

The tick control toolkit
A crash course in tick-borne disease for you and your team
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April 2017 | Volume 48 | Number 4 | dvm360.com

Short-nosed breeds are at higher health risk, study shows

Nationwide analysis finds that brachycephalics' problems extend far beyond breathing issues.

A study of 1.27 million dogs over a nine-year period shows that dogs with short noses, generally referred to as "brachycephalic," experience more health problems than other breeds, even in areas seemingly unrelated to airway anatomy, according to a white paper from Nationwide's pet health insurance group.

Researchers analyzed claims from Nationwide policyholders spanning the years 2007 to 2015. The study involved nearly 185,000 brachycephalic dogs and almost 1.1 million non-brachycephalic dogs. It did not take into account conditions already known to be common in short-nosed dogs, such as stenotic nares, elongated soft palate, tracheal hypoplasia and everted laryngeal sacculles.

"The question became: if you take out conditions known to be related to brachycephaly, are these

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Ain't life grand

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(ivermectin)

Find it all here.
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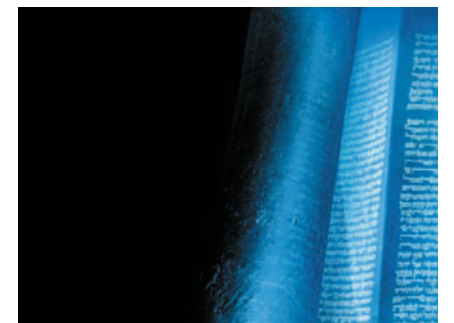


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quellin.
(carprofen)



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great deals



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quellin® is indicated for the relief of pain and inflammation associated with osteoarthritis and for the control of postoperative pain associated with soft tissue and orthopedic surgeries in dogs.

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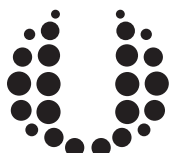
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UBM



Becky Turner Chapman bids farewell to vet media

Longtime vice president of UBM's veterinary group retired in mid-March.

Editor's note: *Becky Turner Chapman was my "top boss" when I started at this company fresh out of grad school in 2000. Things aren't the same without her in the corner office. Here is this amazing leader's goodbye to the profession.* —Kristi

Each and every day, UBM Americas, Veterinary—perhaps better known as dvm360.com, dvm360 magazine, the CVC conventions, *Vetted* and *Firstline*—speaks to the veterinary professionals who dedicate their careers to maximizing pet lifespans, and to the sales and marketing professionals whose companies develop products and services to do the same. Our job in fact is to connect the two, and we do that via brands fueled by our own stellar group of media and event professionals.

Today is no different, except for me. After 30 years with our group, and nearly 20 years as its leader, I have decided to retire. No easy task, I assure you, because who in their right mind would leave a market populated by passionate people and fueled by a big group hug of concern for the fuzzy kids who brighten our days and throw up on our carpets? (Lookin' at you, Marley and Pete.)

But while I do promise to take

Who in their right mind would leave a market populated by passionate people and fueled by a big group hug of concern for the fuzzy kids who brighten our days?



>>> A rare photo of the camera-shy Becky Turner Chapman by CVC photographer Greg Kindred.

great care of my own and aforementioned fuzzy kids, I am going to turn my attention to the family and friends who've been patiently waiting for me to stop working all the time. What they probably don't fully realize is that I have a big and wonderful work family too, and that that family is awfully hard to leave behind.

The good news is that I leave you—our readers, visitors, attendees, advertisers, exhibitors, and sponsors—in very good hands. The group of people bringing you all of those formidable brands is as strong, smart, innovative, and awesome as ever. And they've got a new leader to take them to great new heights: Christie McFall, who was most recently with VML in Kansas City, is the new Vice President and Managing Director for UBM Americas, Veterinary.

Veterinary medicine has always seemed like a small town to me, where everyone knows everyone else, and where no one ever really leaves. From my new and unfamiliar vantage point, I certainly hope that's true, and I wish you all the best. **dvm360**

—Becky Turner Chapman
becky@turnerchapman.com

quellin® (carprofen) soft chewable tablets

Non-steroidal anti-inflammatory drug
For oral use in dogs only

BRIEF SUMMARY:

Before using quellin soft chewable tablets, please consult the product insert, a summary of which follows:

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

PRODUCT DESCRIPTION: quellin (carprofen) is a non-steroidal anti-inflammatory drug (NSAID) of the propionic acid class that includes ibuprofen, naproxen, and ketoprofen.

INDICATIONS: quellin is indicated for the relief of pain and inflammation associated with osteoarthritis and for the control of postoperative pain associated with soft tissue and orthopedic surgeries in dogs.

CONTRAINDICATIONS: quellin should not be used in dogs exhibiting previous hypersensitivity to carprofen.

WARNINGS: Keep out of reach of children. Not for human use. Consult a physician in cases of accidental ingestion by humans. **For use in dogs only.** Do not use in cats. All dogs should undergo a thorough history and physical examination before initiation of NSAID therapy. Appropriate laboratory tests to establish hematological and serum biochemical baseline data prior to, and periodically during, administration of any NSAID should be considered.

PRECAUTIONS: As a class, NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. Effects may result from decreased prostaglandin production and inhibition of the enzyme cyclooxygenase which is responsible for the formation of prostaglandins from arachidonic acid. When NSAIDs inhibit prostaglandins that cause inflammation they may also inhibit those prostaglandins which maintain normal homeostatic function. These antiprostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease more often than in healthy patients. Carprofen is an NSAID, and as with others in that class, adverse reactions may occur with its use. The most frequently reported effects have been gastrointestinal signs. Events involving suspected renal, hematologic, and neurologic, dermatologic, and hepatic effects have also been reported. Concomitant use of carprofen with other anti-inflammatory drugs, such as other NSAIDs or corticosteroids, should be avoided because of the potential increase of adverse reactions, including gastrointestinal ulcerations and/or perforations. Carprofen is not recommended for use in dogs with bleeding disorders, as safety has not been established in dogs with these disorders. The safe use of carprofen in animals less than 6 weeks of age, pregnant dogs, dogs used for breeding purposes, or in lactating bitches has not been established.

ADVERSE REACTIONS:

During investigational studies for the caplet formulation with twice-daily administration of 1 mg/lb., no clinically significant adverse reactions were reported. Some clinical signs were observed during field studies which were similar for carprofen caplet and placebo treated dogs. Incidences were observed in both groups: vomiting (4%), diarrhea (4%), changes in appetite (3%), lethargy (1.4%), behavioral changes (1%), and constipation (0.3%).

For a copy of the Safety Data Sheet (SDS) or to report adverse reactions call Bayer Veterinary Services at 1-800-422-9874. For consumer questions call 1-800-255-6826.

ANADA 200-555 Approved by FDA

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December 2015

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Bumper crop of acorns in 2015 could increase Lyme risk in 2017

Environmental scientists explore the ecological connections between white-footed mice, black-legged ticks and four-footed friends.

Anyone who's lived around oak trees knows that acorns are more plentiful some years than others. When they rain down on your roof you'd swear you were in the midst of heavy artillery fire. What you may not know is that lots of acorns in 2015 can lead to more ticks—and tick-borne disease—in 2017.

The Cary Institute of Ecosystem Studies, a Millbrook, New York–based research group that studies the scientific connections among various environmental influences, has taken a hard look at the significance of acorn “mast” years (those seasons when acorn artillery shells pound your roof). What happens, they've found, is that during an acorn boom, white-footed mice feast on the bounty, stock their pantries and emerge the next spring hale and hearty—and explosive in population growth.

The mice, as it happens, are key players in infecting the notorious deer tick, *Ixodes scapularis*, with the agents that cause Lyme disease, babesiosis and anaplasmosis. Here's how ecologist Rick Ostfeld describes the process in an article on the Cary Institute website:

“The ticks that are emerging as larvae in August—just as the mice and chipmunks are reaching their population peaks—have tons of excellent



hosts to feed from. They survive well and they get infected with tick-borne pathogens. And that means that two years following a good acorn crop we see high abundance of infected ticks, which represents a risk of human exposure to tick-borne disease.”

Of course, as veterinarians and veterinary parasitologists know, human exposure means canine exposure as well.

The Cary Institute's predictions are based on 20 years of studies that have confirmed the relationship among acorn mast years, mouse outbreaks and the prevalence of ticks. “Mark your calendars,” they state—“2017 will likely be a bad year for Lyme disease.” **dvm360**

Don't miss ...

A package that's bursting with tick information, including:

- > Updates on tick-borne disease in cats and dogs
- > Tick communication tips and tools for the entire veterinary team
- > New ideas for client education, social media and much more

Flip to the insert after **page 18** to learn more.

Christie McFall joins UBM Americas as VP, managing director of Veterinary group

Succeeds Becky Turner Chapman, longtime head of UBM properties.

Christie McFall joined UBM Americas on February 27 as vice president and managing director of UBM's Veterinary business, including the CVC conventions; **dvm360.com**; the magazines **dvm360**, **Vetted** and **Firstline**; numerous e-newsletters, resource guides and books; and custom educational materials.

McFall previously served as managing director at advertising agency VML



Christie McFall

and, before that, as director of digital marketing at Meredith Corp.

“Christie has built a genuine connection with the veterinary and pet care industry we serve so proudly,”

says Tom Ehardt, executive vice president and senior managing director of Life Sciences in UBM Americas, in a UBM release. “Plus, her innovative exposure in marketing will help us continue to evolve and improve our products for customers.”

McFall succeeds Becky Turner Chapman, a long-time industry leader who is retiring after 20-plus years leading the group. **dvm360**

Reliable heartworm treatment. Now with reliable availability.

NEW from Zoetis—**DIROBAN™** (melarsomine dihydrochloride)

A heartworm positive diagnosis is serious business. Treatment can be scary for the client, traumatic for the pet and stressful for you and your staff. Having dependable access to an FDA-approved adulticide now means one less thing for you to worry about.

Speak with your Zoetis representative to learn more and visit treatwithDiroban.com for pet owner tools.

 **DIROBAN™**
(melarsomine dihydrochloride)



IMPORTANT SAFETY INFORMATION: DIROBAN is for use in dogs only. Do not use in dogs with very severe (Class 4) heartworm disease. Avoid human exposure. Consult a physician in cases of accidental human exposure by any route. **DIROBAN should be administered by deep intramuscular injection in the lumbar (epaxial) muscles (L₃ – L₅) ONLY. DO NOT USE IN ANY OTHER MUSCLE GROUP. DO NOT USE INTRAVENOUSLY.** Care should be taken to avoid superficial injection or leakage. Safety for use in breeding, pregnant or lactating animals has not been determined. Common side effects include injection site irritation (accompanied by pain, swelling, tenderness and reluctance to move), coughing/gagging, depression/lethargy, anorexia/inappetence, fever, lung congestion and vomiting. All patients should be monitored during treatment and for up to 24 hours after the last injection. See Brief Summary of Prescribing Information for additional safety information and precautions on page 08.

Brief Summary of Prescribing Information

DIROBAN™
Canine Heartworm Treatment

Sterile Powder for Injection

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

WARNING

DIROBAN should be administered by deep intramuscular injection
ONLY in the epaxial (lumbar) muscles (L₃ - L₅).
DO NOT USE IN ANY OTHER MUSCLE GROUP. DO NOT USE INTRAVENOUSLY.
Care should be taken to avoid superficial injection or leakage (see SAFETY).

INDICATIONS

DIROBAN Sterile Powder for Injection is indicated for the treatment of stabilized Class 1^a, 2^b, and 3^c heartworm disease caused by immature (4 month-old, stage L₅) to mature adult infections of *Dirofilaria immitis* in dogs.

Heartworm Disease Classification: The following parameters were used to classify the dogs in the clinical field trials for DIROBAN. Other parameters may be considered. As a general rule, conservative treatment should be employed since heartworm disease is serious and potentially fatal. If there is evidence of a high worm burden, patients should be categorized as Class 3.

^a Class 1: Patients in this category are characterized as having asymptomatic to mild heartworm disease. No radiographic signs or signs of anemia are evident. Patients with mild disease may have subjective signs such as a general loss of condition, fatigue on exercise, or occasional cough; however, no objective radiographic or other abnormal laboratory parameters will be present.

^b Class 2: Patients in this category are characterized as having moderate heartworm disease. Radiographic signs or signs of anemia [Packed Cell Volume (PCV) less than 30% but greater than 20%, or other hematologic parameters below normal] are evident. Mild proteinuria (2+) may be present. Radiographic signs may include right ventricular enlargement, slight pulmonary artery enlargement, or circumscribed perivascular densities plus mixed alveolar/interstitial lesions. Patients may be free of subjective clinical signs or may have a general loss of condition, fatigue on exercise, or occasional cough. If necessary, patients should be stabilized prior to treatment.

^c Class 3: Patients in this category are characterized as having severe heartworm disease. These patients have a guarded prognosis. Subjective signs of disease may include cardiac cachexia (wasting), constant fatigue, persistent cough, dyspnea, or other signs associated with right heart failure such as ascites and/or jugular pulse. Radiographic signs may include right ventricular enlargement or right ventricular plus right atrial enlargement, severe pulmonary artery enlargement, circumscribed to chronic mixed patterns and diffuse patterns of pulmonary densities or radiographic signs of thromboembolism. Signs of significant anemia (PCV <20% or other hematologic abnormalities) may be present. Proteinuria (> 2+) may be present. Patients may have only moderate clinical signs and significant laboratory or radiographic alterations or they may have significant clinical signs with only moderate laboratory and radiographic signs and be categorized as Class 3. Patients in Class 3 should be stabilized prior to treatment and then administered the alternate dosing regime (see **PRECAUTIONS and DOSAGE AND ADMINISTRATION**).

CONTRAINDICATIONS

DIROBAN is contraindicated in dogs with very severe (Class 4) heartworm disease. Patients in this category have Caval Syndrome (*D. immitis* present in the venae cavae and right atrium).

WARNINGS

(See boxed Warning.) For use in dogs only. Safety for use in breeding animals and lactating or pregnant bitches has not been determined.

