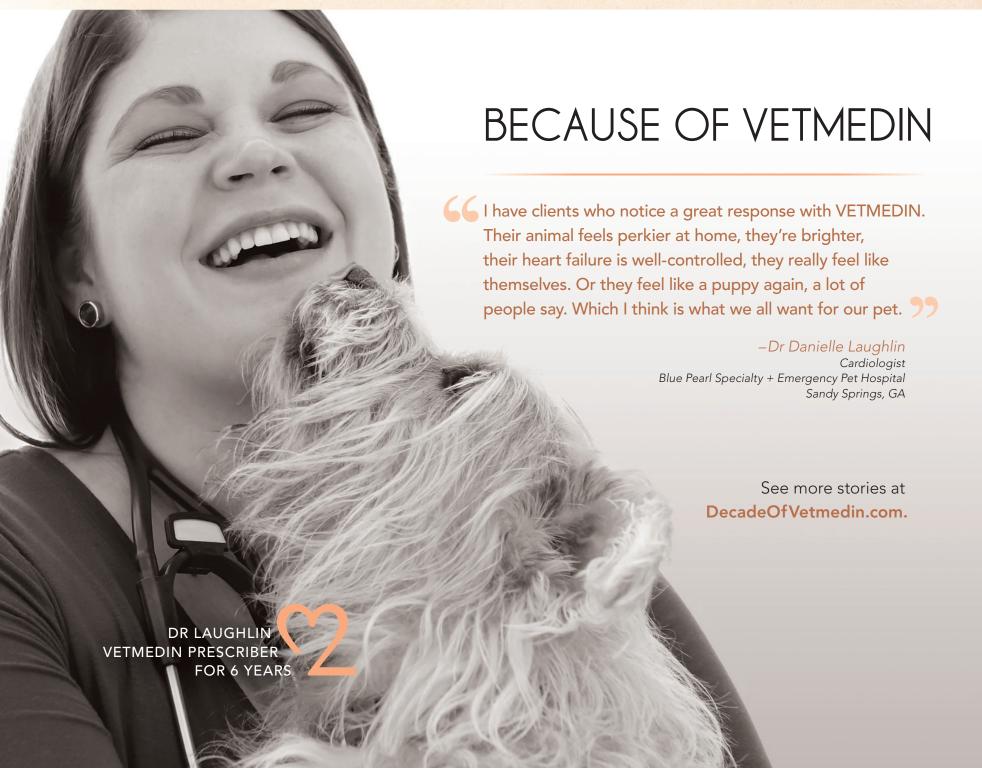
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Please see Brief Summary on page 26.



Transparency is key for the 2018 General Practice Hospital of the Year

You can see right through Northpointe Veterinary Hospital, and that's a good thing. Learn how this hospital's all-glass approach makes the team's workflow crystal clear. By Ashley Griffin

here's no hiding in this hospital! You see, transparency is key at Northpointe Veterinary Hospital in Yuba City, California.

"Our old doctor communication center used to be way in the back of the hospital, and now it's in the center of everything," says Steven Sanders, DVM, owner of this general practice and 24/7 emergency hospital. "Every-

one can see where everyone is—there's glass all over the hospital."

Add in high-quality finishes and a stellar floor plan, and it's easy to see why the judges dubbed Northpointe the clear winner of the 2018 dvm360 Hospital Design Competition's General Practice Hospital of the Year award.

Find out how Dr. Sanders and his team designed their new 9,419-square-

foot space so they could keep an eye on their patients and each other.

Go with the workflow

After outgrowing their old practice and finding the perfect site (off the highway—score!), Dr. Sanders didn't delay on getting input from his team. He collected all their nonnegotiables, and the list was not short. It included



Curb appeal: After 40-plus years, Northpointe Veterinary Hospital had totally outgrown its old space. "We made a decision to move into a larger facility and didn't have room to build out, so I found a location right off the highway, which is better for us with our emergency work," says Dr. Steven Sanders, owner of Northpointe. The 9,419-square-foot practice was designed with 45 parking spots, a loading and delivery area, biofiltration landscaping and outdoor patio yards, along with play and exercise yards and a surrounding 7-foot fence.



The Wright design: Northpointe's main lobby was designed to feel open, warm and safe for clients when they first arrive. A Frank Lloyd Wright-inspired high-vaulted entry, complete with a pendant fan, is a definite talking point. Benches and ottomans next to floor-to-ceiling windows provide flexible seating options to clients while they wait.

By the numbers:

Owner: Dr. Steve Sanders
Number of doctors: 12
Exam rooms: 8
Total cost: \$4,880,534

Cost per square foot: \$367.90 Square footage: 9,419 Structure type: Freestanding,

new

Architect: Richard Rauh, AIA, Rauhaus Freedenfeld &

Associates

Photographer: Larry Falke, Falke Photography



The doctor will see you now: "Our old doctor communication center was way in the back of the hospital and now it's in the center of everything," Dr. Sanders says. "Everyone can see where everyone is; there's glass all over the hospital." In addition to a 360-degree view of the hospital's various treatment functions, there's also a sliding glass pass-through into the pharmacy for additional communications.



Smell the difference: Northpointe's architect had a suggestion: trenchless kennels. So the team said goodbye to stinky drain holes and hello to epoxy floors and glass doors that are cleaned daily with a Kaivac machine. The Northpointe team loves the fact that their runs look and, more importantly, smell better.



Welcome to the traffic control center: With four separate workstations behind reception, team members can divide and conquer front desk duties as well as keep an eye on retail, exam rooms and the private access areas of the hospital. Mosaic tile lines the desk and "Bronzed Beacon" porcelain tile covers the floor.



Two-for-one: Office by day and emergency care reception by night, this dual-functioning space is strategically located near the front reception desk with discretionary access to and from inpatient areas. "The business office becomes a more protected area at night," Dr. Sanders says. With bulletproof glass and electronic door strike hardware, many safety features were incorporated to ensure the staff's protection after hours. "Special consideration was also given to the creation of a safe room to allow staff refuge and protection in the event of an armed break-in," architect Richard Rauh explains in the hospital's entry notebook.

more parking spots, more exam rooms, more runs and better workflow (top priority).

Designing a strategic layout was a game-changer for the team.

"Now we can stand in the doctor's office and see what's going on in isolation, ICU, treatment, surgery and the pharmacy," Dr. Sanders says. "If the technicians are just finishing up a catheter, the doctor in the office can see when the patient is ready for them."

You don't have to reinvent the wheel

From the start, Dr. Sanders knew he wanted to skip the fancy features. After all, he wasn't out to build the Taj Mahal of veterinary medicine.

"I wanted a building that was functional, so most of my efforts went into that goal and not so much the aesthetic design," he says.

Attack your project from every angle at the Hospital Design360 conference

Attend the Hospital Design 360 conference (formerly *Veterinary Economics* Hospital Design Conference) in Kansas City, Missouri, Aug. 15-17.

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

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

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NEWS | Hospital of the Year



Divide and conquer: Eight exam rooms are divided into two sections of the hospital so half can be securely closed off after normal daytime hours and the remaining rooms can be used for emergency care services. The rooms are sleek and functional, with a splash of vintage animal-themed artwork on the walls. A corner window makes the room feel more open and allows sunshine to lighten up exams.



 $\boldsymbol{\mathsf{A}}$ second view of the treatment area: The ICU is visible in the background.



A great escape: This specialty consultation room allows grieving clients to leave directly out the backdoor to a private courtyard. A wall-mounted exam table folds into a wall cabinet to save space and create a less clinical appearance. Plush sofa seating and plenty of natural light provide a more comfortable space for tough conversations.



Double the fun: This double table surgery room is fitted with 9-foot tempered storefront glass to maximize visibility, and it's located adjacent to treatment and radiology for traffic flow efficiency. Oxygen and gas scavenger distribution systems are built into the room's design, with a glass pass-through to the scrub and pack room. Ultraviolet light and HEPA filters in the air units and positive pressure laminar airflow in the surgery room help reduce contamination.



What a treat: Treatment is designed to be a centrally accessible control point for all of its related functions. Procedure lighting hangs above the semicircle of wet tables—four to be exact. Each station also comes equipped with its own wall-mounted anesthetic gas machine.



Location, location: The pharmacy is strategically located near the team's write-up area and both outpatient and inpatient hospital areas. A pass-through opens the space up for easy communication between the doctors and pharmacy staff.

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NEWS | Hospital of the Year



All by myself: The judges fell in love with Northpointe's isolation suite—it even has its own vestibule and entrance. "We moved isolation to the side of the hospital with a separate, lockable royer between the main treatment room and isolation and glass to provide visibility from outside the isolation area," Dr. Sanders says. "Now we can better control infections and mitigate zoonotic diseases." Negative pressure laminar airflow and 100 percent exhaust in isolation help prevent contamination outside the room.



Playtime: Northpointe designed three convertible exercise runs with controlled and convenient ingress to egress from the dog ward areas. "The exercise areas feature pet-friendly artificial turf with 7-foot-high architectural metal fencing and pilasters," the team writes in their entry notebook.



Bonus yard: In addition to the outdoor exercise areas, a grass obedience-training yard is located to the north of the main entry and is visible from the reception area. Talk about great entertainment for clients while they wait.

Dr. Sanders' inspiration? The hospitals that have filled the pages of *Veterinary Economics* and *dvm360* magazines before him. He studied the past 10 years of award-winning floor plans and made mental notes of what features he should "borrow." If you can tour veterinary hospitals in real life, that's even better, he says.

"Visit other clinics so you know what you want or don't want by the time you start," Dr. Sanders says. "You don't have to reinvent the wheel. You can benefit from their collective wisdom."

Pick the right partner

One tip Dr. Sanders cannot stress enough: Hire a veterinary architect!

"Having a team that had done a veterinary hospital build before and knew what kind of surfaces to use and what didn't work in a veterinary context gave me a head start," he says. "I just piggybacked on their design work."

It was Dr. Sanders' veterinary architect (Richard Rauh of Rauhaus Freedenfeld & Associates) who suggested one of Northpointe's more exciting new features: trenchless kennels. They said goodbye to stinky drain holes and hello to epoxy floors and glass doors that are sanitized daily with a special no-touch cleaning system (Kaivac). Of course, Dr. Sanders had to see it to believe in it, but now his team loves the fact that their runs look and, more importantly, smell better.

"So far so good," he says. "But you might want to call me in five years."

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



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Are rising veterinary salaries driving up the cost of care?

The AVMA econ team decided to find out—and discovered that mean salaries are actually dropping. So the answer to that question? No, they are not. By Fred Ouedraogo, PhD, and Michael Dicks, PhD

f you've ever wondered if veterinary hospitals have to charge ever-higher prices so they can keep paying their doctors, you're not alone. We wondered the same thing.

The number of pets in the U.S. continues to increase while visits to the veterinarian are down, and federal statistics show that veterinary prices have been rising faster than inflation for two decades. But what's actually causing those prices to rise? To find out, we examined the potential impact of multiple factors, including the demographics of today's veterinarians, veterinary income trends and practice ownership.

As a starting point to our analysis, we examined two decades' worth of veterinary compensation data and found that while mean incomes have been rising, when inflation is accounted for, they're actually dropping. Specifically, we found that the real mean income of U.S. veterinarians increased between 2000 and 2006 at an annual rate of 3 percent, but after that it fell drastically—from \$130,864 in 2006 to approximately \$112,000 in 2016 (Figure 1).

Population dynamics

One reason for this may be that younger veterinarians are entering the profession faster than more experienced veterinarians are retiring. Since newer veterinarians start out with an average salary below \$80,000 and are replacing veterinarians who usually earn more than \$130,000, we see lower income averages across the profession.

In addition, the gender profile for U.S. veterinarians is changing (Figure 2). In 2006, the mean age for men fell somewhere between 41 and 65. By 2016 this number had shifted dramatically, with the majority of male veterinarians above 56 years of age.

For women, the age distribution has moved in the opposite direction—and the percentage of new veterinarians who are female continues to grow.

Because women's mean income has historically been less than their male

counterparts, the increasing portion of women also puts downward pressure on mean incomes for the profession.

Age distribution and income

In all professions, a positive relationship exists between age and earnings, in that income increases rapidly with age until a person is about 45 to 50 years old. Income then slows and eventually declines. The resulting age-earning profile looks like an inverted U-shape.

Using year of graduation as a proxy for age, Figure 3 shows the impact of generational differences on the mean income of the entire profession. In 2000, our research shows, the majority of veterinarians were part of the silent or baby boom generation, with the former having the highest mean income. At that time, the mean income for the entire profession was around \$120,000.

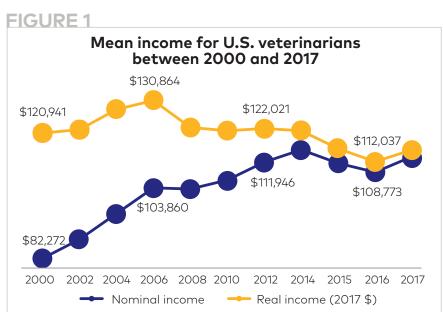
However, in 2006, the silents began to retire and their mean income fell, while the boomers became the largest group and reported the highest mean income. A decade later, in 2017, with the silents mostly retired, the boomers are now the ones retiring at a high rate and the Generation X group has reached its peak earning potential. Unfortunately, Generation X represents a small portion of the total population, and the lower-earning millennials are the largest group. Hence, the overall mean income has fallen below \$120,000.

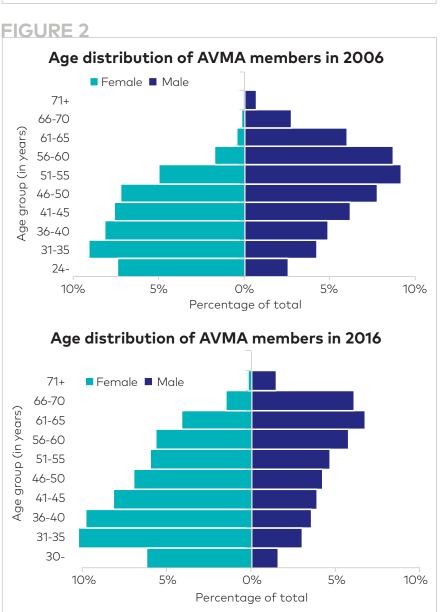
The age-earning profile continues to look like an inverted U, except it's now thin at the top and broad at the bottom.

A look at new grads

According to the Association of American Veterinary Medical Colleges (AAVMC), about 3,550 new graduates entered the veterinary profession each year from 2014 to 2017. In 2019, a total of 3,838 new veterinarians are predicted to graduate from AAVMC-member institutions. Meanwhile, an estimated 1,000 to 1,800 veterinarians retired from the veterinary profession each year during the same period.

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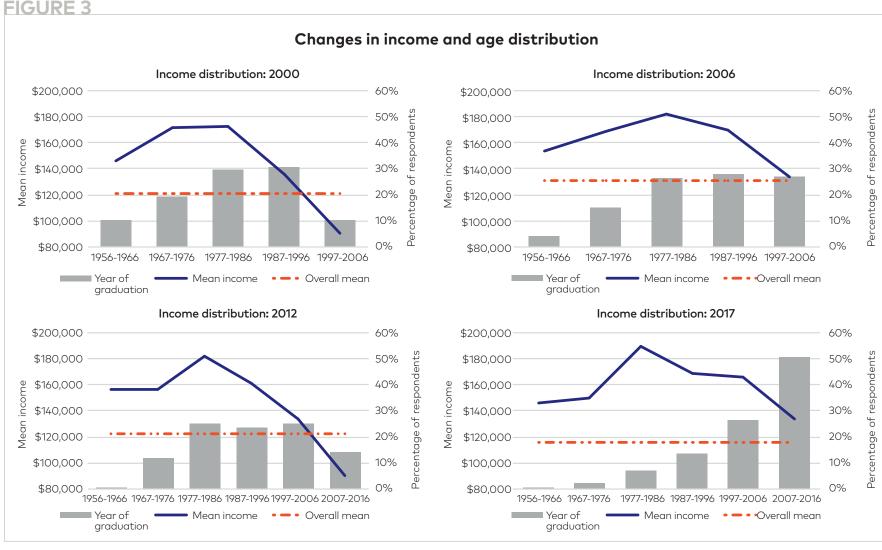
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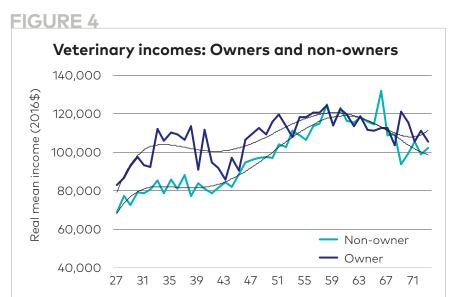


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Age

FIGURE 5 Distribution of veterinarians by practice ownership --- Associate 1990-1999 1970-1979 1980-1989 2000-2009 2010-2015 Year of graduation

narians entering the profession each year and only about 1,500 retiring, there is a possibility that the mean industry income will continue to decline as the number of new graduates outpaces the number of retirees. Looking ahead, the rate of retirement between 2020 and 2030 is projected to increase to more than 2,500 veterinarians each year, helping to close the gap between the number of graduates and retirees.

Changes in ownership

Another factor to consider is practice ownership. Past studies have found a strong positive relationship between practice ownership and professional

income (Figure 4). Statistics indicate that the likelihood of practice ownership increases with the number of years since graduation. More than 70 percent of veterinarians who graduated between 1970 and 1979 are currently practice owners. Compare that to veterinarians who graduated between 2010 and 2015 and the total drops to 6percent (Figure 5).

Even more important is that new graduates are waiting longer to purchase practices. If the proportion of associate veterinarians in the profession increases and the proportion of practice owners declines, overall mean income will most likely also go down.

The bottom line

Multiple factors contribute to real mean incomes for veterinarians, including changing demographics, a profession with fewer practice owners, and historical income trends. We now understand that real incomes have been declining for two decades. With veterinary prices rising faster than inflation in that same period, it seems clear that veterinary labor is *not* the source of the rising cost of care for the profession. For that, we'll have to keep looking.

Frederic Ouedraogo, PhD, is an analyst with the AVMA Economics Division. Michael Dicks, PhD, is director of the division.

Coming next month: What you didn't learn in vet school

Low starting salaries aren't new grads' only concern—the thought of minor surgery may make them break out in a cold sweat. In

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THE DILEMMA | Marc Rosenberg, VMD



No sanction Without Volument V

After an appearance before the state veterinary board, a larger issue in the profession is brought to light: If a board's composition doesn't reflect the professionals it oversees, can it fairly pass judgment?

eterinarian Leah Hicks and her wife, Jan Thompson, a fellow DVM, owned a suburban practice with dedicated clients and a strong commitment to local charitable pet organizations.

Of course, Drs. Hicks and Thompson knew they stood out to a degree in their community, but their personal lives rarely created any issues with their veterinary clients—until Leland Harkness and his dog Putty came through the door.

Putty, an intact male, was starting to have some defecation issues due to an enlarged prostate. Dr. Hicks explained the situation to the owner and recommended neutering the dog to shrink the prostate and resolve the clinical signs.

Mr. Harkness recoiled at the suggestion. He felt that neutering Putty would alter the dog's natural, God-given state. Dr. Hicks acknowledged Mr. Harkness' concern but reiterated that in this case, the surgery could alleviate the dog's discomfort and serve its future well-being. Mr. Harkness retorted that based on Dr. Hicks' lifestyle choices, he didn't think the veterinarian had much respect for his dog's God-given state.

Dr. Hicks asked Mr. Harkness what he meant by the remark.

"My words speak for themselves," he smugly replied.

The wounded veterinarian lost her temper and responded, "Well, my words speak for themselves too, so get the hell out of my clinic."

"If you're not going to treat my dog, you haven't heard the end of this!" Mr. Harkness yelled before slamming the door behind him.

Although Dr. Hicks regretted allowing a narrow-minded client get the best of her,

she eventually concluded that she wouldn't have done anything differently. His comment had attacked the core of who she was.

"Anyone who comes into my clinic and insults me and my personal life will be shown the door," she thought.

Day of reckoning

Mr. Harkness was true to his word. Four weeks later, a certified letter arrived addressed to Dr. Hicks. The state board of veterinary examiners was requesting her appearance before the board to respond to a complaint of professional misconduct.

When the appointed day arrived, Dr. Hicks made her appearance before the board, accompanied by her insurance carrier's designated attorney. The facts of the case were reviewed and the board discussion was leaning toward criticizing her for an "overreaction" when Dr. Hicks stepped in and asked to make a statement.

Dr. Hicks asked Mr. Harkness what he meant by the remark.

"My words speak for themselves," he replied.

The wounded veterinarian lost her temper and responded, "Well, my words speak for themselves too, so get the hell out of my clinic."



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THE DILEMMA | Marc Rosenberg, VMD



"With all due respect," she began, "the board I am sitting before is composed of six white male veterinarians and two members of the public. There has only been one woman on this board in the last 25 years, and no minority members or members of the LGBT community have ever served on it. I honestly don't see how this board can truly appreciate the impact of Mr. Harkness' statement against me at my workplace. My mildly profane response was not inappropriate in the face of his aggressive, bigoted statement."

The state board respectfully listened to Dr. Hicks' admonition. She was correct in that the veterinary board reflected neither diversity nor the demographics of the state's licensed veterinarians, 77 percent of whom were women.

The board determined that Dr. Hicks' actions and language

toward the client were ill-advised but could not be labeled as unprofessional conduct. They also noted that the board composition was determined by gubernatorial appointment, not the veterinary community. They advised her to redirect her demographic concerns to the governor's office.

Rosenberg's response

Who among us has not lost their composure during a stressful situation?

Dr. Hicks was deeply offended and lashed out. In a perfect world, she would have politely asked the client to leave her office. However, this is not a perfect world. The board was correct, and so was Dr. Hicks.

Many state boards are not representative in their composition of the veterinary professionals they oversee. It's important that we as a veterinary community bring this to the attention of our legislators.

Our political representatives need assistance in selecting and appointing diverse memberships for all state boards.

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



What's the dilemma?

Be sure to read more scenarios from "The Dilemma" series and tell us what you think of the fictional situations at dvm360.com/rosenberg.

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

Warnings:

Not for human use. Keep this and all drugs out of the reach of children. 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. Wash hands thoroughly with soap and water immediately after

Precautions:

Bravecto has not been shown to be effective for 12-weeks duration in puppies less than 6 months of age. Bravecto is not effective against Amblyomma americanum ticks beyond 8 weeks after dosing.

Adverse Reactions:

In a well-controlled U.S. field study, which included 294 dogs (224 dogs were administered Bravecto every 12 weeks and 70 dogs were administered an oral active control every 4 weeks and were provided with a tick collar); there were no serious adverse reactions. All potential adverse reactions were recorded in dogs treated with Bravecto over a 182-day period and in dogs treated with the active control over an 84-day period. The most frequently reported adverse reaction in dogs in the Bravecto and active control groups was vomiting.

Percentage of Dogs with Adverse Reactions in the Field Study

Adverse Reaction (AR)	Bravecto Group: Percentage of Dogs with the AR During the 182-Day Study (n=224 dogs)	Active Control Group: Percentage of Dogs with the AR During the 84-Day Study (n=70 dogs)	
Vomiting	7.1	14.3	
Decreased Appetite	6.7	0.0	
Diarrhea	4.9	2.9	
Lethargy	5.4	7.1	
Polydipsia	1.8	4.3	
Flatulence	1.3	0.0	

In a well-controlled laboratory dose confirmation study, one dog developed edema and hyperemia of the upper lips within one hour of receiving Bravecto. The edema improved progressively through the day and had resolved without medical intervention by the next morning.

For technical assistance or to report a suspected adverse drug reaction, 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.

How Supplied:

Bravecto is available in five strengths (112.5, 250, 500, 1000, and 1400 mg fluralaner per chew). Each chew is packaged individually into aluminum foil blister packs sealed with a peelable paper backed foil lid stock. Product may be packaged in 1, 2, or 4 chews per package.

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NADA 141-459, Approved by FDA



(fluralaner topical solution) for Dogs

BRIEF SUMMARY (For full Prescribing Information, see package insert)

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

Indications:

Bravecto kills adult fleas and is indicated for the treatment and prevention of flea infestations (*Ctenocepholides felis*) and the treatment and control of tick infestations [Ixodes scapularis (black-legged tick), Dermacentor variabilis (American dog tick), and Rhipicephalus sanguineus (brown dog tick)] for 12 weeks in dogs and puppies 6 months of age and older, and weighing 4.4 pounds or greater.

Bravecto is also indicated for the treatment and control of Amblyomma *americanum* (lone star tick) infestations for 8 weeks in dogs and puppies 6 months of age and older, and weighing 4.4 pounds or greater.

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. Use with caution in dogs with a history of seizures. Seizures have been reported in dogs receiving fluralaner, even in dogs without a history of seizures. Bravecto has not been shown to be effective for 12-weeks duration in puppies less than 6 months of age. Bravecto is not effective against *Amblyomma americanum* ticks beyond 8 weeks after dosing.

Adverse Reactions:

In a well-controlled U.S. field study, which included a total of 165 households and 321 treated dogs (221 with fluralaner and 100 with a topical active control), there were no serious adverse reactions.

Percentage of Dogs with Adverse Reactions in the Field Study

Adverse Reaction (AR)	Bravecto Group: Percent of Dogs with the AR During the 105-Day Study (n=221 dogs)	Control Group: Percent of Dogs with the AR During the 84-Day Study (n=100 dogs)
Vomiting	6.3%	6.0%
Alopecia	4.1%	2.0%
Diarrhea	2.7%	11.0%
Lethargy	2.7%	2.0%
Decreased Appetite	1.4%	0.0%
Moist Dermatitis/Rash	0.9%	0.0%

In the field study, two dogs treated with Bravecto with no prior history of seizures each experienced a seizure. One dog had two seizures a day apart about 18 days after its first dose. The dog was started on antiepileptic medication and had no additional seizures during the study. A second dog had a seizure 76 days after its first dose and 3 days after starting fluoxetine for separation anxiety. The fluoxetine was discontinued and the dog experienced no additional seizures during the study. One dog treated with Bravecto was observed by the owner to be off balance for about 30 minutes five days after its first dose and had no similar observations after the second dose. One dog with a history of seizures had a seizure the day after the second dose of the active control.