HUMAN WARNINGS

Keep this and all medications out of the reach of children. Avoid human exposure. Wash hands thoroughly after use or wear gloves. Potentially irritating to eyes. Rinse eyes with copious amounts of water if exposed. Consult a physician in cases of accidental exposure by any route (dermal, oral, or by injection).

The Safety Data Sheet (SDS) contains more detailed occupational safety information. To report adverse effects, obtain a SDS or for assistance, contact Zoetis Inc. at 1-888-963-8471.

PRECAUTIONS

General: All dogs with heartworm disease are at risk for post-treatment pulmonary thromboembolism (death of worms which may result in fever, weakness, and coughing), though dogs with severe pulmonary arterial disease have an increased risk and may exhibit more severe signs (dyspnea, hemoptysis, right heart failure and possibly death). Dogs should be restricted from light to heavy exercise post-treatment depending on the severity of their heartworm disease.

Studies in healthy (heartworm negative) dogs indicate that adverse reactions may occur after the second injection in the series even if no problems were encountered with the first injection. All patients should be closely monitored during treatment and for up to 24 hours after the last injection.

Special Considerations for Class 3 dogs: Following stabilization, severely ill (Class 3) dogs should be treated according to the alternate dosing regime in an attempt to decrease post-treatment mortality associated with thromboembolism (see **DOSAGE AND ADMINISTRATION**). Post-treatment mortality due to thromboembolism and/or progression of the underlying disease may occur in 10 to 20% of the Class 3 patients treated with DIROBAN (see **Mortality**). Hospitalization post-treatment and strict exercise restriction are recommended. Other supportive therapies should be considered on a case-by-case basis.

If the alternate dosing regime is used, expect increased injection site reactions on the side receiving the second injection since the skeletal muscles at the first injection site may not have fully recovered (healed). If persistent swelling is present at 1 month, the second injections may be delayed for several weeks up to 1 month.

Special Considerations for Older Dogs: In clinical field trials, dogs 8 years or older experienced more post-treatment depression/lethargy, anorexia/inappetence, and vomiting than younger dogs.

ADVERSE REACTIONS (SIDE EFFECTS)

Injection Sites: At the recommended dosage in clinical field trials, significant irritation was observed at the intramuscular injection sites, accompanied by pain, swelling, tenderness, and reluctance to move. Approximately 30% of treated dogs experienced some kind of reaction at the injection site(s). Though injection site reactions were generally mild to moderate in severity and recovery occurred in 1 week to 1 month, severe reactions did occur (< 1.0%), so care should be taken to avoid superficial or subcutaneous injection and leakage. Firm nodules can persist indefinitely.

Other Reactions: Coughing/gagging, depression/lethargy, anorexia/inappetence, fever, lung congestion, and vomiting were the most common reactions observed in dogs treated with melarsomine dihydrochloride. Hypersalivation and panting occurred rarely in clinical trials (1.9% and 1.6%, respectively); however, these signs may occur within 30 minutes of injection and may be severe. One dog vomited after each injection of melarsomine dihydrochloride, despite pretreatment with anti-emetics. All adverse reactions resolved with time or treatment with the exception of a limited number of injection site reactions (persistent nodules, (see Table: **Average Onset Time and Duration (with Ranges) of the Most Common Reactions in Clinical Trials**) and a low number of post-treatment deaths (see **Mortality**).

Prevalence of Clinical Observations/Adverse Reactions Reported in Clinical Field Trials: The following table enumerates adverse events that occurred in 1.5% or more of dogs with Class 1, 2, and 3 heartworm disease treated with melarsomine dihydrochloride in clinical field trials. Comparison is made with the same adverse events reported in dogs treated with placebo. Some of the following clinical observations/adverse reactions seen in dogs treated with melarsomine dihydrochloride may be directly attributable to the drug or they may be secondary to worm death and/or the underlying heartworm disease process.

Prevalence of Clinical Observation/Adverse Reactions Reported in Clinical Field Trials		
Clinical Observation/ Adverse Reaction	Melarsomine dihydrochloride % of dogs n=311	PLACEBO % of dogs n=63
Injection Site Reactions	32.8	3.2
Coughing/Gagging	22.2	14.3
Depression/Lethargy	15.4	4.8
Anorexia/Inappetence	13.2	3.2
Pyrexia (fever)	7.4	0.0
Lung Congestion/Sounds	5.5	1.6
Emesis	5.1	1.6
Diarrhea	2.6	0.0
Dyspnea	2.6	1.6
Hypersalivation	1.9	0.0
Panting	1.6	0.0
Hemoptysis	1.6	0.0

Clinical observations/adverse reactions occurring in less than 1.5% of the dogs treated with melarsomine dihydrochloride include: abdominal hemorrhage, abdominal pain, bloody stool/diarrhea, colitis, gingivitis, pancreatitis, anemia, DIC, hemoglobinemia, icterus (mucous membranes), discolored urine, hematuria, inappropriate urination, low specific gravity, polyuria, pyuria, bronchitis, miscellaneous respiratory problem, pneumonia, tachypnea, tracheobronchitis, wheezing, alopecia, hair color and coat character change, miscellaneous skin problem, ataxia, disorientation, fatigue/tires easily, miscellaneous eye problem, weight loss, convulsion/seizure, leukocytosis, polydipsia, and restlessness.

Onset and Duration of Clinical Observations/Adverse Reactions: The following table is provided to show the average onset time post-treatment for the most common reactions and the average duration of each event, as calculated from the 311 dogs treated with melarsomine dihydrochloride in the clinical field trials.

Average Onset Time and Duration (with Ranges) of the Most Common Reactions in Clinical Trials

Clinical Observation/Adverse Reaction	Avg. Onset Time in Days (range)*	Avg. Duration in Days (range)*
Injection Site		
Swelling/Edema/Seroma	6 (0*-77)	18 (< 1-210)
Pain/Discomfort/ Irritation/Inflammation/Heat	1 (0-6)	3 (< 1-30)
Generalized/Local Myalgia with Tenderness and Stiffness	3 (1-8)	9 (< 1-30)
Persistent (lumps, knots, nodules, masses)	22 (0-99)	47 (1-152)
Abscess (sterile and septic)	24 (10-42)	21 (5-36)
Coughing/Gagging	10 (0-103)	13 (< 1-134)
Depression/Lethargy	5 (0-46)	6 (< 1-48)
Anorexia/Inappetence	5 (0-63)	5 (< 1-30)

*A zero indicates that the reaction first occurred on the day of treatment.

Mortality: Death is a possible sequelae of heartworm disease in dogs with or without treatment, especially in the Class 3 dogs. The following table shows the percentage of dogs that died in clinical trials with melarsomine dihydrochloride and the causes of death, if known.

Mortality in Dogs with Class 1, 2, and 3 Heartworm Disease Treated with melarsomine dihydrochloride in Clinical Field Trials		
	CLASS 1, 2 % OF DOGS n=267	CLASS 3 % OF DOGS n=44
Total Deaths	5.2	18.2
Cause:		
Trauma	2.3	2.3
Thromboembolism	0.0	4.6
Euthanasia (unrelated to treatment or underlying disease)	1.1	0.0
Euthanasia (related to treatment or underlying disease)	0.0	2.3
Underlying Disease	0.8	2.3
Undetermined	1.1	6.8

In one small (n=15), uncontrolled field study in severely ill (Class 3) dogs, 5 dogs died following treatment. Pulmonary thromboembolism was the cause of one death. The remaining dogs were not necropsied. All 5 dogs were in right heart failure at the time of treatment. Clinical signs seen in this study which were not seen in the larger studies include atrial fibrillation, collapse, hypothermia, and weakness.

Post Approval Experience: In addition to the aforementioned adverse reactions reported in pre-approval clinical studies, there have also been rare reports of paresis and paralysis in dogs following administration of melarsomine dihydrochloride. To report a suspected adverse reaction, contact Zoetis Inc. at 1-888-963-8471.

Overdosage: Three dogs were inadvertently overdosed with melarsomine dihydrochloride in the clinical field trials when the dose was calculated on a mg/lb basis rather than a mg/kg basis (2X overdosage). Within 30 minutes of injection, one dog showed excessive salivation, panting, restlessness, and fever with all signs resolving within 4 hours. Vomiting and diarrhea were seen in the second dog within 24 hours of injection. The dog vomited once and the diarrhea resolved within 24 hours. The third dog showed no systemic reaction to the overdosage. Clinical observations in healthy beagle dogs after receiving up to 3X the recommended dose included tremors, lethargy, unsteadiness/ataxia, restlessness, panting, shallow and labored respiration, rales, severe salivation, and vomiting which progressed to respiratory distress, collapse, cyanosis, stupor, and death (see **SAFETY**).

BAL in Oil Ampules (Dimercaprol Injection, USP) [Akorn, San Clemente, California, at 1-800-223-9851] is reported in the literature to be an antidote for arsenic toxicity and was shown in one study to reduce the signs of toxicity associated with overdosage of melarsomine dihydrochloride. The efficacy of melarsomine dihydrochloride may be reduced with co-administration of BAL.

STORAGE CONDITIONS

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Carl Osborne, veterinary internist and urolith researcher, dies at 76

Longtime *dvm360* contributor remembered for the way he cared for pets and people.

Carl Osborne, DVM, PhD, DACVIM, University of Minnesota College of Veterinary Medicine professor and longtime *dvm360* columnist and contributor, died on March 5 at the age of 76 in the presence of his family and service dog,



Dr. Carl Osborne

Chloe, according to a university release.

Osborne was born September 17, 1940, in Pittsburgh, Pennsylvania. In 1964, he graduated from Purdue University with his DVM and joined the faculty of the University of Minnesota College of Veterinary Medicine, where he served for 53 years. An expert in nephrology and urology, Osborne founded the Minnesota Urolith Center in 1981, a research facility specializing in companion animal urinary system diseases.

Osborne's career includes more than 50 teaching and research awards, including the Robert R. Shomer Award for Outstanding Achievements in Veterinary Medical Ethics in 2005, the release states. As a One Health pioneer, Osborne also worked to use learnings from dissolving urinary tract stones in dogs and cats to help treat paralyzed veterans.

In a 2012 *dvm360* column, Osborne shared a school essay written by his granddaughter, Zoe Osborne, who was 14 at the time. "Magnetism is a word that may be used to describe a pull or attraction toward someone you admire," the younger Osborne wrote. "This is what I feel toward my grandpa. He suffers from Parkinson's disease, which I believe makes his qualities stand out even more. ... I admire him because he's generous, determined and loving."

Osborne's granddaughter went on to provide several examples to illustrate her grandpa's admirable qualities, including an anecdote about an impoverished woman who had to sell her cherished pet parrot of 70 years because she needed the money. After paying the advertised price, the altruistic Osborne returned the bird to

its original owner.

"Look around from now on," Zoe wrote in closing her *dvm360* essay. "Are you drawn to someone in your

life? Do you feel that magnetic pull towards them? If so, why? I hope you're drawn to someone too, because they have something truly beautiful and

just as amazing to offer the world as my grandpa."

To read Osborne's work for *dvm360*, visit dvm360.com/osborne. *dvm360*

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FDA approves generic melarsomine product for heartworm treatment

Zoetis releases Diroban (melarsomine dihydrochloride) injection amid long-term shortage issues.

The U.S. Food and Drug Administration (FDA) has approved Diroban, a generic melarsomine dihydrochloride antiparasitic drug for treating heartworm disease in dogs, according to an agency release. The drug is sponsored by Anzac Animal Health and distributed by Zoetis.

Immiticide, the brand-name drug marketed by Merial, has experienced a manufacturing shortage since early 2010 and is not available in the United States, though the FDA has allowed Merial to import its EU-approved product to help fill the need for heartworm disease treatment. That program is still in effect, says Lindsay Dashefsky, MPH, FDA health communications specialist, in an email to dvm360.

With this approval, Diroban becomes the only FDA-approved drug available in the U.S. to treat canine heartworm disease, according to the agency release. It is a sterile powder that must be reconstituted with an accompany-

ing sterile water diluent. It is intended for treatment of stabilized class 1, 2 and 3 disease caused by immature to mature adult infections of *Dirofilaria immitis*.

The drug is also the first FDA-approved generic melarsomine product. The agency requires generic drugs to have the same quality, performance and intended uses as the approved brand name drug. Diroban is identical to Immiticide in active ingredient, strength, dosage form and dosage regimen, the agency states. It is also bioequivalent to Immiticide. While Merial continues to address its shortage, the agency recommends veterinarians use Diroban to treat dogs with heartworm disease. **dvm360**

Don't miss

... more on what you need to know about heat-treating heartworm samples on page M8.

Houston veterinarian charged with plot to murder ex-husband

Valerie McDaniel been taken into custody after allegedly hiring a hit man to kill her former spouse.

Valerie McDaniel, DVM, along with her boyfriend Leon Jacob, have been charged with solicitation of capital murder after trying to hire a hitman to kill their exes. According to Harris County Court documents, McDaniel solicited another individual to engage "in specific conduct, namely, the murder of M.M.," which "would make the solicitee a party to the offense of capital murder."

McDaniel appeared in court March 14 via video teleconference. She did not request appointment of counsel for this first appearance; however, she later requested Matthew B. Alford to be her hired defense attorney for future appearances. The hearing was recorded on court video and a member of the court states, "During the course of the discussion, she indicated that she wanted her ex-husband 'taken care of.' She indicated that she would pay the undercover [hit man] \$10,000 to kill her ex-husband, and she

gave him a name and address to do that."

The court, headed by Judge Jim Wallace, found that "probable cause for further detention exists." Bail was set at \$50,000, which McDaniel posted. She is set to return to court March 28.

According to her clinic website, McDaniel and her daughter live with their two dogs, their cat and their Illiger Macaw. "Dr. McDaniel spends her free time cooking, reading and relaxing on the water," her website's bio reads.

Montrose Veterinary Clinic is a full service animal hospital and sees both emergency cases as well as pet patients in need of routine medical, surgical and dental care, according to the practice Facebook page. "Dr. Valerie McDaniel has years of experience treating serious conditions and offering regular pet wellness care," the page reads. "Beyond first rate pet care, we make our clinic comfortable, kid-friendly, and calm, so your pet can relax." **dvm360**

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U.S. pets getting fatter, according to pet obesity research report

Pet owners disagree with veterinarians on nutritional issues.

Pet obesity in the U.S. continued to steadily increase in 2016, affecting nearly 59 percent of cats and 54 percent of dogs, according to the Association for Pet Obesity Prevention (APOP). During the ninth annual survey, APOP also found that pet owners and veterinary professionals disagreed on key pet food issues such as the benefits of corn and grains, the value of raw and organic diets, and the best sources of pet nutritional advice.

“Obesity continues to be the greatest health threat to dogs and cats,” says APOP founder Ernie Ward, DVM, in an APOP release. “Obesity is a disease that kills millions of pets prematurely, creates immeasurable pain and suffering and costs pet owners tens of millions of dollars in avoidable medical costs.”

In the 2016 clinical survey, 53.9 percent of dogs and 58.9 percent of cats were classified as overweight (body condition score [BCS] 4) or obese (BCS 5) by their veterinary healthcare professional. That means an estimated 41.9 million dogs and 50.5 million cats are too heavy, based on 2016 pet population projections provided by the American Pet Products Association. In 2015, APOP found that 53.8 percent of dogs and 58.2 percent of cats were overweight or obese.

As part of the 2016 study, pet owners and veterinary professionals were questioned about pet obesity, diet and nutrition, and sources of pet food advice. When asked to classify their own pet’s weight, 81 percent of pet owners and 87 percent of veterinary professionals reported that their pets were a normal and healthy weight. Ninety-eight percent of veterinary professionals agreed that pet obesity was a problem in the United States, compared with about 87 percent of pet owners. Nearly all pet owners and veterinary professionals (greater than 95 percent) believed that an overweight pet was at increased risk of pain and suffering and that high-quality nutrition could extend life expectancy.

Quality was the primary influence on pet food purchases for 80 percent of pet owners and 82 percent of veterinary staff. Price (16 percent) or location and convenience (7 percent) were not significant factors for either group when choosing food for their dog or cat. About 55 percent of both pet owners and veterinary professionals said they worried about the quality of their pet’s food affecting the long-term health of their dog or cat.

Pet owners and veterinary professionals disagreed on whether their veterinarian discussed their pet’s ideal weight. More than 93 percent of pet owners surveyed said they had visited their veterinarian within the past year, yet only 49 percent reported that their veterinarian had discussed their pet’s ideal weight during the visit—and more than 60 percent of veterinary professionals claimed they did. Less than 4 percent of pet owners said they felt guilty or uncomfortable when their veterinarian talked about their pet’s weight with them.

Only 42 percent of pet owners agreed that their veterinarian should recommend a maintenance diet, compared with more than 64 percent of veterinarians. Only 39 percent of pet owners recalled their veterinary clinic recommending a maintenance diet, while about 48 percent of veterinary professionals said they offered routine diet recommendations.

When asked where they obtained the best dietary recommendations for their pet, more than 46 percent of pet owners rated online advice as the best source, compared with 19 percent of veterinary professionals.

Pet owners and veterinary professionals were sharply divided on pet food ingredients and types of dog and cat diets:

- Do you think low- or no-grain diets are healthier for dogs? Sixty-one percent of pet owners and 25 percent of veterinary professionals answered “yes” to this statement.
- Do you think raw diets are healthier for dogs and cats? Thirty-five percent of pet owners and 15 percent of veterinary professionals said “yes.”
- Do you think organic pet foods are healthier? Forty-three percent of pet owners and 23 percent of veterinary professionals answered “yes.”
- Do you think corn is healthy for dogs? Seventy-three percent of pet owners said “no” and 48 percent of veterinary professionals said “yes.”

For the annual obesity prevalence survey conducted by APOP, veterinary practices assessed the body condition scores of every dog and cat patient they saw for a regular wellness exam on a given day in October. Body condition scores based on a five-point scale and actual weight were used in classifying pets as either underweight, thin, ideal, overweight or obese. The 2016 survey included the assessment of 1,224 dogs and 682 cats by 187 veterinary clinics. [dvm360](#)

TABLE 1

Dogs (n=1,224)		
BCS	Number of dogs	Percentage
1	6	0.5%
2	17	1.4%
3	542	44.3%
4	417	34.1%
5	242	19.8%

Cats (n=682)		
BCS	Number of cats	Percentage
1	7	1%
2	21	3.1%
3	252	37%
4	191	28%
5	211	30.9%



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Short-nosed breeds at higher health risk, study shows

> Continued from cover

breeds less healthy, as healthy, or more healthy than dogs of a more moderate canine conformation?” the white paper reads. “The answer: Less healthy, across a range of common conditions.”

One of the most striking differences between the 24 breeds considered brachycephalic (see [page 16](#) for a list of breeds) and other dogs was in corneal ulcer incidence. This condition had a prevalence of 6.3 percent in brachycephalic breeds, compared with 1.4 percent in other breeds.

“Corneal ulcers are so frequently diagnosed in brachycephalic dogs that the condition could have been removed from analysis,” the white paper states. “But since these injuries happen to all dogs quite commonly, corneal ulcers were kept in the study. Brachycephalic dogs are three to four times more likely than non-brachycephalic dogs to injure their corneas, the highest difference in any of the conditions studied.”

Skin conditions were another area of concern, even beyond the fungal issues often found in the deep skin folds of some short-nosed dogs. Pyoderma was diagnosed in 18.9 percent of brachycephalics, compared with 14 percent of other dogs; otitis externa in 25.3 percent of short-nosed dogs, compared with 19.3 percent of others; and allergic dermatitis in 18.6 percent of brachycephalics, as opposed to 14 percent of other breeds.

The study also considered the gastrointestinal tract, respiratory and cardiac systems, and orthopedics, and the finding of higher prevalence of disease conditions in brachycephalic dogs was consistent in the results.

“Veterinarians have long known these breeds come with their own set of health challenges,” reads the Nationwide white paper. “With an analysis that shows brachycephalic breeds significantly more impacted than their structurally normal counterparts across a range of common conditions, Nationwide has opened a new topic for discussion. We hope to help improve the quality of life for these dogs, and to lessen the expense their owners have in caring for them.” **dvm360**

Flip to page 16 for data on brachycephalic breeds from Nationwide.



Two new studies use MRI to map painful malformations in toy dog breeds

UK researchers hope their work will speed up the process of identifying dogs suffering with Chiari malformation and Syringomyelia disorder.

Researchers from the University of Surrey School of Veterinary Medicine collaborated with neurologists at Fitzpatrick Referrals and Helsinki University and a geneticist from the University of Montreal on two Chiari malformation and Syringomyelia disorder studies that were published in *PLOS ONE* in January, according to a University of Surrey release.

The first study used a novel MRI mapping technique to study how the Chiari malformation, a skull bone deformity that changes the flow of cerebrospinal fluid and creates fluid-filled pockets (Syringomyelia) in the spinal cord, develops in the Cavalier King Charles spaniel—a breed that is predisposed to the condition.

Thanks to detailed MRI footage of the dog's skull, brain and vertebrae, researchers were able to see how the premature fusion of bones in the skull can both compress a dog's brain and cause a dog's face to become flatter and more doll-like, depending on the fusion location.

Using a similar method, the second study dis-

covered that the hind skull was smaller in Syringomyelia-affected Cavalier King Charles spaniels, Chihuahuas and affenpinschers, which altered how the skull lined up with adjacent bones.

The MRI footage also revealed differences among the three breeds. Chihuahuas exhibited a smaller angle between the skull base and the first and second neck vertebrae. And while affenpinchers had less space between the first and second vertebrae, Cavalier King Charles spaniels had less space between the skull base joint and the first cervical vertebrae.

“Demand for these breeds is unprecedented,” says University of Surrey researcher Clare Rusbridge, BVMS, DECVN, PhD, MRCVS, RCVS. “Due to selection for rounded head shapes with short muzzles, we are seeing more and more dogs with the painful Chiari malformation and Syringomyelia disorder. The innovative mapping technique used in this study has the potential to provide a diagnostic tool for vets, helping them to quickly identify dogs suffering from these painful disorders.” **dvm360**



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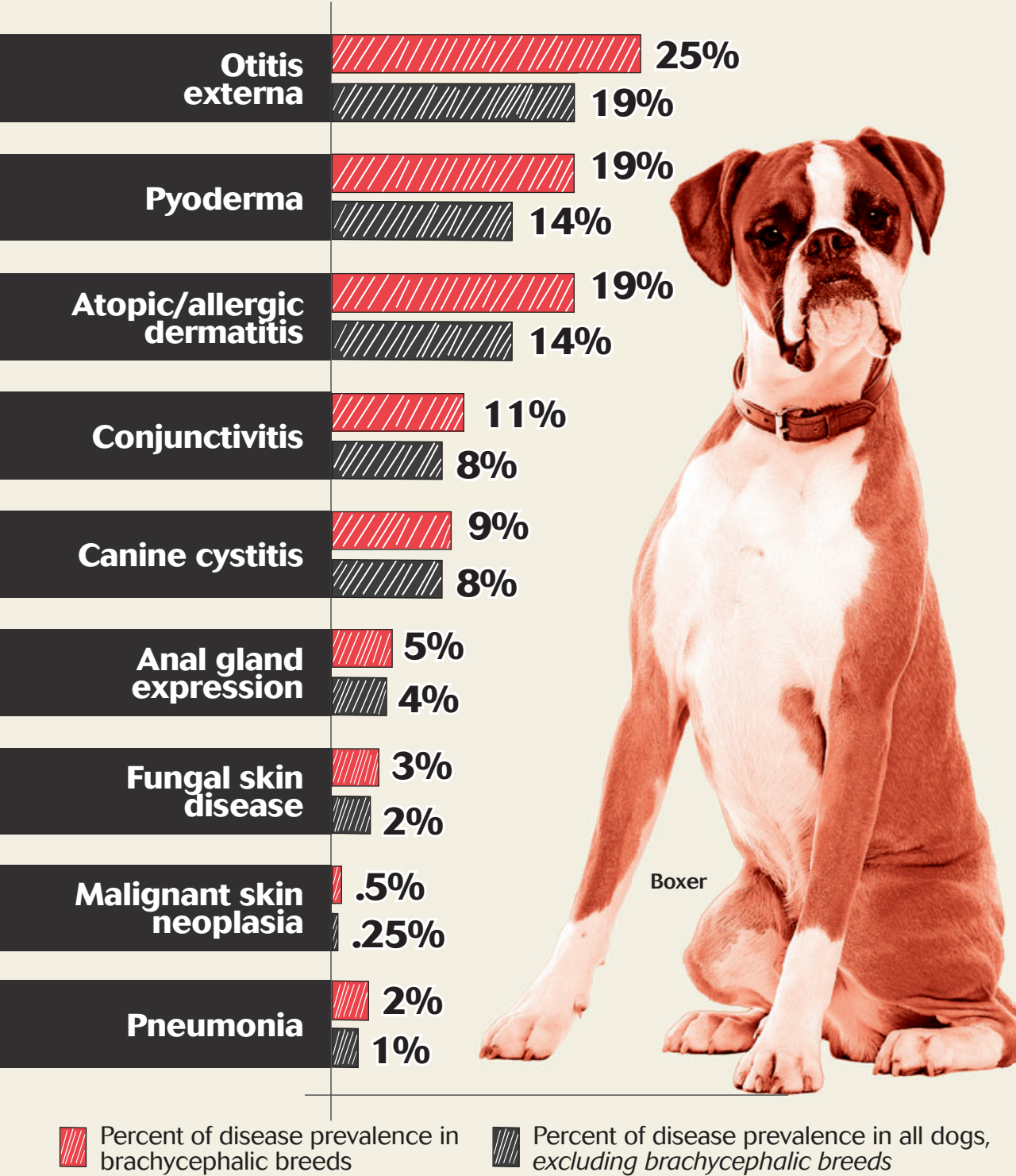
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BRACHYCEPHALIC BREEDS: A BAD GENE POOL?

We know the oh-so-loved brachycephalic breeds regularly suffer from respiratory conditions, chief among them, brachycephalic obstructive airway syndrome (BOAS). But exclusive data from Nationwide Pet Insurance shows that these breeds show a higher prevalence for other diseases, namely skin conditions. It might make you caution your clients on that new pug puppy purchase.



THE BRACHY BREEDS

 Affenpinscher	 Boston terrier	 Brussels Griffon
 Bulldog - Old English	 Shih Tzu	 Cavalier King Charles spaniel
 Dogue de Bordeaux	 English bulldog	 French bulldog
 Japanese Chin	 Lhasa Apso	 Mastiff
 Mastiff - Brazilian	 Mastiff - Bull	 Mastiff - English
 Mastiff - Neapolitan	 Mastiff - Pyrenean	 Mastiff - Tibetan
 Mastiff - Spanish	 Pekinese	 Pug

Nearly **60%** of brachycephalic breed owners recognized the clinical signs of BOAS in their dogs, but dismissed these respiratory difficulties as “normal for the breed.”* Are these conditions next?