In two well-controlled laboratory dose confirmation studies, one dog developed mild to moderate redness, flaking, crusts/scabs and alopecia at the treatment site from Day 1 through 14 after application of Bravecto on Day 0, and one dog developed self-limiting generalized erythema (possible allergic reaction) one day after treatment with Bravecto.

In a European field study in cats, there were three reports of facial dermatitis in human's 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.

How Supplied:

Bravecto is available in five strengths for use in dogs (112.5, 250, 500, 1000, and 1400 mg fluralaner per tube). Each tube is packaged individually in a pouch. Product may be supplied in 1 or 2 tubes per carton.

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155586 R4

NADA 141-459, Approved by FDA



(fluralaner topical solution) for Cats

BRIEF SUMMARY (For full Prescribing Information, see package insert)

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

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 *Dermocentor variabilis* (American dog tick) infestations for 8 weeks in cats and kittens 6 months of age ànd older, and weighing 2.6 pounds or greater.

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. 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. 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. 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

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.

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159363 R3





Why pals can be a problem for departing doctors

Imagine you decide to leave your practice and your coworker wants to follow. If you aren't careful, you could end up in court.

hough I've covered employment contract law from a number of different points of view in previous columns, I recently realized that there's a key element I've missed thus far—one that's becoming increasingly relevant as practices (and their teams) continue

to grow: employee solicitation.

When veterinary practice owners consider noncompete agreements, they tend to think of language designed to protect them from departing doctors working in direct competition with them. However, what happens if a departing associate has

built strong personal relationships with veterinary team members at your practice? Won't you be crippled if she hires your former team members or simply convinces them to seek positions with her new employer?

The injury to a practice suffering this sort of exodus can be severe for

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LETTER OF THE LAW | Christopher J. Allen, DVM, JD

two reasons. First, every employee, from DVM to receptionist, has his or her own following among the clientele of any clinic. I know that at my main veterinary practice, many clients would be far more disappointed to see our morning receptionist quit than to learn that one of the doctors—including yours truly—had left the team.

Second, the simultaneous departure of multiple staff members would not go unnoticed by clients. They'd likely sense internal strife and perhaps want to transfer their records elsewhere once several familiar faces disappeared.

Practices can be particularly prone to this injury if a given client has already considered switching practices for any number of reasons interfere with our employment of any employee who worked for us within the 90 days prior to the associate leaving our employment.

Now, suppose you're an associate with 10 years of experience and you decide to quit your longtime employer to open or buy a hospital just outside the noncompete radius described elsewhere in your employment contract. After hearing of your plans, a technician who's worked with you for years says, "When you leave, Doc, I'm outta here too."

What happens next is critical. If you've always liked that tech, your first inclination would be to say, "That's great! You've got a job at my place—same money and everything!" However, that first inclination would be a big mistake. Why?

recruiting and training that technician. Courts recognize that reality and are inclined to discourage the practice of "employee raiding." It seems cheap and sneaky.

On the other hand, this is America. Shouldn't disenchanted workers be allowed to work wherever they discover a desirable open position? If a job becomes available with better pay or a more comfortable work environment, shouldn't they be free to avail themselves of that opportunity?

And there's still the matter of the written contractual promise that you, the departing doctor, made when you took the original job in the first place. Should that promise be discarded in the interest of providing freedom of employment to the technician?

So what are we all to do?

The example language above offers several hints as to how veterinarian employers and employees should conduct themselves when caught in the crosshairs of an employee nonsolicitation clause.

Practice owners and managers: When drafting an employee non-solicitation clause, don't simply prohibit the employment of former coworkers, as that won't be enforceable. Such language is considered to conflict with public policy by severely impacting the freedom of workers to choose their workplace.

Associates: If you intend to leave an employer, adopt a code of silence regarding details. It's nobody's business, and the more you talk about it, the more it smells like "solicitation talk." This silence applies to social media as well. If a former coworker applies for a job with you, consider having them sign a document stating that they sought you out and were never contacted in any way by you (or anyone acting on your behalf) with respect to the available position.

A thoughtfully considered approach on both sides—by both the practice owner and the departing doctor—will help keep everyone out of a painful legal mess when it comes time to part ways.

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.

Preventing a departing veterinarian from contacting and enticing former coworkers to follow her lead presents a number of legal issues that aren't included in client solicitation prohibitions.

(better location, more convenient hours, impressive curb appeal, and so on) or if the client's only preference for the practice stems from a fondness for Suzy at the front desk. Suzy's following one of the associates out the door could be all it takes to lose that client.

A closer look at the clause

Many associate employment contracts contain language dictating that a departing doctor may not "chase" or even "reach out" to her former employer's clients. These terms tend to be enforceable, though it depends on their reasonableness and the degree of difficulty an employer might have in proving a breach. But preventing a departing veterinarian from contacting and enticing former coworkers to follow her lead presents a number of legal issues that aren't included in client solicitation prohibitions.

Let's look at a typical employee nonsolicitation clause:

Associate agrees that for a period of two years after leaving employment with us, she will not directly or indirectly recruit, solicit, induce or

Look closely at your employment agreement, specifically where it defines the term solicit.

"Solicit" means any communication or advertising directed intentionally to specific individuals for the purpose of obtaining their employment (excluding mass advertising or mass employment listings).

Back to the scenario above: What communication is permitted when it's the coworker who comes to you for a job? The answer is far from clear, and the language must be scrupulously interpreted by any veterinarian who hopes to hire a coworker or former coworker.

Public policy counterpoint

Let's assume that when your old technician pal mentioned he wanted to work for you, you wisely didn't respond in any way—but you do end up hiring him after you leave.

Your former employer seeks a temporary restraining order in an effort to prevent your chum from joining your new clinic. The deciding judge faces this dilemma: On the one hand, your former employer spent significant time and energy





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Feeding that **empty feeling** ... and zombies

While Dr. Greenskin takes a mental break and binges on Netflix, a relief vet wows everyone in the clinic, including Dr. Codger. Is a practice shake-up in the offing?

at Dr. Codger's place. Ever since the doctors' not-so-pleasant exchange (see the March issue of *dvm360*), the team has had to make ends meet with one doc instead

of two. Did you figure Dr. Codger would reschedule at least a few appointments? Well, you figured wrong! This ol' boy has never backed down from an overfilled day. It's a wonder he ever hired a second doc-

tor to begin with. However, today is a bit different, with a relief veterinarian on board for a trial run.

Dr. Middles is poised and confident, walking into the clinic ready for business. He's not half-bad to

Jeremy Campfield, DVM | OLD SCHOOL, NEW SCHOOL

look at either, and a few of the female staff are feeling a little flustered. Dr. Middles has been practicing a fair bit longer than our tender Dr. Greenskin, but he's nowhere near as stubborn as dear old Doc Codger.

Meanwhile, back at home ...

Dr. Greenskin has been on a three-day binge of *The Walking Dead* with seemingly no end in sight. Thankfully, her therapist supports her taking some time to herself and checking out of work for a little while. Dr. Greenskin pauses the hordes of zombies for some much-needed sustenance.

As Cap'n Crunch overfills the bowl, she wonders how things are going at the clinic—or if she even

for the evening, there's a sense of a job well done that they haven't experienced in some time. Could Dr. Middles be the answer to all of their prayers? Even Dr. Codger is swooning and makes Dr. Middles promise to "stay in touch" as he leaves the clinic.

Scribbling in a pile of charts, alone in his office, Dr. Codger fights that nagging feeling of unmet duty. Try as he might, he can't fend it off anymore and he picks up the phone.

Back at home, Dr. Greenskin sees the number flash on her iPhone and dread sets in. As much as she wants to just turn up the volume of the screams and gunshots blasting from the television, she reluctantly pauses the show and answers with a hesitant "Hello?"

A further concern—how the heck is she going to save face in the eyes of the whole team?

cares. She's still smarting from being so harshly judged by her mentor, whom she has always respected. She can't help but feel betrayed. But those notions directly conflict with her desire to step up and eventually be the boss. How can she ever move forward as the clinic Cap'n if she can't even finish a day of work under a little fire?

A further concern—how the heck is she going to save face in the eyes of the whole team? She can only imagine what rumors are circulating about her brusque departure the other day. She knows she'll need to call Dr. Codger soon, but for now she's jumping back into the zombie apocalypse—and a 10 a.m. mimosa. Don't judge!

Meanwhile, back at the clinic ...

Dr. Middles has just rocked out his day, even squeezing in a couple of emergency procedures to finish out the afternoon. He's made the whole show appear effortless, with clients tripping over themselves in sheer ecstasy at Dr. Middles' medical acumen. Same-day flowers, treats and thank-you cards from overjoyed pet owners are pouring in the front door to honor the better-than-perfect service at the hospital today.

As the team buttons things down

Prepare for a plot twist

Codger: Hey there, Doctor! I wanted to check on you and make sure you're doing all right. I also wanted to apologize.

Greenskin: Um, well, wow ... that's very kind of you, Dr. Codger. You don't need to apologize.

Codger: That's baloney and you know it. I shouldn't have gotten in your way on that case. I wasn't being courteous or respectful, and I let things get out of hand. As long as I've been practicing, it's very hard for me to let go or to not get my way. It isn't fair to you, and I've been thinking a lot about the business sense you bring to the clinic. You also didn't do anything that was medically wrong, and I am very sorry I made you feel that you did.

Greenskin: I understand, Dr. Codger. I accept your apology. I guess I wish that some things were different—that the environment we work in would be more accommodating to all of us. We all want what's best for our patients, but the stresses we're under can sure make this job more difficult than it needs to be sometimes.

Codger: I'm not sure exactly what needs to change, but I'm open to suggestions. I don't want to talk your ear off right now. I want to give you your space. But we also need to have some idea of if and when you plan to come back to this crazy place we call a clinic.

Greenskin: I know, Doc. I shouldn't have left the way I did. I do want to come back, but I need a little more time.

Codger: Dr. Middles was great today as a relief vet. The whole place was buzzing! I think he might be considering moving into this area. I can ask him to come in on a more regular basis.

Greenskin: So you can give me another week off?

Codger: I suppose we can make that work. But do keep me posted, OK?

They finish the conversation cordially, and Dr. Greenskin utters a loud sigh as she hangs up. She's only partially relieved by Dr. Codger's apology, though she feels he was being sincere.

"One week?" she asks herself. She knows she actually needs more time. But she can't help feeling pressured—even threatened—knowing someone might be poised to take her job.

Well, no point in dwelling on all of that nonsense right this moment! She fetches a gallon of cookies 'n' cream from the freezer, presses play, and the zombie gore resumes.

Did Dr. Codger talk about the new relief vet to manipulate Dr. Greenskin into coming back sooner? Or was he just not thinking before speaking, as per usual? How will things turn out when Dr. Greenskin heads back to work? Will Dr. Codger be open to making some changes, and if so, will Dr. Greenskin be ready to make a big push to affect the types of changes she wants?

Find out next time in Old School, New School.

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



Caught up on the series?

If not, you can start from the beginning and binge the ups and downs of Dr. Greenskin and Dr. Codger in their clinic at dvm360.com/campfield.





(milbemycin oxime/praziquantel)



BROAD-SPECTRUM PARASITE PROTECTION

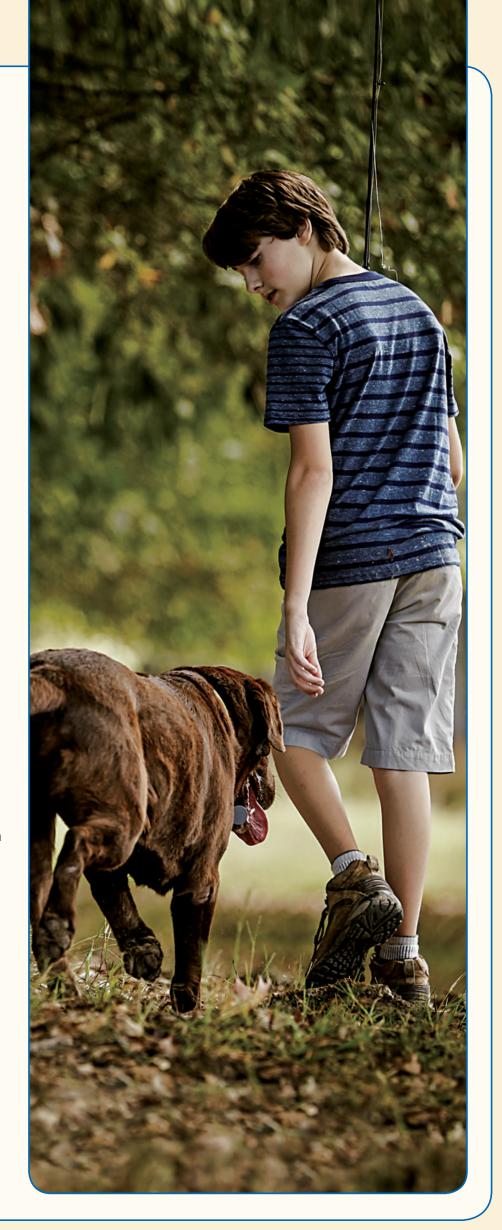
Interceptor Plus is a soft, flavored chewable tablet that contains milbemycin oxime to protect dogs against several common intestinal parasites and heartworm disease. The addition of praziquantel boosts coverage even more to include four species of tapeworms for broad-spectrum parasite control.