*PACKER RMA, HENDRICKS A, BURN CC. DO DOG OWNERS PERCEIVE THE CLINICAL SIGNS RELATED TO CONFORMATIONAL INHERITED DISORDERS AS 'NORMAL' FOR THE BREED? A POTENTIAL CONSTRAINT TO IMPROVING CANINE WELFARE. ANIM WELF. 2012;21(SUPPL. 1):81-93

Source: In an inclusive study completed over six years (2009-2015), Nationwide Pet Insurance identified 23 breeds as brachycephalic (see above). Out of over 1.2 million dogs studied, 184,748 dogs were identified as brachycephalic. (Not pictured: Victorian bulldog)

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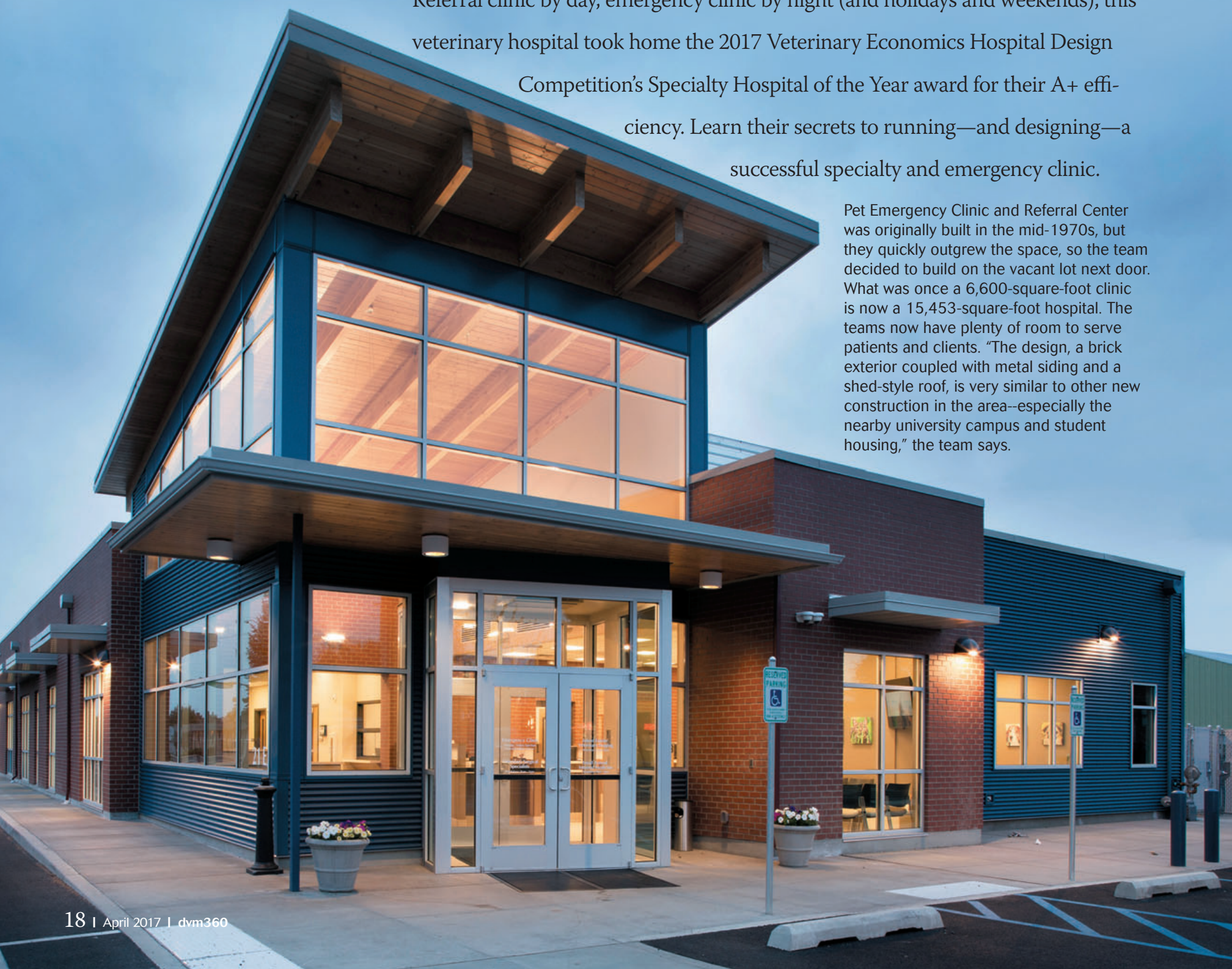
Meet the 2017 Specialty Hospital of the Year

OK, so they didn't set out to make the Taj Mahal, but at Pet Emergency Clinic & Referral Center clients, pets and specialist groups all benefit from a bigger hospital in Spokane, Washington.

By Ashley Griffin

Is there anything they can't do? Surgery, radiology, internal medicine, emergency medicine and dermatology services now fit comfortably under one roof at Pet Emergency Clinic (PEC) & Referral Center in Spokane, Washington. Referral clinic by day, emergency clinic by night (and holidays and weekends), this veterinary hospital took home the 2017 Veterinary Economics Hospital Design Competition's Specialty Hospital of the Year award for their A+ efficiency. Learn their secrets to running—and designing—a successful specialty and emergency clinic.

Pet Emergency Clinic and Referral Center was originally built in the mid-1970s, but they quickly outgrew the space, so the team decided to build on the vacant lot next door. What was once a 6,600-square-foot clinic is now a 15,453-square-foot hospital. The teams now have plenty of room to serve patients and clients. "The design, a brick exterior coupled with metal siding and a shed-style roof, is very similar to other new construction in the area—especially the nearby university campus and student housing," the team says.



1. Team up for ideas

"If you could have anything in the new building, what would it be?"

This was the question asked of each team on the building committee. Each group was represented in the clinic: the management team, the specialist groups, the shareholders and referral veterinarians.

"Then we gave the lists to the architects and said, 'What can we do with our budgetary and space constraints?'" says Dr. Michael O'Dea, hospital manager and ER veterinarian. "Space was our biggest factor. The following items made the cut:

- > Computed tomography (CT) unit inside the clinic—it was previously in a mobile van parked beside the old building
- > Two radiography suites—one dedicated for the radiologist and the other open for the surgical group or internal medicine group to use as needed
- > More critical care units and oxygen capacity for critically ill patients
- > Greater separation between client areas and treatment areas—so clients don't overhear stressed or uncomfortable patients
- > Several treatment peninsulas added throughout the hospital

Pet Emergency Clinic & Referral Center by the numbers

Board of directors: Dr. Jeff Siems, Dr. Katie Dull, Dr. Linda Wood, Dr. Vern Streeter, Dr. Mark McFrederick, Dr. Michael O'Dea, Dr. Terry Brown

Number of doctors: 21 full-time, 1 part-time
Exam rooms: 10

Total cost: \$5,659,103

Building cost: \$3,057,000 (building only; excludes land purchase, landscaping, parking lot, etc.)

Cost per square foot: \$197.83

Square footage: 15,453

Structure type: New freestanding

Architect: Tony Cochrane, Animal Arts

Photographer: Tim Murphy, Foto Imagery

Treat your patients: The old clinic did not have an abundance of natural light and now (behold!) there are skylights in the treatment area. And that's not the only improvement or the most important. "In the new building the kennels are in the treatment area with plenty of cages. We also have more oxygen capacity for critically ill patients," O'Dea says. The team wanted to keep the treatment zone as open as possible. From the charting stations, staff members can see all the way through treatment and from treatment into surgery. Another critical feature for an emergency clinic? Designing a quick route to the treatment area. "It's a straight shot from the lobby back to the treatment area through a corridor along the south side of the building with swinging doors," O'Dea says. "So in the case of a very severe emergency, our staff can receive an emergency patient and bring them back to the treatment area for a quick assessment and further care."



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Double the fun: What's better than one X-ray suite? Two X-ray suites! No more waiting in line to take a pet's radiograph. In this new clinic, the radiologist has a suite right across from the ultrasound room and the surgical group or internal medicine group can use the second suite on the other side of the building.

Get inspired at the Hospital Design Conference

Attend the 2017 Veterinary Economics Hospital Design Conference in Kansas City, Missouri, August 23-25. 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 thecvc.com/hd for more information.

Plus—representatives from both of this year's Co-Hospitals of the Year will be on hand to share their secrets.



Step right up: During daytime hours, pet owners are greeted and directed to the appropriate check-in cubicle so each practice group can consult with their clients. During the ER night shift, staff occupies the first two cubicles so they can help owners as soon as possible. The brick on the building's exterior continues into the lobby and metal signage letters from the original Pet Emergency Clinic are displayed above the reception desk.

2. Trust your architect

"We didn't set out to build the Taj Mahal of veterinary clinics," says O'Dea. "But you look at the grand space of the new lobby and that's almost what it feels like."

And when a 6,600-square-foot clinic (this was the maximum clinic size after multiple additions since the clinic opened in 1977) is replaced with a whopping 15,453-square-foot hospital, it's no wonder O'Dea is still in awe of the new space. And even with 52 veterinarian shareholders, they still left the look and feel of the clinic to the architects.

"The architects started out with lots of ideas and refined it to what you see today," O'Dea says.



Pick a chair, any chair: Throughout the lobby there are several separate sections of seating, including a comfortable long-term waiting room, to give clients privacy.



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IMPORTANT SAFETY INFORMATION: NexGard[®] 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.



Exam room: All 10 exam rooms at PEC have two doors—one for clients and one for staff. This allows clients to easily exit back into the lobby and staff members to sneak out the back. These exam rooms also feature City View tile that is durable and easy to clean, a radiograph illuminator, overhead cabinet and workstation storage and colorful pet portraits. They also feature windows that invite lots of natural light to space—almost too much light. “On sunny days, too much light can inhibit seeing computer screens, so throughout the last several months we’ve been upgrading the windows,” O’Dea says. Adding a layer of “window frosting” helps keep the light situation under control.

A sign of the times: This sign once belonged to a gas station back in the day, but now it proudly sports the PEC name and logo and clients can spot the clinic from miles away.



3. See the signs

Clients can spot PEC from miles away—literally, thanks to the giant billboard sign located on the southwest side of the building. The sign once belonged to a gas station back in the day, but now it proudly sports the PEC name and logo. Why did they decide to keep the tall, tall sign? Well, they did because they could.

“Signs that tall are not allowed anymore,” O’Dea says. “But this one is grandfathered in. If we don’t change it, then we don’t have to conform to current codes for signage.”

Score! This just goes to show, when life gives you a really, really big sign, you make it work for you. Not that you even need a sign when your clinic has been in the same area for 40 years.

O’Dea echoes the sentiment. “There was an opportunity to move to a different location nearby,” he says. “But when clients have pets in distress, now they can shoot right back to that same spot and we’ll be there.” **dvm360**

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

NexGard[®]
(afoxolaner) Chewables

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

Description:
NexGard[®] (afoxolaner) is available in four sizes of beef-flavored, soft chewables for oral administration to dogs and puppies according to their weight. Each chewable is formulated to provide a minimum afoxolaner dosage of 1.14 mg/lb (2.5 mg/kg). Afoxolaner has the chemical composition 1-Naphthalenecarboxamide, 4-[5-[3-chloro-5-(trifluoromethyl)-phenyl]-4, 5-dihydro-5-(trifluoromethyl)-3-isoxazoly]-N-[2,2,2-trifluoroethylamino]ethyl.

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 (*Amblyomma 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	

NexGard can be administered with or without food. Care should be taken that the dog consumes the complete dose, and treated animals should be observed for a few minutes to ensure that part of the dose is not lost or refused. If it is suspected that any of the dose has been lost or if vomiting occurs within two hours of administration, redose with another full dose. If a dose is missed, administer NexGard and resume a monthly dosing schedule.

Flea Treatment and Prevention:
Treatment with NexGard may begin at any time of the year. In areas where fleas are common year-round, monthly treatment with NexGard should continue the entire year without interruption.

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

Tick Treatment and Control:
Treatment with NexGard may begin at any time of the year (see **Effectiveness**).

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 NexGard.

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 doses 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.

Table 1: Dogs With Adverse Reactions.

	Treatment Group			
	Afoxolaner		Oral active control	
	N ¹	% (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

¹Number of dogs in the afoxolaner treatment group with the identified abnormality.
²Number 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 one week after receiving the third dose. The dog remained enrolled and completed the study. Another dog with a history of seizures had a seizure 19 days after the third dose 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 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.fda.gov/AnimalVeterinary/SafetyHealth>.

Mode of Action:
Afoxolaner is a member of the isoxazoline family, shown to bind at a binding site to inhibit insect and acarine ligand-gated chloride channels, in particular those gated by the neurotransmitter gamma-aminobutyric acid (GABA), thereby blocking pre- and post-synaptic transfer of chloride ions across cell membranes. Prolonged afoxolaner-induced hyperexcitation results in uncontrolled activity of the central nervous system and death of insects and acarines. The selective toxicity of afoxolaner between insects and acarines and mammals may be inferred by the differential sensitivity of the insects and acarines’ GABA receptors versus mammalian GABA receptors.

Effectiveness:
In a well-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 on Day -1 generated flea eggs at 12- and 24-hours post-treatment (0-11 eggs and 1-17 eggs in the NexGard treated 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 >93% effectiveness against *Rhipicephalus sanguineus*, 48 hours post-infestation for 30 days. At 72 hours post-infestation, NexGard demonstrated >97% effectiveness against *Amblyomma 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, anthelmintics, 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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From WVC 2017: Take a gamble on new veterinary products

We went to Vegas and all we got was this amazeballs roundup of what's new and coming to a show floor near you.

What happens in Vegas doesn't always stay in Vegas. In fact, we're spilling the beans here to help you make some safe bets on purchases for your veterinary practice with this quick product guide.

Scratch payment plans off your list

Caleb Morse describes his journey into the veterinary world with a simple story: He and his wife found a cat in a dumpster, and a few short months later they were ponying up \$4,000 and later \$10,000 for expensive visits to the emergency room. Now he and partner John Keatley are rolling out Scratch to veterinary practices to help pet owners pay for unexpected bills. Here are the basics:

> Pet owners apply on their smartphones with any par-

ticipating veterinarian—no credit check “ding” on the pet owner’s record (and the process takes less than two minutes).

> Scratch offers pet owners up to \$10,000 to finance over one year or pay interest-free within 30 days. There is no prepayment penalty. Morse says Scratch pays the practice the next business day.

> Once a pet owner signs off and is approved (no credit check necessary), emails go out to the pet owner and the veterinarian, who can use an email link to bill Scratch directly. Veterinarians pay a base 5 percent per invoice, no matter the Scratch financing option.

Compare these basic financing features to other alternatives for your clients, including CareCredit and Veterinary Payment Plans, for a menu of ways to help pet owners pay.