Prevents heartworm disease and treats and controls adult hookworm (A. caninum), roundworm, whipworm and tapeworm (T. pisiformis, E. multilocularis, E. granulosus and D. caninum) infections in dogs.

Safe for use in dogs and puppies 6 weeks of age and older and 2 lbs of weight or greater.

IMPORTANT SAFETY INFORMATION

Treatment with fewer than 6 monthly doses after the last exposure to mosquitoes may not provide complete heartworm prevention. Prior to administration of Interceptor Plus, dogs should be tested for existing heartworm infections. The safety of Interceptor Plus has not been evaluated in dogs used for breeding or in lactating females. The following adverse reactions have been reported in dogs after administration of milbemycin oxime or praziquantel: vomiting, diarrhea, depression/lethargy, ataxia, weight loss, convulsions, weakness, and salivation. For product label, including complete safety information, see page 49.







My world just isn't the same when I have ticks and fleas. Prescribe me Credelio® (lotilaner)— a small, tasty¹ chewable that acts fast².³ to protect puppies and dogs* like me all month long.

INDICATIONS

Credelio kills adult fleas and is indicated for the treatment of flea infestations (*Ctenocephalides felis*) and the treatment and control of tick infestations [*Amblyomma americanum* (lone star tick), *Dermacentor variabilis* (American dog tick), *Ixodes scapularis* (black-legged tick) and *Rhipicephalus sanguineus* (brown dog tick)] for one month in dogs and puppies 8 weeks of age and older, and weighing 4.4 pounds or greater.

IMPORTANT SAFETY INFORMATION

The safe use of Credelio in breeding, pregnant or lactating dogs has not been evaluated. Use with caution in dogs with a history of seizures. The most frequently reported adverse reactions are weight loss, elevated blood urea nitrogen, excessive urination, and diarrhea. For product information, including complete safety information, see page 48.

1. Karadzovska, D. et al. 2017. "A randomized, controlled field study to assess the efficacy and safety of lotilaner flavored chewable tablets (Credelio™) in eliminating fleas in client-owned dogs in the USA." Parasites & Vectors. 10:528. 2. Murphy, M. et al. 2017. "Laboratory evaluation of the speed of kill of lotilaner (Credelio™) against Ixodes ricinus ticks on dogs." Parasites & Vectors. 10:541. 3. Cavalleri, D. et al. 2017. "Assessment of the speed of flea kill of lotilaner (Credelio™) throughout the month following oral administration to dogs." Parasites & Vectors. 10:529.







^{*}Puppies and dogs 8 weeks of age and older and 4.4 pounds and greater.



When did everybody get so

What can we do in veterinary practice, and in the wider world along with it, to bring back some old-fashioned (but not outdated) rules of courtesy, civility and respect?

oliteness, courtesy and a good deal of self-restraint appear to be fading from our society. We are living in an increasingly uncivil society.

Here's an example: I was watching a basketball game on TV the other day when a bench-clearing fight broke out between the involved teams. I thought to myself, "I've never seen anything like that!" Well, clearly I don't watch enough sports, because an easy Google search found frequent brawls in baseball, basketball, football and soccer involving

you sit near a heated domino game, you might think all hell is about to break loose, but spirited competitors are generally kept in check by manners, courtesy and civility.

Whatever happened to those attitudes in the United States? When I was a youngster, certain behaviors were expected: Play fair. Don't call people names. Be tolerant. Don't make fun of people. In the game of life, accept the fact that sometimes you win, sometimes you lose. We might not agree, but we should respect one another.

We are exposed daily to more and more rude, insulting and aggressive behavior in political campaigns, in the press and on the internet. Incivility is contagious.

players, spectators, coaches and even officials. I think the last remaining bastion of competition without conflict is likely cricket or chess. And the increasing lack of sportsmanship isn't restricted to professional athletes but increasingly permeates high school and even children's sports. Here in Anguilla, where the national sports are bicycle and boat racing, physical squabbles are all but unheard of. If

We are exposed daily to more and more rude, insulting and aggressive behavior in political campaigns, in the press and on the internet. Incivility is contagious. Uncivil comments and attitudes seem to be repeated and spread more often than kind ones. The result is that mental and physical health suffer, worker attitudes and results deteriorate, and customer satisfaction declines.

How bad is it? In a recent installment of an annual survey on civility surrounding the 2016 election, 70 percent of Americans said they think incivility has reached "crisis levels."

Who's to blame?

So, who or what is responsible for the progression of these behaviors? First, it's important to recognize that acrimony is not new in our country. Blame politicians if you like. Blame the press. Blame social media. Blame changes in family structure and dynamics. There's plenty of blame to go around.

The truth is, when intolerance, rudeness and incivility are espoused by all of our public figures—political leaders, celebrities and athletes—it lends tacit endorsement to a shameful behavior, and the behavior is copied. Every day, it's something else. A social uproar. A political conflict. Online bullying. An insult here, a personal attack there.

Undoubtedly, the 2016 presidential campaign played a major part. Regardless of your personal politics, the campaign was uncivil and the divisiveness was obvious. We're a divided country. With all the incivility in the world, it's interesting that the

Credelio[™] (lotilaner)

For oral use in dogs

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

Before using Credelio, please consult the product insert, a summary of which follows:

Millar inclications:
CREDELIO kills adult fleas and is indicated for the treatment of flea infestations (Clenocephalides felis) and the treatment and control of tick infestations (Arnblyomma americanum (lone startick), Demracentor variabilis (American dog tick), incotes scapularis (black-legged tick) and Affiniciosphalus arguluieus (brown dog tick) for one month in dogs and puppies 8 weeks of age and older, and weighing 4.4 pounds or greater.

Dosage and Administration: CREDELIO is given orally once a month, at the minimum dosage of 9 mg/lb (20 mg/kg). See product insert for complete dosing and administration information.

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

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

Precautions:
The safe use of CREDELIO in breeding, pregnant or lactating dogs has not been evaluated. Use with caution in dogs with a history of seizures (see

Over the 90-day study period, all observations of potential adverse reactions were recorded. Reactions that occurred at an incidence of 1% or greater are presented in the following table.

Adverse Reaction (AR)	CREDELIO Group: Number (and Percent) of Dogs with the AR (n=198)	Active Control Group: Number (and Percent) of Dogs with the AR (n=86)	
Weight Loss	3 (1.5%)	2 (2.3%)	
Elevated Blood Urea Nitrogen (BUN)	2 (1.0%)*	0 (0.0%)	
Polyuria	2 (1.0%)*	0 (0.0%)	
Diarrhea	2 (1 0%)	2 (2.3%)	

Two geriatric dogs developed mildly elevated BUN (34 to 54 mg/dL; reference range; 5 to 31 mg/dL) during the study. One of these dogs also developed polyuria and a mildly elevated potassium (6.5 mEq/L); reference range; 3.6 to 5.5 mEq/L) and phosphorous (6.4 mg/dL; reference range; 2.5 to 6.0 mg/dL). The other dog also developed a mildly elevated creatinine (1.7 to 2.0 mg/dL; reference range; 3.5 to 1.6 mg/dL) and weight loss.

In addition, one dog experienced intermittent head tremors within 1.5 hours of administration of vaccines, an ear cleaning performed by the owner, and its first dose of CREDELIO. The head tremors resolved within 24 hours without treatment. The owner elected to withdraw the dog from the study. without treatment. The owner elected to withdraw the dog from the study. In an Australian field study, one dog with a history of seizures experienced seizure activity firemors and glazed eyes) six days after receiving CREDELIO. The dog recovered without treatment and completed the study. In the U.S. field study, two dogs with a history of seizures received CREDELIO and experienced no seizures throughout the study. In three well-controlled European field studies and one U.S. laboratory study, seven dogs experienced episodes of vomitting and four dogs experienced episodes of vomitting and four dogs experienced episodes of vomitting and four dogs experienced episodes of diarrhea between 6 hours and 3 days after receiving CREDELIO.

To report suspected adverse events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Elanco US, Inc. at 1–888-45-597. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1–888-FDA-VETS or http://www.fda.gov/AnimalVeterinary/SafetyHealth.

Effectiveness:

http://www.fda.gov/AnimalVeterinary/SafetyHealtn.

Effectiveness:
In well-controlled European laboratory studies, CREDELIO began to kill fleas four hours after administration or infestation, with greater than 99% of fleas killed within eight hours after administration or infestation for 35 days. In a well-controlled U.S. laboratory study, CREDELIO demonstrated 100% effectiveness against adult fleas 12 hours after administration or infestation for 35 days.

In a 90-day well-controlled U.S. field study conducted in households with existing flea infestations of varying severity, the effectiveness of CREDELIO against fleas on Days 30, 60 and 90 compared to baseline was 99.5%, 100% and 100%, respectively, Dosg with signs of flea allergy dematitis showed improvement in erythema, papules, scaling, alopecia, dermatitis pyodermatitis and puritus as a direct result of eliminating fleas.

In well-controlled laboratory studies, CREDELIO demonstrated > 97%.

pyroceniasus and praints did utreat result of emittinging lieads. In well-controlled laboratory sutclees, CREDELIO demonstrated > 97% effectiveness against Amblyomma americanum, Dermacentor variabilist Nucles scapulation and Philipicapidalus sanguinuss ticks 48 hours are administration or infestation for 30 days. In a well-controlled European laboratory study, CREDELIO started killing Nucles ricinus ticks within four hours after administration.

Storage Information: Store at 15-25°C (59 -77°F), excursions permitted between 5 to 40°C (41 to 104°F).

41 to 10-17.

Thow Supplied:
CREDELIO is available in five chewable tablet sizes for use in dogs:
56.25, 112.5, 225, 450, and 900 mg lotlaner. Each chewable tablet size is available in color-coded packages of 1 or 6 chewable tablets.

NADA #141-494, Approved by the FDA

Manufactured for: Elanco US Inc Greenfield, IN 46140 USA

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48 | April 2018 | dvm360 DAVID EVISON/SHUTTERSTOCK COM



Interceptor™ Plus

(milbemycin oxime/praziquantel)

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

Before using INTERCEPTOR PLUS, please consult the product insert, a summary of which follows:

Indications
INTERCEPTOR PLUS is indicated for the prevention of heartworm disease caused by Dirolliaria immitis, and for the treatment and control of adult roundworm (Toxocara canis, Toxascaria; leonina), adult hookworm (Ancylostoma caninum), adult whipworm (Trichuris vulpis), and adult tapeworm (Taenia pisiformis; Echinococcus multilocularis, Echinococcus granulosus, and Dipylidium caninum) infections in dogs and puppies two pounds of body weight or greater and six weeks of age and older.

Dosage and Administration
INTERCEPTOR PLUS should be administered orally, once every month, at the
minimum dosage of 0.23 mg/lb (0.5 mg/kg) milbemycin owine, and 2.28 mg/lb
(6 mg/kg) praziquantel. For heartown prevention, give once monthly for at least
6 months after exposure to mosquitoes (see EFFECTIVENESS).

See product insert for complete dosing and administration information

ContraindicationsThere are no known contraindications to the use of INTERCEPTOR PLUS.

Warnings Not for use in humans. Keep this and all drugs out of the reach of children.

Precautions
Treatment with fewer than 6 monthly doses after the last exposure to mosquitoes may not provide complete heartworm prevention (see EFFECTIVENESS).

Prior to administration of INTERCEPTOR PLUS, dogs should be tested for existing heartworm infections. At the discretion of the veterinarian, infected dogs should be treated to remove adult heartworms. INTERCEPTOR PLUS is not effective against adult *D. limmitis*.

Mild, transient hypersensitivity reactions, such as labored breathing, vomiting, hypersalivation, and lethargy, have been noted in some dogs treated with milbemycin oxime carrying a high number of circulating microfilariae. These reactions are presumably caused by release of protein from dead or dying microfilariae.

Do not use in puppies less than six weeks of age.

Do not use in dogs or puppies less than two pounds of body weight.

The safety of INTERCEPTOR PLUS has not been evaluated in dogs used for breeding or in lactating females. Studies have been performed with milbernycin oxime alone (see **ANIMAL SAFETY**).

Adverse Reactions
The following adverse reactions have been reported in dogs after administration of
milbergnic nowine or praziquantel: vomiting, diarrhea, depression/lethargy, ataxia,
anorexia, convulsions, weakness, and salivation.

To report suspected adverse drug events, contact Elanco US Inc. at 1-888-545-5973 or the FDA at 1-888-FDA-VETS.

For technical assistance call Elanco US Inc. at 1-888-545-5973.

For technical assistance call Elanco US Inc. at 1-885-845-5973.