1 DOSE. 12 WEEKS.*
IMPROVED PET OWNER
COMPLIANCE.

THE DIFFERENCE OF 12-WEEK* FLEA AND TICK PROTECTION

Only **Bravecto®** takes care of killing fleas and ticks on dogs for 12 weeks* with just one convenient chew.¹

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- **Proven safety** – clinically proven for breeding, pregnant, and lactating dogs¹

Discover the difference at **BravectoVets.com**

START RECOMMENDING PRESCRIPTION-ONLY BRAVECTO TO PET OWNERS AT YOUR CLINIC

*Bravecto kills fleas, prevents flea infestations, and kills ticks (black-legged tick, American dog tick, and brown dog tick) for 12 weeks and also kills lone star ticks for 8 weeks.

IMPORTANT SAFETY INFORMATION: The most common adverse reactions recorded in clinical trials were vomiting, decreased appetite, diarrhea, lethargy, polydipsia, and flatulence. 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 lone star ticks beyond 8 weeks after dosing.

PLEASE FIND PRESCRIBING INFORMATION ON PAGE 26.

References: 1. Bravecto [prescribing information]. Madison, NJ: Merck Animal Health; 2014. 2. Burgio F, et al. *Parasit Vectors*. 2016;9(1):626. 3. Taenzler J, et al. *Parasit Vectors*. 2014;7:567.

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BRAVECTO®
(FLURALANER)





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

Caution:
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 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:
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 use of the product.

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.

Distributed by:
Intervet Inc (d/b/a Merck Animal Health)
Madison, NJ 07940

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154545 R1

Reference: Bravecto [prescribing information] Madison, NJ: Merck Animal Health; 2014
Available by veterinary prescription only.



Cancer cells can't take the heat

Could 40 C (104 F) be key to curing cancer? Hyperthermia is a cancer treatment modality that has taken off in human medicine and is now coming to the veterinary market via Midmark's deep tissue heating system Thermofield. This microwave technology in the form of a heating pad is designed to be used in conjunction with chemotherapy and radiation therapy for superficial tumors within 4 cm of the skin's surface, enhancing their effects on those malicious malignant tumor cells.

How can heat application aid in cancer treatment? Midmark says this adjunctive form of cancer therapy:

- > Triggers the release of cancer-fighting immune system components
- > Helps the immune system recognize cancer cells by expressing heat shock proteins
- > Increases blood flow in the target area to deliver more chemotherapeutic drug to the tumor
- > Increases the cytotoxicity of chemotherapy
- > Makes cancer cells more sensitive to radiation
- > At higher temperatures, damages tumor vasculature and kills cancer cells
- > Inhibits a cancer cell's ability to repair its DNA
- > Mitigates pain

The heated pad will quickly bring the targeted area to 40 C and stays on the patient for 45 minutes. It's best to keep the patient sedated so that the pad remains in the exact spot you're targeting. Worried about burning the skin? The applicator is designed to emit a time-variable electromagnetic field that projects into the tissue, sparing the skin.

Don't brush this off

A human orthodontist, Salvatore DeRicco, is visiting veterinary conferences this year to talk up his Gumliner II and Lil Gumliner II, which he says are improvements on the human-toothbrush-turned-pet-toothbrush products on the market. His models sport a thinner line of bristles to focus on the gum line without punishing the gums, especially when brushing those tiny feline teeth. Both the cat and dog versions feature a flexible curve and tiltable brush to reach those hard-to-get maxillary molars. Learn more at pet-toothbrushes.com. (And, yes, you can get your practice name imprinted on the product.)

Just say no (to the cone)

Say goodbye to the cone of shame and hello to this frankly adorable onesie for pooches, kitties and bunnies. Medical Pet Shirts are cotton/Lycra garments billed as full-body bandages to help protect wounds and dressings. The doggie versions come in several sizes and offer easy-to-undo snaps for strategic potty breaks. (The cat and rabbit versions don't cover the tush for obvious reasons ... unless your clients routinely walk these pets for potty breaks instead of using a litter pan.) Want to see all sizes and options? Visit medicalpetshirts.com. (If you're a cat lady, it's worth noting they have a new limited edition leopard-print version for cats only.)



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Strengthen your core

Buy a new piece of equipment for your veterinary practice and you risk turning it into a fancy coat rack if you don't train on it, charge for it and market it to clients. Companion Animal Health (formerly Companion Therapy Laser—they're branching out, you see) is offering a paid service called Companion Core that provides one-on-one consulting, an iPad educational app, exclusive webinars for team member training, and client-facing marketing materials to get that new piece of equipment used, charged for and paid off.

"This is for the veterinarian who wants to do laser therapy, but doesn't have the time to train staff," says Companion's Carl Bennett. "It takes away the fear the doctor has that they got the training but don't know where to take it."

Add the service when you make an equipment purchase to help ensure you'll put that new machine to use in your hospital. DYK? Bennett tells us all the cool kids in human medicine call laser therapy "photobiomodulation."

Not lame at all

Take a stance on the way pets stand with the Stance Analyzer from Companion Animal Health.

Whether you're using the product to evaluate lameness or measuring the improvements you see during rehabilitation, this analyzer offers objective measurements to see how patients are shifting their weight to determine which limbs are affected. So the next time Mrs. Doubt says, "Are you sure that underwater treadmill is helping Baxter?" you can

put Baxter on the Stance Analyzer mat and let the data speak for you (it only uses nice language, we promise). Check it out at <http://www.litecure.com/rehabilitation/ourproduct/stance-analyzer/>



Don't cry for me, Lhasa apso

Those tear stains are often simply a cosmetic problem, but if you're growing tired of the constant complaints about Alfie's unsightly undereyes, you can skip the powder solution and recommend a once-a-day soft, chewy, real beef treat. OcuBright, available exclusively through veterinarians, can zoom you past this tricky conversation so you can scoot on to other important medical topics, like Alfie's sebaceous adenitis or the dental cleaning he definitely needs.



Doctors can take this advice

Has this ever happened to you? You're busting out the ultrasound at the veterinary practice and you're not totally sure the veterinarian or the technician has the wand in just the right spot. Sound feels your pain. So its new briefcase-sized Logiq V2 Vet, using GE technology from human healthcare, offers a bit more help in the moment. During procedures, the Scan Coach shows reference images while you are live scanning: an on-screen photo example of what the wand looks like on the patient as well as an image of the anatomy of the location. The company only had demo images to show during WVC, but it plans to release protocols soon for FAST (focused assessment with sonography in trauma) and Big 5.

To dinnertime and beyond!

It's kind of like astronaut food for pets—only most pets probably aren't planning a trip to space anytime soon and never took a class in science or engineering. But if your patients are feeling under the weather, you might recommend, well, Under the Weather. It's a freeze-dried bland diet for those times when you'd normally say, "Just feed him chicken



and rice for the next day or so."

The "pet parent" (this phrase is increasingly common in industry, we're finding) simply adds water—it's as simple as preparing a package of ramen. The diet is made from human-grade meats; it's gluten-free, with no artificial flavors dyes or chemicals; and it comes in three flavors: chicken and rice, bison and oatmeal, and chicken and rice with pumpkin. Packages range from 6 to 7 oz, and the suggested retail is \$11.99.

Technicians can take TOBI's advice

One of the coolest things about the new therapy laser from Sound, the DoctorVET Small Animal Laser, is how you get the instructions.

They're not in a manual or a PDF but pop up during use for the particular species and type of condition you're treating on a tablet-like display.

The mascot is a bow-tied puppy named TOBI (Treatments with Onboard Instructions). He doesn't show up on-screen, unfortunately, but his advice about where and how to focus the laser for a particular treatment does.

"As a society we think we should be able to turn something on and use it immediately," says Sound's Steve Nielsen. He hopes TOBI will make laser therapy training easier for both veteran and newbie technicians alike.

Nielsen also estimates that DoctorVET is a few thousand dollars less than comparable models. Go check prices with major competitors like Companion and K-Laser and compare their user-friendly displays.



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Dogs take enough risks on their own.

Why add unnecessary proteins to the list?

Give dogs all the Lyme protection they need and none of the antigens they don't.

It only takes a single protein, OspA, to block the transmission of *Borrelia burgdorferi* in the United States.^{1,2,3}



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REC16NALYMEAD2 (03/17).

¹ 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 (Osp) A, but not OspC, provides cross-protection of mice challenged with North American isolates of *Borrelia burgdorferi*. *J Infect Dis*. 1997;175(2):400-405.

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The curative capability of canine companionship

Like the famed astronomical wonder with the same name, North Star assistance dogs lead the way for children and others struggling in the dark with emotional and physical challenges. *By Ed Kane, PhD*

Since the North Star Foundation was incorporated as a nonprofit 501(c)(3) organization in 2000, it has placed hundreds of dogs with human partners, pairing them mostly with children with autism or conditions such as grief, trauma or serious illness. North Star, based in Storrs, Connecticut, has also partnered its service dogs with adults facing similar struggles, especially service veterans with posttraumatic stress disorder (PTSD). Here's a bit of their story.



>>> Aquiles, a North Star dog that works with a boy with autism named JP, with school children in McAllen, Texas. (All photos courtesy of Patty Dobbs Gross.)

The importance of breeding, temperament and socialization

North Star dogs are specifically bred for temperament and soundness, with temperament key to ensuring that the dogs work safely and effectively, says Patty Dobbs Gross, founder and executive director of the North Star Foundation. "North Star's breeding program is 20 years in the making, with several golden [retriever] lines we are developing to possess the level of soundness in both body and temperament for work with children," says Gross.

The field of canine behavioral genetics is still in its infancy, but researchers do know that careful breeding can produce this soundness, as well as specific canine temperamental traits such as tolerance for children, social intelligence and "biddability," or willingness to work.

North Star dogs are gently handled and carefully socialized from birth through their early years of puppyhood. The North Star philosophy of early socialization helps ensure proper placement of the proper dog for the proper client—child or adult. Organizers also work to help the person in need bond with the dog and develop a high-quality relationship. During the introduction of dog to person, supervisors monitor the placement to ensure it will endure and help the individual with his or her specific challenges.

The dogs' training and socialization process begins at birth. "The whelping boxes are set up so that whenever a person walks by, they want to reach in to handle the puppies," says Gross.

"But we only pet the pups that are sitting. If we do that consistently, by the time the pups are 7 weeks of age, they snap to a sit whenever a person walks into the room."

The key is to match the right dog with the right person, so that's where the program focuses most of its energy. And while there are no guarantees, the rewards are sweet when the right match is made.

An illustration: Lilly and an emotionally challenged veteran

Gross says one of her first veteran placements involved a man from Hawaii. This veteran, who hadn't been well emotionally since a tour in Afghanistan, emailed her asking for a North Star dog. "We worked closely with him, and it was one of the nicest placements I have made," says Gross. North Star had a dog at the time, Lilly, that was "a little too much dog" for the children they were working with, so she partnered Lilly with the veteran.

This veteran's particular difficulty was flashbacks, which took the form of nightmares during sleep or panic attacks during the day. Sometimes these incidents would occur in public areas such as a bus. "I wasn't sure what would happen the first time this veteran woke up startled in the middle of night," Gross says. "His cortisol levels would be naturally high, so the dog would 'understand' that her partner was emotionally upset, but what would Lilly choose to do?"



>>> North Star dog Nola's 3-week-old puppies. These young ones are trained from birth to become true canine companions.

What Lilly did was keep her hind legs on the floor and lay her forelegs over the veteran to comfort him. “The dog would not cloister the man but be partially on top of him, to assure him of her presence when the veteran awoke in panic,” Gross says.

If a flashback occurred during the day, Gross continues, Lilly would respond similarly, nudging the man at the onset of the attack, when he started to “zone out.” “I did not train Lilly to do either of those things,” says Gross.

“Correctly bred and socialized dogs just seem to have an inner sense of naturally responding to people in times of emotional turmoil, likely responding to a rise in cortisol and a deep need to comfort a member of the pack.

Helping kids with autism

The process is similar when dogs are being socialized for children with autism. Gross, who has a master’s degree in educational psychology, is working to better understand what’s truly going on between dog and person in these relationships. Gross says almost every child she works with, especially those on the autism spectrum, have a degree of anxiety that’s very hard to control.

“There are many reasons for this, both cultural and intrinsic to the nature of autism,” she says. “Science has discovered that when a child is anxious, their salivary cortisol levels rise, similar to the veteran and his nightmares or his panic attacks on the bus. Researchers in Canada have found that autism assistance dogs help lower their child’s levels of cortisol when they’re together,

and vice versa when they’re apart.”

In the Canadian study Gross mentions, researchers examined children with autism syndrome disorders (ASD) three times—prior to the introduction of dogs, when the children were accompanied by the dogs, and after the dogs were removed from the child’s family. Before the service dogs were introduced, investigators noted a 58% increase in morning cortisol concentration after awakening. The concentration decreased to 10% with the dogs present. The same cortisol concentrations increased to 48% when the dogs were removed. The results lend support for the benefits of service dogs for children with autism, the researchers concluded.¹

“Now that we know that point of fact, physiologically speaking, we can separate the autism field from the psychobabble,” says Gross. “This study moves this neurological difference into a physiological light and shows how the assistance dog really helps.”

And how do they help? “Actually, what the dog is doing when they’re with their child, especially when

they’re in public and their anxiety levels are high, is alerting the child and the child’s caretakers to the rising levels of anxiety or increasing levels of cortisol,” says Gross. “Then the dogs—and this is a part of their socialization as well as the breeding—take over to calm the child down. The dogs want to calm the child, especially when they’re socialized correctly and reinforced by the caretaker for doing so.”

It’s a good time to be doing this kind of work, Gross observes. “I think it’s really blossoming,” she says. “People are going back to the more simple aspects of helping kids with autism.” **dvm360**

Reference

1. Viau R, Arsenault-Lapierre G, Fecteau S, et al. Effect of service dogs on salivary cortisol secretion in autistic children. *Psychoneuroendocrinology* 2010;35(8):1187-1193.

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

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>>> Veterinarians from Veterinary Specialty and Emergency Center in Levittown, Pennsylvania, accepting the award for Practice of the Year. Pictured, from left to right: Rebecca Syring, DVM, DACVECC, Garret Pachtinger, VMD, DACVECC, Shelby Reinstein, DVM, MS, DACVO, and Caleb Frankel, VMD.