Information for Owner or Person Treating Animal:

Echinococcus multilocularis and Echinococcus granulosus are tapeworms found in wild canids and domestic dogs. E multilocularis and E. granulosus are infect humans and cause serious disease (alwoat rydatid disease and hydatid disease, respectively). Owners of dogs living in areas where E. multilocularis or E. granulosus are entermic should be instructed on how to minimize their risk of exposure to these parasites, as well as their dog's risk of exposure. Although INTERCEPTOR PLUS was 100% effective in laboratory studies in dogs against E. multilocularis and E. granulosus, no studies have been conducted to show that the use of this product will decrease the incidence of alveolar hydatid disease in humans. Because the prepatent period for E. multilocularis may be as short as 26 days, dogs treated at the labeled monthly intervals may become reinliected and shed eggs between treatments.

Effectiveness
Heartworm Prevention:
In a well-controlled laboratory study, INTERCEPTOR PLUS was 100% effective induced heartworm infections when administered once monthly for onsecutive months. In well-controlled laboratory studies, neither one dose two consecutive doses of INTERCEPTOR PLUS provided 100% ctiveness against induced heartworm infections.

Intestinal Manatodes and Castodes Treatment and Control:
Elimination of the adult stage of hookevorm (Anoytostoria caninum), roundworm
(Trobucara canis, Tosacariis leonina), whipworm (Trichuris vulpis) and tapeworm
(Echinococcus multiliculairs, Echinococcus granulesus, Taenia pisifornis and
Dipylidium caninum) infections in dogs was demonstrated in welf-controlled
laboratory studies.

Palatability
In a field study of 115 dogs offered INTERCEPTOR PLUS, 108 dogs (94.0%)
accepted the product when offered from the hand as if a treat, 1 dog (0.9%)
accepted it from the bowl with food, 2 dogs (1.7%) accepted it when it was
placed in the dog's mouth, and 4 dogs (3.5%) refused it.

Storage Information
Store at room temperature, between 59° and 77°F (15-25°C).

How Supplied INTERCEPTOR PLUS is available in four strengths, formulated ac

Manufactured for: Elanco US Inc. Greenfield, IN 46140, USA Product of Japan

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NEWS | Emergency and critical care



Carly Czuba, DVM, center, undergoes ultrasound training in the EmERge program at BluePearl Veterinary Partners in Tampa, Florida.

BluePearl recruits ER docs via mentorship

Specialty hospital group aims to address shortage of emergency veterinarians for itself and profession.

luePearl Veterinary Partners has launched a program that offers intensive training, one-on-one mentoring and three years of employment to aspiring ER clinicians, according to a BluePearl release.

The program, called EmERge, is designed to help veterinarians learn to succeed in the emergency room, says Rita Hanel, DVM, DACVIM (internal medicine), DACVECC, BluePearl's vice president for clinical operations and recruiting, in the release. It's also aimed at developing more ER clinicians, both for BluePearl and the veterinary profession as a whole.

EmERge requires a three-year commitment and is open to recent veterinary school graduates as well as doctors who have worked in general practice or other veterinary fields who want to move into emergency medicine.

Participants are paid throughout their training, which works like this:

- > Participants start with a four-week boot camp at BluePearl's Tampa, Florida, hospital. The camp includes classroom instruction and labs and covers emergency medicine, communication and clinical leadership.
- > In the fifth week, EmERge members are sent to one of BluePearl's 65-plus

hospitals throughout the country, where individual mentors provide hands-on training.

- > In the 16th week, participants begin working full-time ER shifts. They continue to meet virtually through web-based seminars and rounds.
- > After the first full year in the program, participants are considered fully trained and are paid at the full market rate for their home hospitals.
- > Participants continue as ER doctors for two more years, for a total commitment of three years.

Seven people enrolled in the first EmERge class and now work in 24-hour BluePearl hospitals in Kentucky, Illinois, Oklahoma, Texas and Virginia.

EmERge is different from a small animal rotating internship, another program BluePearl offers, in important ways, representatives say. It's a three-year professional program focused solely on emergency medicine, and participants see substantial pay increases in their first year.

EmERge participants say mentorship is part of

what drew them to the program. "I'll be able to go out to clinical practice and have a mentor, someone I can look up to, so they can help direct me," says Brittany Parsons, DVM, a participant at Blue-Pearl in Virginia Beach.

Want to read ER vets' secret confessions? Turn to page 51.

Emergency opportunity

Don't miss the critical care sessions May 17 at Fetch dvm360 in Virginia Beach. Sessions cover urethral obstruction, pericardial effusion, GDV and more. To register, visit fetchdvm360 .com/vb.

medicine (



MEDICINE | Surgery

Surgery STAT:

Don't forget nutrition! Placing esophagostomy tubes in feline patients

This simple procedure ensures adequate nutrition for postsurgical feline veterinary patients—which can speed recovery time and minimize hospitalization.

By Marc Hirshenson, DVM, DACVS, American College of Veterinary Surgeons

dequate nutritional support is an essential, yet often overlooked, aspect of postsurgical care. Ill patients frequently present with decreased appetite, anorexia or weight loss related to their underlying condition. These signs may be related to pain or structural disease of the mouth (e.g. oral tumors) or generalized feelings of illness due to systemic disease (e.g. lymphoma, renal disease).

The negative effects of malnutrition are well-established and include decreased wound and fracture healing, decreased immune response and organ dysfunction. Enteral nutrition can hasten recovery time, decrease hospitalization stays and avoid unwanted sequelae such as hepatic lipidosis.

Esophagostomy tube placement in cats is a technically simple procedure, requiring minimal anesthetic time, and it carries a low risk of complications. Furthermore, esophagostomy tubes have a larger diameter than nasoesophageal or nasogastric tubes, allowing for administration of blenderized diets and medications. Compared to gastrostomy or jejunostomy tubes, esophagostomy tubes can be easily removed at any point.

Required equipment

Here's a list of everything you'll need to place an esophagostomy tube in a feline veterinary patient:

- > Surgical preparation materials: clippers, scrub supplies and sterile gloves
- > Scalpel blade
- > Curved hemostatic forceps
- > Red rubber, silicone or polyurethane tube (minimum 10-F; often greater than 14-F—depends on size of patient)
- > Tube adapter (i.e. "Christmas tree") and injection cap
- > Nylon suture
- > Bandage material.

Patient considerations

Esophagostomy tubes are placed under general anesthesia. Consider the anesthetic risk to the patient and perform appropriate preanesthetic diagnostics as necessary. Patients with esophageal disease are not candidates for esophagostomy tubes.

Patient preparation

Anesthetize the patient with endotracheal intubation. I personally prefer to place the patient in right lateral recumbency so I can place the esophagostomy tube on the left side of the cervical region; however,



Figure 1. Preparation of the surgical site.

DERMATOLOGY

M6

Got an itchy puppy? 6 burning questions for the pet's history

PARISITOLOGY

M7

Lyme emergency in a Lab! Or is it?

dvm360.com/medicine

Find interactive cases, expert answers to your clinical questions, journal summaries and much more.



Figure 2. Insert hemostatic forceps into the oral cavity, down to the cervical esophagus.



Figure 3. Open the hemostatic forceps tips to grasp the distal portion of the tube.



Figure 4. Pull the tube through the esophagus and out through the oral cavity.

the tube can be placed on the right side of the neck if necessary. Clip and prepare the region in standard fashion (Figure 1, p. M1).

Procedure

- 1. Premeasure the tube from the midcervical region to approximately the sixth to 10th rib space. Marking the tube with a marker can help you insert the tube to the appropriate level.
- **2.** Cut the end of the tube to remove a blind end, if present.
- **3.** Insert hemostatic forceps into the oral cavity, down to the cervical esophagus (Figure 2).
- **4.** Palpate the hemostatic forceps dorsal to the jugular vein and use the blade to incise through skin and esophagus over the tips of forceps.
- **5.** Open the hemostatic forceps tips to grasp the distal portion of the tube (Figure 3). Pull the tube through the esophagus and out through the oral cavity (Figure 4), leaving the proximal portion of the tube exiting from the cervical incision.
- 6. Redirect the tip of the tube back into the oral cavity and distally into the esophagus as far as possible, using your fingers or tips of the hemostat (Figures 5 and 6, p. M4). Gently pull on the distal end of the tube; you'll feel a "flip" of the tube into a caudal direction within the esophagus.
- **7.** Adjust tube placement to the predetermined length.
- **8.** Secure the tube using nylon suture with a finger trap pattern (Figure 7, p. M4) and cap the tube. Combine with a purse-string suture if that's your preference.
- **9.** Perform a lateral radiograph to ensure placement to the appropriate rib space and place a cervical bandage to cover the tube insertion site.

Postoperative care

Blenderized canned commercial diets can be administered through the tube once the patient is fully awake. Start feedings at 25% of caloric requirement per day (divided into four to six feedings per day) for the first day, increasing in 25% increments each day until the daily requirements are met. Many medications can also be administered if the tube is large enough in diameter. Administer a small volume of warm water (5 to 10 ml) before and after each feeding.

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FRONTLINE Gold for Dogs starts killing fleas in 30 minutes*.2



*When infested 48 hours after application.



FRONTLINE Gold for Dogs is approved for use in breeding, pregnant and lactating bitches.



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Easy-to-use applicator.



FRONTLINE Gold is marketed by Merial. Merial is now part of Boehringer Ingelheim.



FRONTLINE



 $\textbf{Figure 5.} \ \text{Redirect the tip of the tube back into the oral cavity and distally into the esophagus as far as possible using your fingers or tips of the hemostat.$

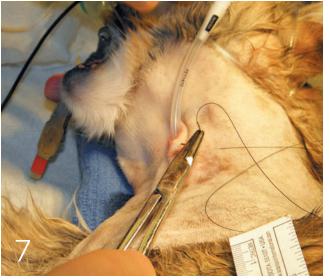


Figure 7. Secure the tube using nylon suture with a finger trap pattern.



Figure 6. Redirect the tip of the tube back into the oral cavity and distally into the esophagus as far as possible using your fingers or tips of the hemostat.

Complications

Complications are uncommon but include vomiting, stoma irritation and inflammation, clogging of the tube and infection.

Conclusion

Esophagostomy tubes are relatively simple to place and are essential for patients with prolonged inappetence. If necessary, they can be left in place for months. In my own experience, most owners find tube feedings and management uncomplicated.

Dr. Marc Hirshenson is a board-certified veterinary surgeon at Triangle Veterinary Referral Hospital in Durham, North Carolina. In his spare time, he enjoys running, swimming, relaxing on the beach and traveling with his wife.

Surgery STAT is a collaborative column between the American College of Veterinary Surgeons (ACVS) and dvm360 magazine. To locate a diplomate, visit ACVS's online directory at acvs.org.

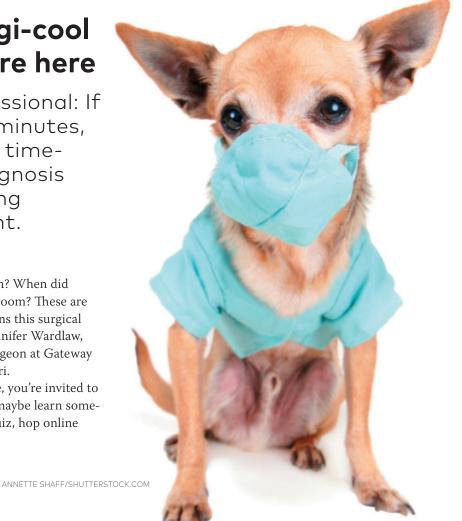
Learn some surgi-cool facts while you're here

Hey, veterinary professional: If you have a few free minutes, this quiz is minimally time-invasive, and the prognosis for learning something interesting is excellent.

By Sarah Mouton Dowdy

hy are surgical drapes green? When did music enter the operating room? These are just a couple of the questions this surgical quiz will cover, thanks to the help of Jennifer Wardlaw, DVM, MS, DACVS-SA, a concierge surgeon at Gateway Veterinary Surgery in St. Louis, Missouri.

Regardless of your role in the practice, you're invited to scrub in and test your knowledge, and maybe learn something new in the process. To take the quiz, hop online and go to dvm360.com/surgical-quiz.







APPLIES LIKE A LIQUID STAYS LIKE A GEL

Choose the otitis externa solution that goes AND stays
where you need it for increased contact
time at the source of infection.

INDICATION

OSURNIA is indicated for the treatment of otitis externa in dogs associated with susceptible strains of bacteria (*Staphylococcus pseudintermedius*) and yeast (*Malassezia pachydermatis*).

IMPORTANT SAFETY INFORMATION

OSURNIA® (florfenicol/terbinafine/betamethasone acetate) is for otic use only under veterinary supervision. Do not use in dogs with known tympanic perforation or a hypersensitivity to florfenicol, terbinafine or corticosteroids. Adverse reactions observed during clinical trials include vomiting, increased liver enzymes and transient loss of hearing. Please see Brief Summary of Full Prescribing Information on M6.



Itchy puppy? 6 questions for the history

For pruritic puppies, life's an itch. There may be key clues in its short life so far. By Kristi Reimer Fender

hen clients come in to your veterinary clinic with an itchy puppy, they're usually not happy—in fact just the opposite, says Allison Kirby, DVM, DACVD, of Animal Dermatology Clinic in Marina Del Rey, California. Most

puppy owners expect at least a few trouble-free years before health problems emerge, so this is messing with their expectations, Dr. Kirby says. Plus, housetraining is often a challenge because the puppy is so distracted it can't focus long enough to learn.

As such, it's important to empathize with the client's situation and establish trust and rapport. Once you've set a positive, compassionate tone, it's time to get down to business. Don't fall into the trap of thinking that just because this dog is a youngster the history can

be short and sweet. Many clues in the pup's short life can point to the cause of its itchiness. Some key questions to ask:

1. Where did the puppy come from? Shelters, breeders and rescues will sometimes have health notes on puppies that weren't necessarily provided to the owner upon adoption—it's worth a call to learn what you can.

2. Have any littermates had similar issues? Knowing this info, which can also be derived from the shelter, breeder, rescue and so on, can help the veterinary team learn about inherited conditions and environmental factors, Dr. Kirby says.

3. Has the puppy traveled at all, either before or after adoption? "In the area where I work I have seen numerous dogs flown in as young puppies from Africa, South America, Mexico, the Middle East and all throughout the United States," Dr. Kirby says. This may change your differential list when diagnosing the condition.

4. What's the puppy's lifestyle? With the growing popularity of doggie daycare, hiking and walking groups, as well as dog parks, dogs are more social than ever before, Dr. Kirby says. Rubbing noses (and other body parts) with canine buddies can expose dogs to fleas and other contagious diseases.

5. What itches? Ask the owner which areas of the body the puppy is itching or licking, how severe the pruritus is, and how the puppy has responded to any previous medications, Dr. Kirby advises.

6. How often is the puppy pooping—and what's the poop like?

Though it might not be an obvious question for a derm visit, it's extremely important to ask about gastrointestinal signs when you have a pruritic puppy, Dr. Kirby says. If the pup has any history of vomiting, diarrhea, decreased appetite, excess gas or mucus in the stool, there may be a food allergy at work.

Once you and your team have collected a good history, you can move on to more advanced diagnostics and formulating a treatment plan. A thorough workup, great client communication and education, and commitment on the part of the client can help get these puppies comfortable—and help their owners enjoy their furry family member again.

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(florfenicol • terbinafine • betamethasone acetate)

Otic ael

Antibacterial, antifungal, anti-inflammatory

For Otic Use in Dogs Only

Caution:

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

Before using this product, please consult the product insert, a summary of which follows:

Indication:

OSURNIA is indicated for the treatment of otitis externa in dogs associated with susceptible strains of bacteria (Staphylococcus pseudintermedius) and yeast (Malassezia pachydermatis).

Dosage and Administration:

OSURNIA should be administered in the clinic. Clean and dry the external ear canal before administering the initial dose of the product. Administer one dose (1 tube) per affected ear(s) and repeat administration in 7 days. Do not clean the ear canal for 45 days after the initial administration to allow contact of the gel with the ear canal. Cleaning the ear may affect product effectiveness (see **Effectiveness**). If alternative otic therapies are required it is recommended to clean the ear(s) before application. Open tube by twisting the soft tip. Insert the flexible tip into the affected external ear canal(s) and squeeze entire tube contents into the external ear canal(s). After application, gently massage the base of the ear to allow the gel to penetrate to the lower part of the ear canal.

See product insert for complete dosing and administration information

Contraindications:

Do not use in dogs with known tympanic perforation (see **Precautions**).

Do not use in dogs with a hypersensitivity to florfenicol, terbinafine or corticosteroids.

Warnings

Not for use in humans. Keep this and all medications out of reach of children. Consult a physician in case of accidental ingestion by humans. In case of accidental skin contact, wash area thoroughly with water. Avoid contact to the eyes.

Precautions:

Do not administer orally.

The use of OSURNIA in dogs with perforated tympanic membranes has not been evaluated. The integrity of the tympanic membrane should be confirmed before administering this product. Reevaluate the dog if hearing loss or signs of vestibular dysfunction are observed during treatment.

Use of topical otic corticosteroids has been associated with adrenocortical suppression and iatrogenic hyperadrenocorticism in dogs (see **Animal Safety**).

Use with caution in dogs with impaired hepatic function (see **Animal Safety and Adverse Reactions**).

The safe use of OSURNIA in dogs used for breeding purposes, during pregnancy, or in lactating bitches, has not been evaluated.

Adverse Reactions:

The following adverse reactions were reported during the course of a US field study for treatment of otitis externa in dogs treated with OSURNIA with 1 tube per affected ear(s) and repeated after 7 days:

Frequency of Adverse Reaction by Treatment

	,	
Adverse Reaction		
	OSURNIA (n=190)	Placebo (n=94)
Elevated Alkaline Phosphatase	15 (7.9%)	3 (3.2%)
Vomiting	7 (3.7%)	1 (1.1%)
Elevated AST, ALT, ALP*	2 (1.1%)	0 (0.0%)
Weight loss (>10% body weight)	1 (0.53%)	0 (0.0%)
Hearing Decrease/Loss	1 (0.53%)	1 (1.1%)

*Aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP). Two dogs with pre-existing elevations in ALP were reported to have an increase in liver enzymes (ALP, ALT and/or AST) at study exit. Subsequent clinical chemistries returned to pre-treatment levels in one dog, while no follow up was performed for the second dog.

Effectiveness:

Effectiveness was evaluated in 235 dogs with otitis externa. The study was a double-masked field study with a placebo control (vehicle without the active ingredients). One hundred and fifty-nine dogs were treated with OSURNIA and seventy-six dogs were treated with the placebo control. All dogs were evaluated for safety. Treatment (1 mL) was administered to the affected ear(s) and repeated 7 days later. Prior to the first administration, the ear(s) were cleaned with saline but not prior to the Day 7 administration. Six clinical signs associated with otitis externa were evaluated: pain, erythema, exudate, swelling, odor and ulceration. Total clinical scores were assigned for a dog based on the severity of each clinical sign on Days 0, 7, 14, 30 and 45. Success was determined by clinical improvement at Day 45. The success rates of the two groups were significantly different (p=0.0094); 64.78% of dogs administered OSURNIA were successfully treated, compared to 43.42% of the dogs in the placebo control group.

Storage Conditions:

OSURNIA should be stored under refrigerated conditions between 36° - 46° F (2° - 8° C). To facilitate comfort during administration, OSURNIA may be brought to room temperature and stored for up to three months

How Supplied:

OSURNIA is a gel in a single use tube with a flexible soft tip, supplied in cartons containing 2 or 20 tubes.

NADA # 141-437, Approved by FDA

Elanco, OSURNIA and the diagonal bar are trademarks owned or licensed by Eli Lilly and Company, its subsidiaries or affiliates.

Manufactured for:

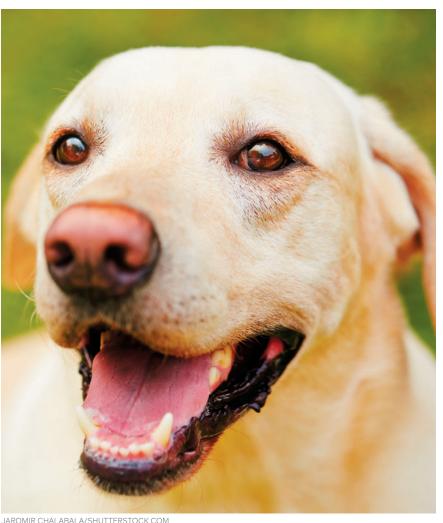
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Lyme emergency in a Lab! **Or is it?**

To treat a Lyme-positive result or not? One veterinary criticalist weighs in. By Sarah Wooten, DVM

happy, high-energy 5-year-old Labrador retriever presents to you for a wellness exam and you notice a small *Ixodes* species tick on the back of its neck. You remove the tick, perform a physical exam, give vaccines and run an in-clinic vectorborne disease screen as part of yearly wellness testing. The test comes back positive for Lyme disease. The dog, which used to live in Minnesota, is bouncing off the wall. You inform the owner of the results, and the owner tells you her son was diagnosed with Lyme disease. What do you do?

Where Fetch dvm360 educator and VETgirl co-founder Garret Pachtinger, VMD, DACVECC, lives and works-Veterinary Specialty and Emergency

Center in Levittown, Pennsylvania—40 to 60 percent of dogs test positive for Lyme disease. Of those positive dogs, 95 percent are subjectively judged to be completely asymptomatic.

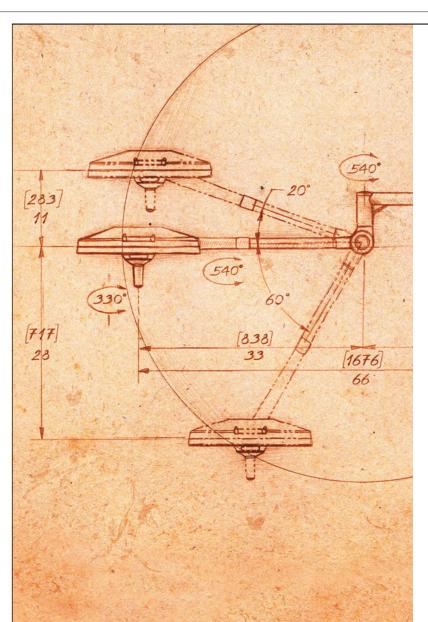
But what is asymptomatic, really? Dr. Pachtinger asks. Is it what we veterinarians perceive as asymptomatic, or what the client perceives? What about what the dog thinks? What if this is a happy Lab that would wag his tail even with a broken femur? Can we really judge this patient to be asymptomatic?

A twist on a classic story

The classic clinical signs of Lyme disease in dogs include shifting leg or transient lameness, a low-grade fever and anorexia in acute disease, Dr. Pachtinger says.

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MI-1000 arm



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MEDICINE | Parasitology

Development of fulminant glomerular nephropathy is possible and carries a poor prognosis. Labrador and golden retrievers seem to be predisposed to renal disease associated with Lyme. Neurological and cardiac manifestations are quite uncommon in small animal patients.

While you still want to run a complete blood count (CBC) and serum chemistry profile in dogs you suspect of having Lyme disease, Dr. Pachtinger says these lab tests will not give you the smoking gun answer except in cases with Lyme nephritis.

Remember: an *Ixodes* species tick must be attached for at least 48 hours to transmit disease. If the tick is not engorged, Dr. Pachtinger says the likelihood of disease transmission is very small.

Some risk factors for Lyme disease may include:

- > The presence of an engorged *Ixodes* species tick on a dog
- > A dog that lives or visits an area endemic for Lyme disease (visit capevet.org to find Lyme prevalence rates in the U.S. and Canada)
- > A positive result on an in-clinic vector-borne disease screen such as IDEXX's 4DX SNAP test
- > Clinical signs that correlate with Lyme disease.

The 4DX test takes three to five weeks after exposure to indicate seroconversion in dogs. If clients notice an engorged tick and want to test the

dog, advise them to wait four to six weeks. If they won't wait, tell them you can test today, but you'll be testing for possible previous exposure, not for the tick that was just removed, says Dr. Pachtinger. An additional confounding factor with the 4DX is that the assay will stay positive for a long time (think years) even after successful treatment.

Dr. Pachtinger asks clients if their dog has tested positive for Lyme disease before running the test and warns them that the value of the results will be questionable if the patient has tested positive in the past. A positive blue dot on asymptomatic dogs raises an important question—should we be screening asymptomatic dogs for Lyme disease at all?

There are pros and cons to screening the general population for Lyme, Dr. Pachtinger says. The advantages include providing seroprevalence data, providing information for human health risks and helping to diagnose Lyme disease in patients that have clinical signs, azotemia or protein-losing disease. The disadvantages include false positive results that lead to unnecessary owner distress and expense, overtreatment and development of resistance.

Dr. Pachtinger says that in endemic areas, it's important to screen for Lyme disease, but just because you get a positive result doesn't mean you should start treatment. He personally does not treat asymptomatic patients with a positive Lyme disease result on 4DX.

Doxy to the rescue

If a patient does display clinical signs, doxycycline is the most efficacious choice for treatment. Dr. Pachtinger's recommendation is to give 10 mg/kg orally once daily in the morning for four weeks. Four weeks of treatment have been recommended because the clinical manifestations of disease resemble those of late-stage disease in human patients, for whom relapses occur when treatment durations of less than 30 days are used. Clinical signs should be completely resolved within two to three days. Dr. Pachtinger does not administer analgesia (e.g. NSAIDs or tramadol) at the same time as starting doxycycline—he thinks that if you do, you can't definitively determine which drug is making the dog feel better.

Doxycycline is not without risks, Dr. Pachtinger reminds us—it can increase the likelihood of esophageal stricture. This is not a medication that owners should give with a treat after dinner right before going to bed, and it's important to counsel owners accordingly. Patients need to be up and moving for several hours after giving the drug. His recommendation? Give it at breakfast. Other drugs to consider include amoxicillin, cefovecin sodium, ceftriaxone and azithromycin, which have all be shown to be effective.