Petplan celebrates top dogs in veterinary medicine

Amidst thousands of nominations, six standouts emerged as the winners of Petplan's 2017 Veterinary Awards.

More than 200 people attended the sixth annual Petplan Veterinary Awards Dinner on February 4 in Orlando, Florida, to celebrate the work of veterinary professionals providing extraordinary care to both pets and pet owners. The awards ceremony, emceed by Andy Roark, DVM, MS, coincided with the 2017 North American Veterinary Conference.

Petplan fielded thousands of nominations from the candidates' peers and clients from all over the United States and Canada. The winners were chosen by judging teams consisting of past winners and other leaders in the field of veterinary medicine.

"This year's nominees were such a phenomenal group that the judges had their work cut out for them," says Petplan co-founder and co-CEO Natasha Ashton in a company release. "But while every veterinary professional nominated brings something special to their work, our winners exemplify everything the Veterinary Awards are about. Being able to recognize individuals and teams making such a meaningful impact on pets' lives is truly an honor."

National awards aren't new to Veterinary Specialty and Emergency Center (VSEC) in Levittown, Pennsylvania, which is open and staffed with veterinarians all day, every day, and was recently named a National Trauma Center. According to a release from VSEC, the hospital's Kristen Hoffman won Petplan's 'Practice Manager of the Year' honor in 2014, and Robert Orsher, VMD, DACVS, co-medical director and co-founder of VSEC, has received the Pennsylvania Veterinary Medical Association's Lifetime Achievement Award.

"The entire staff at VSEC/BluePearl PA is humbled and honored to be named the Petplan Practice of the Year," says Orsher in the hospital's release. "Frankly we were thrilled when we learned that we were nominated by our amazing clients. Personally, I am so proud of all of our associates who come to work every day with one goal in mind, to make a better world for pets. We won this award because of their excellence, hard work and dedication." [dvm360](#)

Here is the list of this year's top dogs:

Pet Parent of the Year

Melody Fox, founder of Cause4Paws Pet Food Bank, Phoenix, Arizona

Receptionist of the Year

Amie Zimmerman, Deer Grove Veterinary Clinic, Cottage Grove, Wisconsin

Veterinary Technician of the Year

Purvi Patel, RVT, Laurelwood Veterinary Hospital, Waterloo, Ontario

Practice Manager of the Year

Andy Pertuset, CVPM, Western Carolina Regional Animal Hospital and Veterinary Emergency Hospital, Flat Rock, North Carolina

Veterinarian of the Year

Hilary Wheeler, DVM, CVA, The Whole Pet Vet Hospital, Los Gatos, California

Practice of the Year

Veterinary Specialty and Emergency Center (VSEC), Levittown, Pennsylvania



>>> Hilary Wheeler, DVM, CVA, winner of the Veterinarian of the Year Award, with Ernie Ward, DVM, one of the judges for the veterinarian category.



>>> Purvi Patel, RVT, winner of the Veterinary Technician of the Year award, with Julie Legred, CVT, of the National Association of Veterinary Technicians in America.

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8:00 AM - *Update on Diagnosis and Treatment of USMI*
Dr. Julie K. Byron

9:10 AM: - *Updates on Diagnosis, Staging, and Treatment of CKD in Dogs and Cats* - Dr. Dennis Chew

11:00 AM - *Urinary Tract Infection Treatment and Prevention*
Dr. Gary Oswald

Saturday, May 20, 2017, Room 3DE

1:45 PM - *Stuck in the Stone Age: What you need to know*
Dr. Jody Lulich

3:15 PM - *To Pee or Not to Pee, The Sr. Pet Dilemma*
Dr. Heidi Lobprise

5:00 PM - *Urine soiling behavior? Urinary Disease?
Making the right call* - Dr. Jeff Nichol

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VIN Foundation launches new student debt tool

The online Student Debt Center helps veterinary students understand and navigate their loan and repayment options.

The VIN Foundation, a nonprofit arm of the Veterinary Information Network (VIN) that provides veterinarians and veterinary students with resources and tools, recently launched its Student Debt Center. According to a release from the foundation, the mobile-friendly website is a go-to resource for all things student debt.

With veterinarians facing debt loads that are regularly double their incomes (see more on [page 35](#)) the impetus behind the Student Debt Center is no mystery. Wading through loans and debt, on the other hand, can be much murkier.

"Helping veterinarians understand their borrowing and loan repayment options is key to surviving the crisis," says Toney Bartels, DVM, MBA, VIN student debt expert. "It starts before veterinary school and continues for the duration of loan repay-

ment; this is where the VIN Foundation can help our colleagues climb, survive and thrive no matter how high their debt load."

The VIN Student Debt Center is divided into three main sections:

1. The Cost of Education Map shows how much four years of veterinary school costs by state, differentiating between in-state and out-of-state tuition, and factors in living expenses.
2. The Student Loan Repayment Simulator is a new, interactive tool that uses a veterinary student's family information, anticipated income, loan amount and repayment plan to generate repayment cost comparisons.
3. WikiDebt is an online library of veterinary educational debt resources, including student loan FAQs and worksheets. [dvm360](#)



Over the past decade, student loan debt in the U.S. has doubled (shocker). The interesting new finding: How much you make matters more than how much you owe.

By Mike Dicks, PhD, Ross Knippenberg, PhD, and Frederic Ouedraogo, PhD

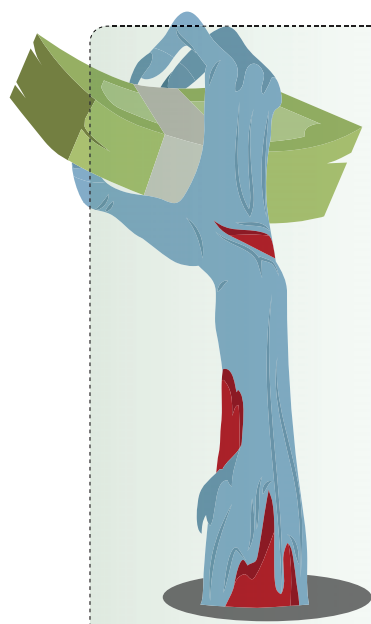
Over the past decade student loan debt in the United States has doubled, with the average student loan amount for a four-year degree clocking in at \$30,100, according to a 2015 report from the Institute for College Access and Success, a nonprofit dedicated to college affordability.¹ But we all know it's worse for those in postgraduate work. The American Veterinary Medical Association (AVMA) estimates that in 2016, mean debt in-

curred by veterinary graduates while they were veterinary college students was \$143,758—that's double the debt from 2005.

Meanwhile, the mean 2016 starting salary for new veterinarians—excluding those participating in internships, residencies or advanced education—was \$73,812, making the debt-to-income ratio for new veterinary graduates just shy of 2-to-1. That ratio makes paying that loan a financial burden.



Source: AVMA Veterinary Economics Division



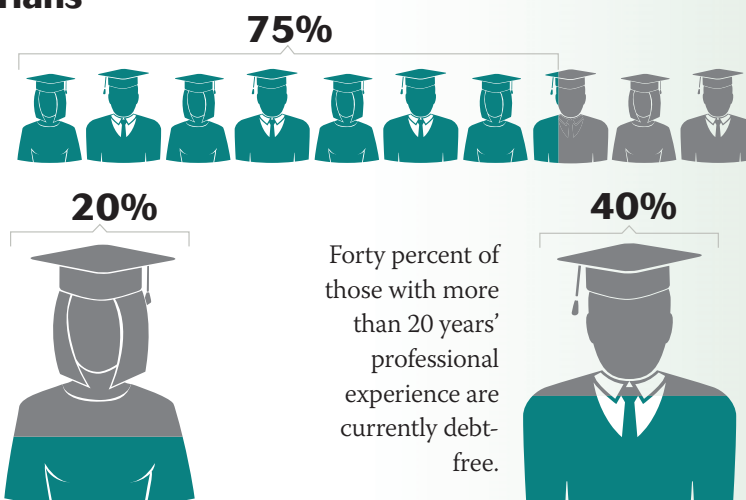
Night of the living debt

How long debt survives for veterinarians

Veterinarians incur different levels of student debt, and they service that debt at different paces of repayment. An analysis of the 2016 AVMA Census of Veterinarians data found that:

More than 75 percent of respondents incurred debt in funding their veterinary education.

Twenty percent of those who graduated between 1996 and 2014 are currently debt-free.



ROBUART; PHOTROYALTY; ARFA ADAM; GALAIRA/SHUTTERSTOCK.COM

Source: AVMA Veterinary Economics Division

To dive deeper into these findings, we looked at survey respondents' employment type, amount of debt held, gender, annual income and other demographic variables to see if they correlated to the pace of debt repayment. We analyzed this information in a "survival analysis" to calculate the "survival time" of debt—the duration between a veterinarian's graduation year and the year when all of his

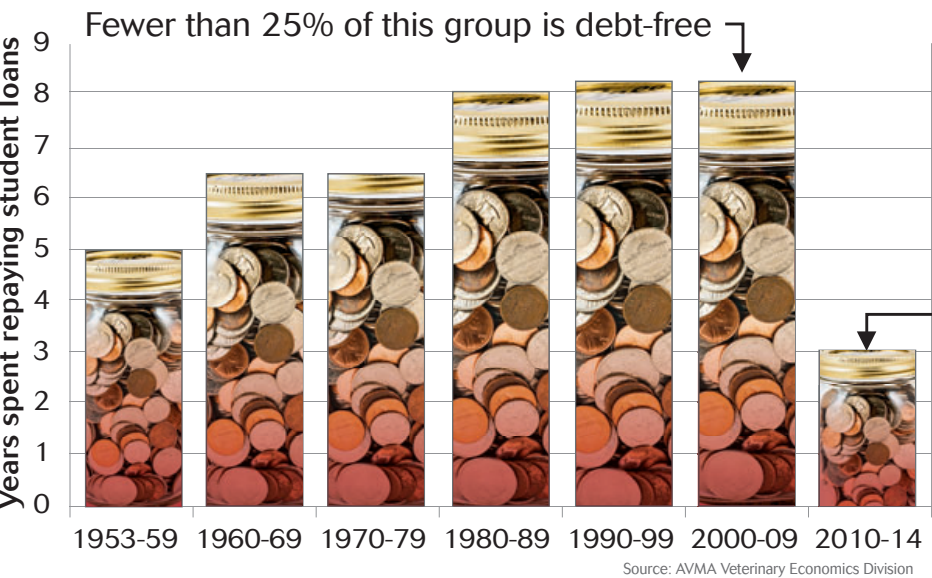
or her student debt is repaid.

Within our sample of 1,277 observations were 435 respondents who said they'd completely paid off their student loans at the time of the survey. The figure below summarizes, by decade of graduation, the average time taken to repay loans and the percentage of respondents who have finished repaying their loans.

Wait. Let's be clear.
*About 60% of veterinarians with more than 20 years' professional experience **still owe**. But for those who've paid off their loans, here's how long it took them to be able to proudly proclaim, "I'm debt-free!"*

For debt-free respondents, here's how long it took to repay student loans by graduation year

If you paid off your student loan, how long did it take?



What happened to the last group?
Only about 10% are debt-free so far, potentially skewing the time to pay off.

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Undead debt: What's keeping it alive?

The condensed results of our survival analysis: The most important factors affecting debt repayment appear to be the initial debt level itself and income at the time of the survey.



These factors decrease your likelihood of repaying debt:

- > 10% increase in debt level
- > Board certification
- > Companion-animal-predominant practice

These factors increase your likelihood of repaying debt:

- > 10% increase in income level
- > Food-animal-predominant practice (more on this on the next page)
- > Mixed practice

An important point—it appears that income has a higher effect on the ability to repay than the level of debt itself. Interestingly, we expected gender to be an important factor in our payback period analysis, but the results did not bear that out.

The data also reveals that food-animal-predominant veterinarians are 75 percent more likely to have cleared their student debt compared with companion-animal-exclusive veterinarians. Companion-animal-predominant veterinarians are 38 percent less likely to have fully serviced their student debt compared with companion-animal-exclusive. We included other practice types in our analysis but the results were not statistically significant.

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Where you (and your debt) live
Regional factors associated with debt repayment

Other important factors affecting debt repayment include board certification and region of the United States. Veterinarians with board certification were 43 percent less likely to have serviced their entire debt compared with their colleagues with no certification, presumably because of the time spent in additional training and associated loan deferment or reduced payments over that period. In addition, veterinarians who work in regions 1, 5, 6, 7 and 8 (referring to the first digit of the ZIP code) all are significantly more likely to have repaid their debt than those in region 0. Regions 2, 3, 4 and 9 were not statistically significant and are omitted from the table.