In human medicine, it's common to give a single dose of doxycycline at the time of the bite to prevent Lyme disease. In people, Lyme disease is usually caught much earlier because of the "bull's-eye" erythema migrans rash seen on the skin. Typically, the disease is not caught early enough in pets for a single dose to be effective, Dr. Pachtinger says. And even if it were, a single dose of doxycycline has not been shown to prevent Lyme disease in dogs.

Keeping an eye on Lyme

Monitoring, as you may have already guessed, is a challenge. The C6 quantitative Lyme test has questionable clinical value, says Dr. Pachtinger. And patients may have a positive result on a 4DX for years. Currently, the best way to monitor patients with Lyme disease is resolution of clinical signs, Dr. Pachtinger says.

In conclusion ...

No proteinuria = no treatment. If there is evidence of proteinuria (for example, 3+ protein on 1.025 urine-specific gravity), then Dr. Pachtinger would consider performing a urine protein:creatinine ratio and consider sending the dog home on four weeks of doxycycline. He recommends a recheck exam and urine dipstick in three months for follow-up. If there is a high C6 quant test, recheck in six months. Do not repeat the 4DX as a follow-up for Lyme disease.

What if the C6 doesn't decrease after six months? Does that mean you have treatment failure? Reexposure? It's hard to know, Dr. Pachtinger says, which is why this test is not definitive. We're back to using resolution of clinical signs as the best indicator of treatment success.

If you have a patient with acute-onset hindlimb lameness and the owner removes occasional ticks from the dog in a Lyme-endemic area, Dr. Pachtinger still recommends checking a urinalysis and treating if the dog is positive for proteinuria. A full workup including a CBC and serum chemistry profile—plus radiographs—is also recommended. If the dipstick is negative for proteinuria, then counsel the owner on treatment, making sure to go over risks. If the owner elects to treat, remember: If the lameness isn't 100 percent improved in two to three days, then it isn't Lyme disease. Also remember that treatment does not completely clear spirochetes from the blood.

If you send an engorged tick out for testing and it comes back positive, should you treat the dog? Dr. Pachtinger says that, academically, he still wouldn't treat asymptomatic dogs because doxycycline won't clear the infection or reduce the risk of them developing clinical signs.

Above all, the best prevention for Lyme disease in seropositive patients is aggressive tick prevention. Time for your ever-favorite tick-preventive talk!

Dr. Sarah Wooten graduated from UC Davis School of Veterinary Medicine in 2002. A member of the American Society of Veterinary Journalists, Dr. Wooten divides her professional time between small animal practice in Greeley, Colorado, public speaking on associate issues, leadership and client communication and writing.



Emergency medicine | NEWS

Top 10 confessions from emergency veterinarians

Emergency vets spilled their secrets at a recent International Veterinary Emergency and Critical Care Symposium.

hen the Vet Confessionals Project rolled through Dallas, Texas, for the International Veterinary Emergency and Critical Care Symposium, it gave attendees the opportunity to anonymously share their personal and professional secrets. Not surprisingly, ER and critical care veterinarians have a lot on their minds—here are our 10 favorites. For more confessions from the veterinary world, visit dvm360.com/confess.



People say
I'm unrealistic
wanting to do
critical care.

"After 15 years of ER work, I've learned more ways to creatively call people 'idiots' than any normal person should know."



"Reasons why I love overnight ER work:

- > I don't have to do bloodwork callbacks like my specialist/GP colleagues do for hours after their shifts—suckers!
- > I never see my boss
- > I get to wear PJs (scrubs)
 to work
- > I get to do all the fun stuff!"

"I'm a 2006 grad working a crazy ER schedule for 10 years. I really wish my DVM husband understood why I want to do an ECC residency at this point in my life, and stopped acting like it's going to kill him."

collecting letters! DACVECC or bust!" -----

"Sometimes I am secretly thankful when an owner declines surgery and euthanizes because I am too busy with other critical things ... am I horrible person?!?!"

"I diagnosed a client's dog with a huge liver mass and transfer to surgery. Her dog unfortunately died and now she sends me threatening emails once a month ... My remorse left after the harassment. Sucks!" I had to move 30
minutes away from
my ER clinic because too
many people 'thanked'
me for the euthanasias
I performed, and I didn't
remember them."

Sometimes
I'm afraid I'm
the 'dumb'
resident. Impostor
syndrome is real!"

"When people ask me, 'What's your favorite kind of pet?' I reply, 'A sick one, injured, one requiring emergency and critical care!' Now ask me what's my favorite type of client."

Stop by the Vet Confessionals booth at Fetch dvm360 in Virginia Beach, May 17-20, to read more secrets and add one of your own.



KUBAN_GIRL/SHUTTERSTOCK.COM dvm360 | April 2018 | 51



Luna, Auburn's smallest PDA patient.

Chihuahua makes history as Auburn's tiniest PDA patient

After a successful, albeit challenging, patent ductus arteriosus procedure, a 3-month-old, 2-lb Chihuahua is believed to be Auburn's smallest veterinary patient to undergo the surgery to date.

3-month-old longhaired Chihuahua weighing less than 2 pounds recently became Auburn College of Veterinary Medicine's smallest patient to undergo patent ductus arteriosus (PDA) surgery, according to a release from Auburn. After being referred from her Seattle-based primary care veterinarian, Luna, escorted by her owner, Jennifer Glover, came to Auburn.

Glover explains that Luna was diagnosed in January. "I initially noticed that she had a persistent, hacking cough," she says in the release. "This was at nine-and-a-half weeks old, so I took her to our vet and he detected a heart murmur."

While it occurs in about 3,000 newborn human babies each year in the United States, PDA is also common in dogs, the release states—clinicians and staff at Auburn's Wil-



The surgery team included, from left, anesthesia technician Madeline Murphy; fourth-year veterinary student Halle Thomasch; surgical resident Dr. Christopher Lee; soft tissue surgeon Dr. Harry Boothe; Soft Tissue Service sur-gery technician Haley Pritchard; and fourth-year veterinary student Andrea Hoover. Dr. Jacob Johnson, not pictured, served as

ford and Kate Bailey Small Animal Teaching Hospital treat a number of veterinary patients for it annually.

At 1.76 pounds, though, Luna became a special case and had to be treated differently to compensate for her size, explains Harry Boothe, DVM, MS, DACVS, a professor of soft tissue surgery who led the surgery team. "Surgery in small, young patients is a challenge from both an anesthetic and surgical perspective," he says in the release.

"Surgery in small, young patients is a challenge from both an anesthetic and surgical perspective." —Dr. Harry Booth

Luna's small size came with challenges the surgical team doesn't normally face. "Her thoracotomy necessitated placing her on a ventilator during the surgical procedure," Dr. Boothe explains. "Specific challenges included minimizing hypothermia, avoiding hypoglycemia and gaining access to the heart and abnormal vasculature."

Still, Dr. Booth says the procedure required very few special procedures or techniques despite Luna's size: "The exception [was] that a retractor that is typically used to separate the eyelids in horses was used to separate Luna's ribs during the procedure. A standard rib retractor would have been much too large to use in this situation. The overall procedure for performing the surgery was essentially the same as any other patent ductus arteriosus ligation surgery; the scale was just smaller."

Finding a team willing to perform the surgery in the first place was a challenge as well. "I met with a veterinary cardiologist in Seattle," Glover says, "but because Luna is so small, he was reluctant to do the procedure. We began researching veterinary hospitals where this procedure had been performed successfully and often, and we found Auburn."

Dr. Boothe says Luna was extremely small even compared to case studies nationally. Information cited in a large study of dogs with PDA (more than

500 cases) published in the *Journal of* Veterinary Internal Medicine in 2014 listed their smallest patient being 1.8 kg and their youngest patient being 3.3 months. In comparison, Luna weighed 0.8 kg and was 2.8 months old at the time of her surgery.

After a postsurgical veterinary examination and evaluation, Luna received a clean bill of health and was discharged February 12, the release states. The medical team recommended that Luna be evaluated by her primary veterinarian in six months but added that the tiny Chihuahua should recover completely from the condition and live a normal, healthy life.



Pet Owner Paths™ is a groundbreaking industry study that looks at the pet care decision making process of today's pet owners, which can impact veterinary-client relationships, job satisfaction, practice revenue and client compliance.

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PET OWNER PATHS

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2018 Help a Horse Day contest finds a new focus in adoption

The ASPCA is challenging equine rescues and sanctuaries to get creative when it comes to finding homes for unwanted horses.



he ASPCA's 2018 Help a
Horse Day contest is moving
in a new direction for its fifth
year by shifting its focus to adoption.

Research conducted by the organization in 2017 suggests that though there are more than enough people with the desire and resources necessary to take in the annual number of unwanted horses in the United States, equine rescues and sanctuaries aren't reaching them. This year's contest aims to help bridge the gap by encouraging nonprofit and nongovernmental organizations providing housing to unwanted horses to get creative when it comes to fundraising, promotion and adoption.

According to the contest website, each participating organization will be judged on its adoption campaign, the number of adoptions and adoption commitments its campaign garners, the amount of money the campaign raises for the organization, and the content and quality of a promotional adoption video created by the organization.

And while these equine organizations stand to benefit from the actions required to participate, \$110,000 in grant money (divided among 17 different prizes) is also up for grabs.

Registration is now open for the Help a Horse Day Contest, which will run from April 26 to June 30. Winners will be announced in August.

Euthanasia solution found in Smucker dog food products; manufacturer identifies source

Low levels of pentobarbital discovered in Gravy Train, Kibbles 'N Bits and other brands; company traces problem to beef fat.

he J.M. Smucker Co. in mid-February voluntarily withdrew shipments of Gravy Train, Kibbles 'N Bits, Ol' Roy and Skippy canned and wet dog foods after low levels of pentobarbital were confirmed to be present in samples of the product. The company has since traced the contamination to one ingredient—beef fat.

"Testing done by scientists at an independent, third-party microbiology laboratory indicates a single, minor ingredient (beef fat), used only in the four wet dog food brands, was

the source of the contamination," the company states in a media release. "Additionally, the ... laboratory tested the ingredient in which pentobarbital was found and confirms it was sourced from cattle and no other animal."

A preliminary evaluation by the FDA indicated that the low levels of pentobarbital present in the withdrawn products were unlikely to pose a health risk to pets. "However, pentobarbital should never be present in pet food and products containing any amount of pentobarbital are considered to be

adulterated," the agency states in a consumer advisory.

"This substance simply should not have been in our products," says Barry Dunaway, president of the Pet Food and Pet Snacks division, in the Smucker release. "Its presence at any level is not acceptable and is not up to our quality standards. We stopped production at our manufacturing facility that makes these product lines until we could obtain the ingredient from a new supplier, and we are no longer sourcing the ingredient from the original supplier."



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products



Diets, drugs, devices and other delights: Clinical products at VMX 2018

There was a lot for veterinary teams to get excited about on the expo floor in Orlando. Here's the dvm360 team's report. By Kristi Reimer Fender, News Channel Director

he VMX exhibit hall is a dazzling place. Amid the buzz and energy, a few launches stood out to us at dvm360. Here are the details.

Talk about a novel diet ...

To keep up with the ever-shifting needs of allergic pets, Blue Buffalo has launched Blue Natural Veterinary Diet NP Novel Protein Alligator for Dogs and Cats. Alligator is a novel protein not



typically associated with adverse food reactions, according to the company's nutrition experts. And did you know

it's farmed for food production? As fun as it is to think about the Blue Buffalo team heading out in the gator boat *Swamp People-style*, the reality is not quite so colorful—though it is important for pet health. "It's very important for us to control exactly what the alligators are being fed to eliminate allergens in the end product," says Bretaigne Jones, DVM, MS, of Blue Buffalo. *Read more at bluebuffalo.com/blue-vets*

Power to the protein

Speaking of diets, nutritionists at Purina think it's high time for veterinary medicine to heed the research pointing to phosphorus as the main culprit in chronic kidney disease—not protein. In fact, limiting protein in a cat with early-



stage kidney disease leads to loss of lean body mass, which only compromises that pet's health further, they say. Their answer? Purina Pro Plan Veterinary Diets NF Kidney Function diets, which are available in Early Care and Advanced Care formulations. Early Care contains restricted phosphorus, to help prevent secondary hyperparathyroidism, and moderate protein, which may help maintain lean body mass. Advanced Care is formulated with reduced protein to minimize the production of filtered nitrogenous waste products, which contribute to azotemia.

Read more at purina.com

Your very own online store

VitusVet founder Mark Olcott, DVM, MBA, saw a gap in the vet tech world—there was no digital tool allowing veterinarians to easily sell their own inventory rather than an online pharmacy's. So he built that feature into VitusVet, an app that initially set out to manage the transfer of electronic health records and



now does a whole lot more. In its latest feature, the app digitizes the pharmacy transaction between client and practice, and veterinarians can then make the product available for clients to pick up or ship it out for home delivery. Vitus-Vet takes 99 cents of each transaction that comes through the app.