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Indication: GALLIPRANT (grapiprant tablets) is indicated for the control of pain and inflammation associated with osteoarthritis in 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 kg) 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.
Precautions: 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 has not been studied. Concomitant use of GALLIPRANT 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 when 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 grapiprant) 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:

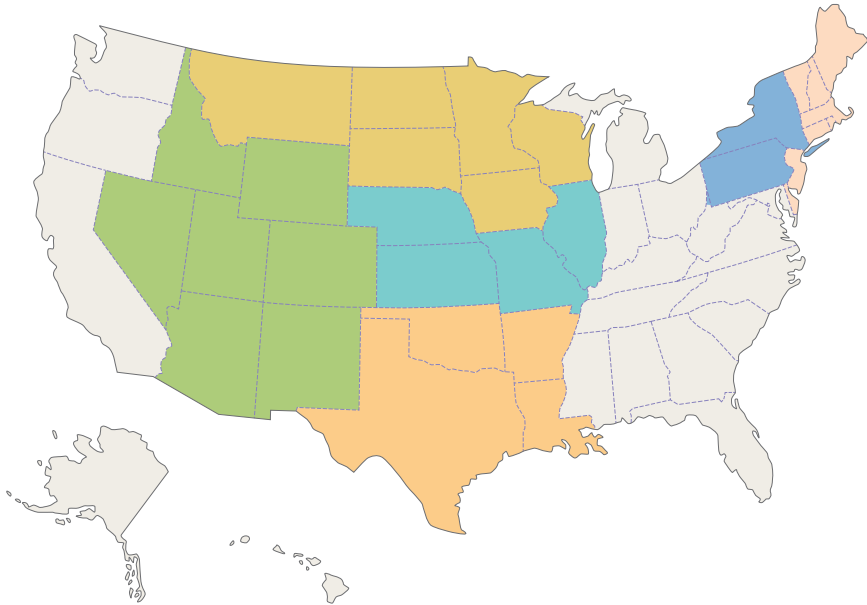
Adverse reaction*	GALLIPRANT (grapiprant tablets) N = 141	Vehicle control (tablets minus grapiprant) N = 144
Vomiting	24	9
Diarrhea, soft stool	17	13
Anorexia, inappetence	9	7
Lethargy	6	2
Buccal ulcer	1	0
Immune mediated hemolytic anemia	1	0

*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.
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.¹ 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.
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Brief Summary: AT1-040-16

Likelihood of repaying debt*



Region 0	Base for comparison
Region 1	62.2%
Region 5	68.6%
Region 6	62.6%
Region 7	68.8%
Region 8	61.6%

*Difference in probability of having paid off student debt at time of survey compared with companion-animal-exclusive veterinarians in region 0.
Source: AVMA Veterinary Economics Division

Income vs. debt: What affects a debt-saddled veterinarian the most?
This analysis considers factors that might affect the pace at which veterinarians pay off their loans. However, because the debt-to-income ratio has risen sharply in the past decade, the analysis might not reflect which factors have greater impact on more recent graduates.
We were interested to find a significant difference in repayment period by practice type, though we offer no hypothesis as to why this occurs. The factors that may contribute to these differences warrant a closer examination.
Our analysis of net present value has shown that income is more important than debt to the overall lifetime value of a DVM degree,² and this analysis further supports that conclusion, showing that income is 1.5 times as important in repaying debt than the veterinarian's

initial debt level. We believe the links between veterinarians’ income, debt and personal wellness levels are unexplored, so it will be interesting to see if the relative importance of income over debt also holds regarding wellness, and whether improving income or debt will yield a greater return on investment for the profession. **dvm360**

References
1. The Institute for College Access and Success. Student debt and the class of 2015. 11th Annual Report, October 2016.
2. Dicks MR, Bain B, Knippenberg R, and Ouedraogo F. 2016 AVMA report on the market for veterinarians. American Veterinary Medical Association October 2016.



Director Mike Dicks, PhD, assistant director of economics Ross Knippenberg, PhD, and economic analyst Frederic Ouedraogo, PhD, all work at the AVMA's Veterinary Economics Division.

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1. 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 treatment of osteoarthritis pain and inflammation, in healthy dogs." Am. J. Vet. Res. 76.10: 853-859.



A former felon has applied to your practice. Now what?

My top advice: Avoid violating anti-discrimination laws the same way you avoid veterinary malpractice claims.

About 30 years ago, shortly after I acquired my first veterinary clinic, my office manager and I were looking to fill a kennel staff position and did what employers did back then: We pulled out a pad of station-

nery store job application forms and put an ad in the newspaper classifieds.

We were impressed during the interviewing period by a young man who spoke well and dressed neatly. However,

his application concerned us—he'd checked the box next to the question, "Have you ever been convicted of a crime other than a minor traffic violation?" When asked, the gentleman was honest and said he'd served time for a drug-related offense about eight years earlier.

Despite our reservations, we hired that applicant and everything went fine for about six months. Then cash started coming up short every morning in the safe. The police were unable to help us, so I hired a private investigator who installed secret cameras late at night. Within three days, we had video of that kennel hire using a coat hanger to extract deposit bags from the safe.

For years after that, I wondered how I could have been so naïve. At the time, giving him a second chance seemed like the right thing to do. If I were put in this position today, things would be entirely different—and I don't mean I would be less

naïve or sympathetic toward that job applicant. I can't say if I would or I wouldn't.

The difference hinges not on me or my experience but on the fact that the New York Human Rights Law prohibits the use of crime conviction check boxes on job applications. And in New York, as in a number of other states, it is now discriminatory to fail to interview or hire a job applicant solely because he or she has a previous criminal conviction.

Anti-discrimination laws

The developing and increasingly inclusive anti-discrimination laws throughout the United States are in large part designed to encourage the hiring of individuals with criminal records in order to keep them from becoming dependent on society or from returning to illegal activities as a means of support.

These objectives are pursued through the enactment of two types of

laws, which exist at both state and city levels (New York City's Human Rights Law is even stricter than the state of New York's, for example).

First, many states have passed a category of legislation often referred to as "ban-the-box" laws, which prohibit the use of application forms that inquire about the criminal past of a job applicant. In other words, the process of choosing whom to interview must be done without any prior inquiry into an applicant's criminal background.

An applicant's criminal history can be brought up later—sometimes during the interview and sometimes after a background check—but the decision to interview cannot be influenced by previous criminality. A simple Google search can tell you if your state is a "ban-the-box" state. It can also give you a heads-up if such laws are in the process of moving through your state or city legislature.

Second, more and more states also



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require businesses to demonstrate that applicants aren’t being denied job offers on the basis of their criminal histories. Employers must be able to demonstrate that an applicant hasn’t been summarily passed over for having a former felony, but that doesn’t mean they must be summarily hired either.

So what’s a hiring veterinarian or practice manager to do?

You can avoid civil or criminal liability for potentially violating such laws the same way you avoid malpractice claims: copious documentation. Record as much as possible during the interview. Make thorough notes of your questions and the applicant’s answers. It’s also a good idea to always have a second interviewer present who can testify to the fact that the interview was carried out with due consideration of anti-discrimination laws—and not just those that apply to felons.

You can also avoid violating anti-discrimination laws by considering each item on the following list, which was provided by the state of New York but has broad applications. Doing so can help you logically think through your hiring decision and demonstrate nondiscriminatory behavior toward former felons in the event that your hiring practices are

called into question.

- 1. The interest of the state in moving forward its public policy
- 2. The age of the job applicant at the time of her criminal conviction
- 3. The seriousness of the crime
- 4. The amount of time that has passed since commission of the crime
- 5. Any information provided by the applicant indicating that he has been rehabilitated
- 6. The nature of the specific job duties
- 7. The bearing that the nature of the crime has on the position being sought
- 8. The employer’s legitimate interest in maintaining a safe workplace.

Empire State learnings

A recent case law in New York has established that even if the state agrees that the decision not to hire a former felon was not improper, an employer can be guilty of violating its human rights law if they cannot prove they made the decision after giving due consideration to each of the eight guidelines above.

The takeaway? Be as careful and scrupulous in your hiring documentation as you are in your medical record keeping. **dvm360**

Editor’s note: Still need help? Check out *The Essentials of HR at CVC in Virginia Beach, May 18-21. Visit thecvc.com/VB to learn more.*

Please tell us you don’t ask these ...

By Mark Opperman, BS, CVPM, and Sheila Grosdidier, RVT

Managers can avoid charges of racism, sexism, ageism and a lot of other “ism”s by avoiding questions about these topics when they interview job applicants at your veterinary practice:

- > Changes to an applicant’s name, unless you need the information to check his or her past work record
- > Birthplace
- > Religion
- > Race or skin, eye or hair color
- > Citizenship status
- > Ancestry or national origin
- > Age or birth date, unless you need to prove that an applicant meets the legal age requirements
- > Names of clubs, societies, lodges, organizations or other social groups to which the applicant belongs
- > Sexual orientation
- > Marital status
- > Number of dependents
- > Health, including all questions pertaining to physical or mental disabilities.

Want a longer list of prohibited practices in hiring? Visit the U.S. Equal Employment Opportunity Commission website at **eeoc.gov**. Get an easy list questions you should never ask from Opperman and Grosdidier’s book *The Art of Veterinary Practice Management, Second Edition*, at **dvm360.com/donotask**.



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.

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Warning: Repeated use of meloxicam in cats has been associated with acute renal failure and death. Do not administer additional injectable or oral meloxicam to cats. See Contraindications, Warnings, and Precautions for detailed information.

Brief Summary: Before using Loxicom Oral Suspension, consult the product insert, a summary of which follows.

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

Description: Meloxicam is a non-steroidal anti-inflammatory drug (NSAID) of the oxicam class.

Indications: Loxicom Oral Suspension is indicated for the control of pain and inflammation associated with osteoarthritis in dogs.

Contraindications: Dogs with known hypersensitivity to meloxicam should not receive Loxicom Oral Suspension. **Do not use Loxicom Oral Suspension in cats. Acute renal failure and death have been associated with the use of meloxicam in cats.**

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. **For oral use in dogs only.** As with any NSAID all dogs should undergo a thorough history and physical examination before the initiation of NSAID therapy. Appropriate laboratory testing to establish hematological and serum biochemical baseline data is recommended prior to and periodically during administration. To report suspected adverse reactions, to obtain a Material Safety Data Sheet, or for technical assistance, call Norbrook at 1-866-591-5777.

Precautions: The safe use of Loxicom Oral Suspension in dogs younger than 6 months of age, dogs used for breeding,

or in pregnant or lactating dogs has not been evaluated. As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. Sensitivity to drug-associated adverse effects varies with the individual patient.

Patients at greatest risk for renal toxicity are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully approached. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such anti-prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Since NSAIDs possess the potential to induce gastrointestinal ulcerations and/or perforations, concomitant use with other anti-inflammatory drugs, such as NSAIDs or corticosteroids, should be avoided or closely monitored. The use of concomitantly protein-bound drugs with Loxicom Oral Suspension has not been studied in dogs. Commonly used protein-bound drugs include cardiac, anticonvulsant and behavioral medications. The influence of concomitant drugs that may inhibit metabolism of Loxicom Oral Suspension has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy.

Adverse Reactions: Field safety was evaluated in 306 dogs. Based on the results of two studies, GI abnormalities (vomiting, soft stools, diarrhea, and inappetence) were the most common adverse reactions associated with the administration of meloxicam. Of the dogs that took meloxicam (n=157), forty experienced vomiting, nineteen experienced diarrhea/soft stool, five experienced inappetence, and one each experienced bloody stool, bleeding gums after dental procedure, lethargy/swollen carpus, and epiphora. Of the dogs that took the placebo (n=149), twenty-three experienced vomiting, eleven experienced diarrhea/soft stool, and one experienced inappetence. In foreign suspected adverse drug reaction (SADR) reporting over a 9 year period, incidences of adverse reactions related to meloxicam administration included: auto-immune hemolytic anemia (1 dog), thrombocytopenia (1 dog),

polyarthritis (1 dog), nursing puppy lethargy (1 dog), and pyoderma (1 dog).

Effectiveness: The effectiveness of meloxicam was demonstrated in two field studies involving a total of 277 dogs representing various breeds, between six months and sixteen years of age, all diagnosed with osteoarthritis. Both of the placebo-controlled, masked studies were conducted for 14 days. All dogs received 0.2 mg/kg on day 1. All dogs were maintained on 0.1 mg/kg oral meloxicam from days 2 through 14 of both studies. Parameters evaluated by veterinarians included lameness, weight-bearing, pain on palpation, and overall improvement. Parameters assessed by owners included mobility, ability to rise, limping, and overall improvement. In the first field study (n=109), dogs showed clinical improvement with statistical significance after 14 days of meloxicam treatment for all parameters. In the second field study (n=48), dogs receiving meloxicam showed a clinical improvement after 14 days of therapy for all parameters; however, statistical significance was demonstrated only for the overall investigator evaluation on day 7, and for the owner evaluation on day 14.

How Supplied: Loxicom Oral Suspension 1.5 mg/mL: 10, 32 and 100 mL bottles with small and large dosing syringes.

Storage: Store at controlled room temperature 68-77°F (20-25°C). Excursions permitted between 59°F and 86°F (15°C and 30°C). Brief exposure to temperature up to 104°F (40°C) may be tolerated provided the mean kinetic temperature does not exceed 77°F (25°C); however such exposure should be minimized.

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Please see brief summary on page 42


Norbrook[®]



Urgent, important or neither?

The customer controls more of your veterinary practice than you think. It's time to sort out your priorities and understand what will fix that 20 percent loss of clients most businesses experience.

As the iconic businessman and entrepreneur Sam Walton said many years ago, "There is only one boss: The customer. The customer can fire everyone in the company ... simply by spending his

money somewhere else."

One of the best things about retirement is the freedom to do what you want when you want. As veterinary professionals, we are familiar with setting priorities. Some things are

urgent and important. Some are not urgent nor are they important. Some things are important but not urgent. Unfortunately, many of us, myself included, have a tendency to spend most of our time on things that are



not urgent or very important.

Being retired from practice, I have relatively few demands on my time that cannot be adjusted, ignored or completed with ease. Living in Anguilla is an ongoing struggle against the call of sea and salt. But some of my activities and tasks fall into the “important” category even if they’re not all that urgent—yet.

For example, running out of gas at midnight is urgent and important. Running low on gas at 3 p.m. is important but not urgent. One of the things I enjoy most about my days is the ability to increasingly focus on things that are important but not urgent, such as reading “just because.” I am constantly amazed by how much I don’t know or, if I ever did know it, have forgotten completely.

I have been cleaning my desk and donating books to the library. During this process, I’ve come across a number of books by one of my favorite marketing and management

gurus, Peter Drucker. I started flipping through some of these old books and realized that virtually everything he espoused remains true, even more than 10 years after his death. My favorite Drucker quote? “The purpose of a business is to attract, make and keep a customer.”

With the advent years ago of computerized veterinary practice management systems, we can instantly determine a vital practice number: new clients. This measurement of client recruitment makes us all feel understandably good. But recruitment is only part of the success equation. How many customers are we losing?