Read more at vitusvet.com

Fast-acting critter control

Elanco Animal Health is the latest veterinary company to launch an isoxazoline product for dogs—and this one's super-speedy, reports indicate. Credelio



(lotilaner) is a monthly oral parasiticide that targets the nervous system receptors of ticks and fleas—not dogs. In studies, the company reports, Credelio killed 100 percent of fleas within 12 hours for the entire month, and the product started to kill ticks and fleas in just four hours. Credelio works fast because it's absorbed rapidly and achieves peak plasma levels quickly. In fact, when given with food, Credelio reaches peak blood levels within two hours of dosing, product representatives say.

Read more at elanco.us/products-services

Anesthesia for all

Banfield has made a comprehensive anesthesia toolkit—centering around Anesthesia and Analgesia for the Veterinary Practitioner: Canine and Feline, a set of updated guidelines and protocols—available to the entire veterinary profession. The project is the result of years of collaboration among Banfield veterinarians, anesthesiologists, research analysts and industry experts alike, representatives say, and it's intended to help every member of the veterinary team (whether they work for Banfield or not) deliver safe and



The Arthrex ACP system allows for rapid and efficient concentration of platelets and growth factors from autologous blood for use on soft-tissue injuries.

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ni1501.

Vet Sy
5-3740.

2018 Arthres, In



effective anesthesia. Resources include a medical quality standards program, job aids for each phase of anesthesia, an individualized anesthesia dosage calculator and a monitoring form to capture patient-specific needs.

Read more at banfield.com/anesthesia

An enlightened pee picture

IDEXX Laboratories has updated the software for its SediVue Dx Urine Sediment Analyzer, calling this phase Neural Network 3.0. (What's next—

will the machine start talking?) This update to the analyzer's algorithmic software is powered by a database of 70 million veterinary patient-generated images from more than a million tests run on the analyzer, company reps say,



enabling the system to better identify abnormalities with every patient result generated. Big data plus machine learning equals a better picture of the whole pee situation—and overall patient health—IDEXX tells us. OK, not in so many words. But you get the idea. Read more at idexx.com/sedivuedx

Peering into diagnostic paramaters

Axis-Q Lens is designed to provide a picture of diagnostic trends over the course of a veterinary patient's entire life. First, let's review: Axis-Q, for those unfamiliar, is a piece of software that connects a Henry Schein practice management system (AVImark or ImproMed) to in-house lab equipment (from any major manufacturer) so that test results are automatically input into the patient record and charged for on the client invoice. The Axis-Q Lens, a component of the product suite, displays diagnostic



results over time—those from inhouse equipment as well as reference labs—in a graphical format. It also overlays different parameters on the same display so practitioners can see how diagnostic trends relate to one another. If you switch reference labs or change up a point-of-care analyzer, results transfer easily, Henry Schein reps say—meaning that lifetime health picture stays intact.

Read more at hsveterinarysolutions.com

New oral *Bordetella* vaccine from Merial, now Boehringer Ingelheim

One practice owner involved in early trials thinks colleagues "will very much enjoy the intraoral administration ... with less mess, less sneeze and less struggling" with veterinary patients.

Paccines for veterinary product out in a single squeeze. And, Services, says intraoral delivery could



Oral Bordetella

accines for veterinary patients: Some of 'em go in through a needle; some you squirt up the nose. Then there's intraoral delivery, as in the Recombitek oral *Bordetella* vaccine from Merial, now part of Boehringer Ingelheim.

The vaccine is administered in a dog's buccal cavity, and Merial says studies suggest it offers dogs a "robust immune response after a single dose."

Frank Capella, co-owner of Village Veterinary Hospital in Canastota, New York, says he liked the results he saw with a blank vaccine using the pipette in more than 20 dogs.

"The pipette worked spectacularly," Dr. Capella says. "As good a delivery system as there is [for vaccines]."

The other alternative to standard vaccine injections has been intranasal delivery, which Dr. Capella says works well enough but can be a little messy. He says intranasal vaccines can require a little more restraint and sometimes result in an incomplete dose—it can be hard to get all the

product out in a single squeeze. And of course, sometimes dogs sneeze.

"If we've been unfortunate enough to do [the intranasal vaccine] in the exam room [with clients]," joked Dr. Capella, "the dog will do that sneezy blowback and half the people in the room end up vaccinated for *Bordetella*."

Boehringer Ingelheim's own Zach Mills, DVM, executive director of U.S. Pet Vet Veterinary Professional Services, says intraoral delivery could be a better experience: "For many dogs, oral delivery may mean a less stressful experience without the unpleasant sneeze backs of alternative vaccines delivered through the nose. The packaging's flip-top vial cap allows for easy opening by veterinary staff, and the safe, needle-free pipette simplifies the vaccination process while reducing risk of injury."

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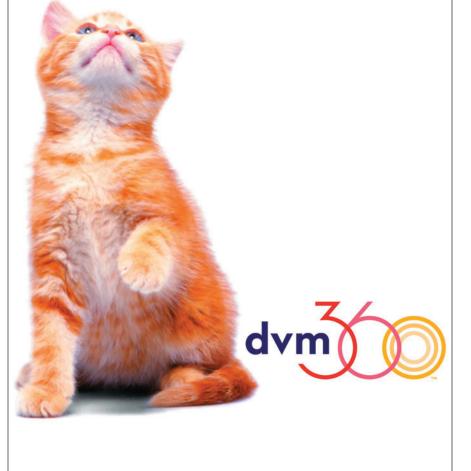


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May 17-20, 2018 Fetch dvm360 in Virginia Beach (800) 255-6864, ext. 6



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



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



Here are the CE opportunities coming in the next few months

April 13-15 American Academy of Veterinary Acupuncture Annual Meeting Santa Fe, NM

Santa Fe, NM (931) 438-0238 aava.org

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April 14-15
Applied Animal
Behavior Conference
Madison, WI
(608) 265-5206
apps.vetmed.wisc.edu/

April 14-15

cereg/

Feline Dentistry CE
Course and Dental
Extraction Wet Lab
Orlando, FL
(941) 276-9141
veterinarydentistry.net

April 16-19

VMC School of Veterinary Practice Management San Diego, CA (303) 674-8169 vmc-inc.com

April 18-21

Veterinary Management Series: Practice Essentials Lakewood, CO (800) 252-2242 aaha.org/vms

April 19-21

Cardiology and Oncology Washington, D.C. (888) 488-3882 veterinarydentistry.net

April 21-22

Canine Dentistry CE
Course and Dental
Extraction Wet Lab
Orlando, FL
(941) 276-9141

veterinarydentistry.net

April 21-22

For Technicians
Spring Weekend
Orlando, FL
(941) 276-9141
veterinarydentistry.net

Veterinary Dentistry

April 28-29

Oncology for the General Practitioner San Diego, CA (629) 640-9583 sdcvma.org

April 28-29

San Diego County VMA Conference San Diego, CA (629) 640-9583 sdcvma.org

April 29

It's What's Up Front That Counts! Hartford, CT (303) 674-8169 vmc-inc.com

May 2-5

Veterinary Management

Series: Culture, HR, and Marketing Lakewood, CO (800) 252-2242 aaha.org/vms

May 3

Principles of Veterinary Practice Management Portland, OR (303) 674-8169 vmc-inc.com

May 4-6

2018 Spring NYS
Veterinary Conference
Terrytown, NY
(607) 253-3201
www2.vet.cornell.edu/
education/continuingeducation

May 5-6

Veterinary Dental
Extraction Course
Weekend Dog &
Cat Wet Lab
Atlanta, GA
(941) 276-9141
veterinarydentistry.net

May 5-6

Veterinary Dentistry
For Technicians
Weekend Extravaganza
Atlanta, GA
(941) 276-9141
veterinarydentistry.net

May 7-8

Human Resources Boot Camp Minneapolis, MN (303) 674-8169 vmc-inc.com

May 10-11

Financial Boot Camp Chicago, IL (303) 674-8169 vmc-inc.com

May 11-13

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

May 13-17

Chicagoland Veterinary Conference Chicago, IL (877) 978-7084 chicagolandvc.com

May 15-17

Internal Medicine and Emergency Critical Care Savannah, GA (888) 488-3882 vetvacationce.com

May 31-June 1

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

June 2-3

Veterinary Dental
Extraction Course

Weekend Dog & Cat Wet Lab Los Angeles, CA (941) 276-9141 veterinarydentistry.net

June 2-3

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

June 3

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

June 3-5

Internal Medicine and Oncology Whitefish, MT (888) 488-3882 vetvacationce.com

June 8-10

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

June 9-10

Dental Extraction
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Handling a horse emergency ere the cock crowed—loudly

An equine veterinarian helps a mare recover from a retained placenta—and solves a decade-old mystery in the process.

r. Dustin McElwee could hardly hear what the man was saying on the phone. Emergency calls on a Sunday are hard enough to stomach, but when a rooster is crowing so loudly in the background that it sounds like it's sitting on the caller's shoulder—well, you know it's gonna be a long afternoon.

The fella on the phone said he owned the best roping mare in the world, but he didn't have a trailer. How did he even know the horse was good if he couldn't take it anywhere? Anyway ... the man reported that the mare had had a baby 12 hours earlier and the afterbirth was still hanging down from behind. This was the best Dustin could gather between 100-decibel rooster crows.

The man wanted Dustin to drive 95 miles to remove the afterbirth. The good doctor had another emergency an hour in the other direction, and driving that far to work on a mare that lived in a chicken coop was probably not going to be productive anyway. Dustin told the fella to borrow a trailer from a friend as soon as he could and head to our clinic in Lamesa. Texas.

The man continued rambling, but the rooster prohibited any further communication, so Dustin suggested the destitute mare owner seek refuge from the obnoxious bird. A few minutes later the story continued to unfold.

"The mare had a beautiful filly with two socks and a star," said the owner. "We don't know exactly when the baby was born, but it had to be sometime after 10 o'clock last night because Billy Bob checked on her and everything was OK. About 5 this morning, I went out and there she was, a beautiful baby girl with legs just like her mama's. But that confounded afterbirth was hanging out like a second tail on the mare, so I tied a brick to it and shooshed her off across the pasture.

"I figured the added weight of a brick would pull that thing on out, but it didn't," he continued. "So when she came back around after a good long jog, I tied a bigger brick to it and shooshed her off again—still nothing. On the third lap, I tied both bricks and a plow shank to it and shooshed her off for a third lap—still nothing. That's when I decided to call you. But it took me awhile to find your number, and I had to cook some spareribs because Otis is coming in from out of town this evening."

Billy Bob? Otis? Dustin was beginning to see the writing on the wall. At about 10 p.m. this guy was going to finally find a trailer and show up in Lamesa with a buddy named Billy Bob and a visitor named Otis. Sure enough, that's exactly what happened.

When it came out, the four generations of toothless observers went wild, like fans at a NASCAR race.

At 10:15, they pulled into the parking lot of the clinic. Dustin immediately noticed that the beautiful filly was, in fact, a colt. The group included four generations of roosterraising rednecks. Otis turned out to be the son, Billy Bob the grandson, and Billy Bob, of course, had brought his son. The trailer looked vaguely familiar to Dustin's keen eye. Only Dustin McElwee can remember every horse and every trailer he's ever seen.

"Looks like you found a trailer. Where'd you get it?" asked Dustin with a squinted eye aimed at the white CM trailer.

"I borrowed it from Dino, the fella who lives three lots down at the trailer park," replied rooster man.

Dustin went to work helping out the old swaybacked mare. He had just been to a CE conference that had detailed a new way to remove a retained placenta on a mare by going through the umbilical vein. He was excited to see if it would work and immediately set about going through the steps he had learned.

The questions came rapid-fire from the four

generation of chicken-roping horse raisers. They all asked questions at the same time, and before Dustin could answer, they were all asking another question. He just decided to ignore them and get the mare fixed up. The procedure worked out beautifully. The CE seminar had been worth the money—the placenta slid right out, even after having hauled two bricks and a plow shank around a five-acre pasture.

When it came out, the four generations of toothless observers went wild, like fans at a NASCAR race after their number 42 car won the Daytona. Dustin found himself celebrating with them. But still, something about that trailer bothered him. He told the guys he needed to keep the mare at the clinic for the night and flush her out again tomorrow. They all agreed that would be a good idea and they went merrily on their way back home.

At some point in the night Dustin remembered where he had seen that trailer. About 10 years ago, when he had first come to Lamesa, he had seen that trailer. It had belonged to me, and someone stole it when it was parked in front of the clinic. I reported it missing, but it was never seen again. Dustin got the serial number off of it and checked with the police. Sure enough, it was the one.

The check the rooster man wrote for services rendered that Sunday night bounced like a rubber ball. It took him 10 days to find another trailer to come get the mare since there was no way we were gonna let him have ours to take her back home.

Dino, of course, denied any knowledge of wrongdoing and swore he bought the trailer for \$200 from a guy named Steve.

In the end, everything turned out OK. The mare and baby lived, we got our trailer back after 10 years, and Dustin had a great story to tell for the rest of his life.

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

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 Toresson L, Steiner JM, Suchodolski JS, Spillman T. Oral cobalamin supplementation in dogs with chroni enteropathies and hypocobalaminemia. J Vet Intern Med 2016;30(1):101-107. doi: 10.1111/jvim.13797.

2. Toresson L, Steiner JM, Suchodolski JS, et al. Oral cobalamin supplementation in cats



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