According to business author Shellica Brooks-Johnson, the average business loses up to 20 percent of customers annually by failing to take care of customer relationships. We all know the cost in time, money and lost revenue of obtaining a new customer. What we don’t know as well is that customer attrition may be an even big-

4 ways to prioritize the customer

In this column I frequently discuss the steps you can take to help customers feel special. You can find them all at dvm360.com/paul, but in the meantime, here are some top pointers:

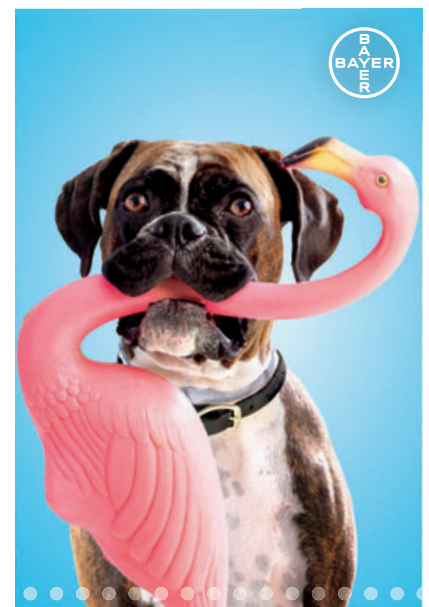
- 1 Develop and nurture customer relationships.
- 2 Always provide exceptional customer service, not just good service and not just most of the time. Exceptional and always.
- 3 Actively pursue customer feedback—not so much from your good customers as from your average customers. We often hear from our happy customers and occasionally from those who are dissatisfied. But most average customers don’t complain when they’re unsatisfied—they just leave.
- 4 Take care of your strongest marketing force: your staff.

ger biggest business cost.

In the food service industry, many customers leave an establishment not because the food is bad or even because of poor service, but rather because they perceive an attitude of indifference on the part of staff members. This may be our biggest loss in veterinary practice, yet few people really track it objectively.

I have always believed that, while the product or service we deliver is important, the experience of our customers is vital. Make sure you can set priorities according to what’s important, what’s urgent and what’s both in order to gain control of higher-priority tasks in your practice as well as your life. And if you haven’t read Peter Drucker’s work, do so. If you have, reread it. I plan to. dvm360

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





On call and ticked off

Dr. Greenskin is finally ready to set Dr. Codger straight on what she really thinks about some of the ways he does business in his veterinary clinic. Nothing can hold her back now—except for the intercom.

As much as Dr. Greenskin wants to spend just a bit more time possibly deliberating about maybe taking on perhaps a little more responsibility at the hospital, she hasn't had an opportunity to sit down and think through it yet. Yes, she's being wishy-washy. And keep in mind that Dr. Codger's generation places tremendous value on decisiveness.

The prospect of becoming more invested in both her profession and the clinic is exciting but terrifying. Dr. Greenskin is a cautious planner. Deciding whether or not to make a

any dues to people nearing their expiration date. Call it a paradigm shift, but Dr. Greenskin expects people to work hard for the sake of doing right by patients, clients and coworkers, not to prove their mettle to more seasoned colleagues.

Nevertheless, twice a day on her on-call weekends and holidays, poor Dr. Greenskin sucks it up and heads over to the clinic to take care of the boarders. As for those after-hours emergencies, having to instruct pet owners how to restrain patients for blood work and radiographs in the absence of other staff raises ethical

boarding profits all add up and factor into the price she will have to pay to get a piece (or all) of the business.

Greenskin is beginning to wonder if it makes sense to buy into something she doesn't wholeheartedly support. Her other options are to change her own views on the subjects or come up with a creative rearrangement that makes things more palatable.

In a bit of a pickle

As Dr. Greenskin mulls over the situation in between scribbling in her paper charts, good Dr. Codger strides into the break room to grab a crunchy dill pickle (which are always well-stocked). This room is lovingly referred to by clinic employees as "the dungeon." It's hard to pinpoint whether it's the Civil War-era mold spores on the baseboards or the 1950s fiberglass kennels that have taken on a new life as employee cubbies that give the room its distinct utilitarian flair.

Dr. Codger is all smiles and praise while gnashing on the pickle. On this day, however, something gives him pause in his attempts to convince his associate to pick up the reins. She has a different air about her.

Meanwhile, Dr. Greenskin is getting up her nerve. She breaks the silence, her voice wavering: "I need to have a very serious talk with you, Dr. Codger."

At that instant, the intercom phone system crackles loudly. It's the new head veterinary assistant. "I need both doctors in the treatment area right away! Something is going really, really wrong. I think this might be an emergency!" Dr. Greenskin bolts and Dr. Codger hobbles out of the vinegar-scented dungeon.

Will this conversation ever take place? Or will it just get swept under the rug again? Will there ever be 10 minutes without an animal or human crisis so the two doctors can make some forward progress? [dvm360](#)

Having a tough time adjusting to your old crotchety employer? Is your inexperienced associate just not fitting in? Send stories, ideas and comments to dvmnews@ubm.com

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

The prospect of becoming more invested in her profession and the clinic is exciting but terrifying. Dr. Greenskin is a cautious planner. Deciding whether to make a huge business investment is going to take serious focus and time. Part of what's been slowing Dr. Greenskin down is Dr. Codger's antiquated views about emergencies and on-call duties.

huge business investment is going to take serious focus and time—we're talking years.

Time isn't the only hindrance, however. Part of what's been slowing Dr. Greenskin down is an issue so blatantly problematic she's been unable to utter a word about it to Dr. Codger—namely, his antiquated views about emergency medicine, boarding animals and on-call duties.

Weekend? What weekend?

Dr. Codger doesn't see a need to pay additional kennel staff on the weekends since he's compensating an on-call doctor. (To clarify, if it's written in the contract, that means the doctor is being compensated. Fairness of the rate is another matter.) Doc Codger talks constantly about how he worked by himself for the first several decades of building the business—so them young'uns gotta pay their dues!

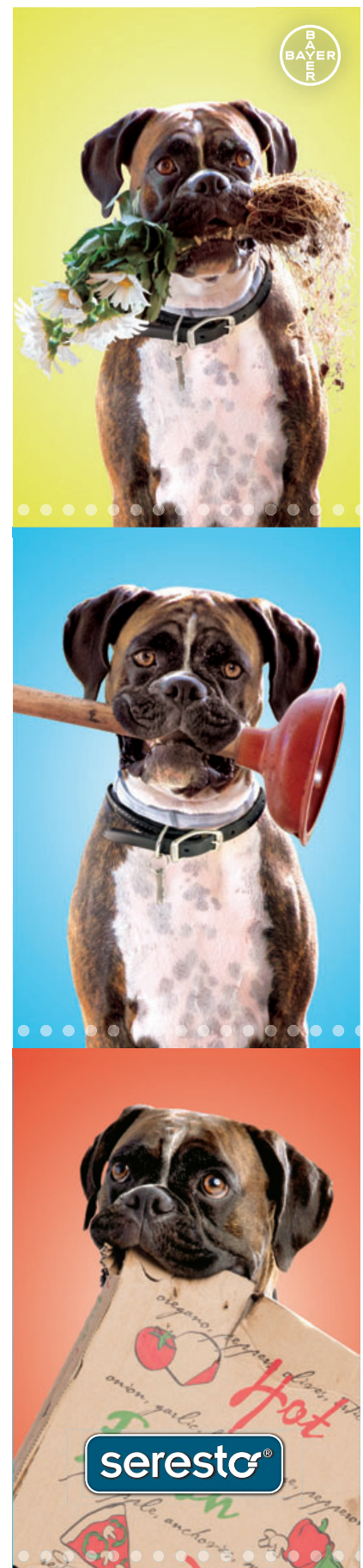
Interestingly, not once has young Dr. Greenskin suggested that newer veterinarians or team members owe

and legal concerns for the young doctor—not to mention how unnerving it is to be by herself at 2 a.m., even with the "best" clients.

The short end of the stick

Given that the practice is only two docs deep, Dr. Greenskin's seemingly perpetual newbie status has earned her the brunt of this unfortunate arrangement. When Greenskin first took the job, being on call didn't seem like a big deal. Now that she's settled in, even the nights she doesn't get called in are becoming more of a burden. When Greenskin reviewed last year's calendar, she was unable to enjoy so much as a sip of her favorite pinot grigio for months on end. And if her exorbitant expenditures on Amazon movies from the past year are any indication, her social life is suffering.

Dr. Greenskin is starting to consider these issues in the context of possibly owning the practice in the future. She knows that clinic valuation is based on gross income and profitability. The shoestring emergency services and problematic





Religious discrimination when hiring a new veterinary associate

A job candidate is offered a lowball salary at this veterinary hospital when the schedule conflicts with his religious beliefs. The hiring manager swears it's all about the bottom line. Whose side are you on?

County Pet Care Clinic started small. Today, 18 veterinarians and 22 technicians work seven days a week to care for the ever-burgeoning pet care population in a bustling suburb outside of New York City.

Dr. Lee Hodge started working as an associate at the clinic 16 years ago, though he currently acts as medical director. Dr. Hodge's ability to spot applicants with both excellent medical judgment and interactive people skills was a big part of the clinic's success. He is a straight shooter and his coworkers know him to be honest and fair.

Dr. Hodge recently interviewed five veterinarians for three positions at his clinic. He was impressed with their medical credentials and saw that they were willing to be flexible to accommodate the hectic practice workload. He liked them all, so

he made a job offer to each of the candidates—with a salary variation for only one.

This veterinarian, Dr. Osborn, had told Hodge that he could work any schedule, including Sunday shifts, but could not work Friday evenings or Saturdays. The position Dr. Osborn was offered had an 8 percent lower starting salary than his two identically qualified colleagues.

When he realized what had happened, Dr. Osborn scheduled a second meeting with Dr. Hodge to discuss this inequity. He told Dr. Hodge that his inability to work on the Sabbath was a result of the principles of his religious beliefs. While he understood that it was an inconvenience, he felt his availability to work on Sundays made up for his Sabbath absence. He went on to mention, diplomatically, that he felt that Dr. Hodge was guilty of reli-

gious discrimination because he was effectively penalizing Dr. Osborn for observing his religious beliefs.

Dr. Hodge didn't take offense to Dr. Osborn's accusation, and chose to offer an explanation from another perspective. He noted that veterinary medicine is a unique hybrid: on the one hand, it is the practice of medicine with all the compassion and charity that is associated with the healing arts. On the other hand, it is a business venture that must function efficiently in order to be able to provide medical services.

A veterinarian able to work high-traffic Fridays, Saturdays and Mondays, as well as night shifts, was more valuable to the business end of the County Pet Care Clinic. Religious restrictions were never a consideration, Dr. Hodge said. In fact, he made it a point not to inquire about the religious or philosophical beliefs of his



staff. It simply was not his business. He reiterated to Dr. Osborn that he was impressed with his skills and would like him to accept the compensation package he was offered and come on board.

Dr. Osborn understood. But he said he believed that we live in an increasingly global, diverse world, one where religious convictions and cultural mandates should be explored and incorporated into the fabric of the modern veterinary workplace. By showing no interest and, in effect, disavowing staff diversity and lifestyle mandates, Dr. Osborn thought Dr. Hodge was in fact displaying a passive—not an active—religious and cultural prejudice.

The two agreed to disagree and Dr. Osborn turned down Dr. Hodge's offer of employment.

Do you agree with Dr. Hodge or his veterinary applicant?

Rosenberg's response

I don't agree with Dr. Hodge. His prime directive seemed to be the bottom line. But he used tunnel vision to achieve it.

Our veterinary workforce is culturally and religiously diverse. Dr. Hodge's decision will probably be more profitable in the short term, but in the long term his resistance to offering equal pay to those with life-choice variations will decrease the talent pool available to his veterinary facility. Ultimately, to increase your bottom line you need a top-of-the-line staff. [dvm360](#)

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



Share your opinion

Have you faced a similar situation? What should the job seeker and the practice owner do?

One reader writes:

"I'm just curious if the staff is smaller on the weekends and if hiring someone who can't work Saturdays or Friday evenings would force other employees to take these shifts more often. My other thought—why doesn't the individual seek employment in a five-day-a-week setting?"

Agree? Disagree? Share your thoughts at [dvm360.com/hiringdilemma](#).

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Buyer beware on internship opportunities

While it may seem like an ideal coaching situation, this ‘veterinary practice owner internship’ may not benefit the participants as much as the directors.

As a practice owner and former intern I read with great interest the article “Veterinarian launches ‘Practice Owner Incubator Internship’” in the February issue of dvm360 magazine. There is no doubt that veterinary graduates often lack the formal training and business skills to successfully purchase and manage a veterinary practice. Dr. Michael Dicks, the AVMA’s lead economist, has cited a lack of business training as one reason why some veterinary practice owners continue to struggle financially.

The word “internship” associated with this endeavor drew my attention. Veterinary internships are criticized for having no governing body, no accountability, no oversight and no quality control—truly a “buyer beware” marketplace. After reading this article and consulting the American Association of Veterinary Clinicians’ Veterinary Internship and Residency

Matching Program website regarding this “internship,” I’m concerned that it is potentially the poster child for these valid concerns.

From what I understand, the intern, after completing the internship (having been paid intern wages), will earn the privilege of purchasing 20 percent of a practice. They will then work diligently to increase the profitability and value of the practice but only be entitled to 20 percent of the practice’s net profits. Worse yet, when and if they buy out the additional 80 percent, they will likely have to pay for 80 percent of the practice’s increased value, which they themselves will have created.

Wouldn’t it be a better financial option for this veterinarian to find the financial backing that would allow them to buy their own practice and reap all the financial benefits of being a practice owner? After all, if this internship provides the financial and

managerial skills necessary to purchase and operate a practice (as it says it will), the intern should no longer need their hand held and should not have anyone’s hands in their financial pockets. I would call this “internship” an ingeniously creative stream of income for the internship director and his business partner.

The take-home lesson is this: Whether you’re purchasing all or part of a practice, always use an independent, savvy financial advisor who will represent your financial interests and your interests alone. Since the intern director and his business partner will be financially benefiting from this particular relationship, this is especially important in this circumstance. And remember the internship process is the modern-day equivalent of the wild west. Be careful, and remember, caveat emptor—let the buyer beware.

— Name withheld upon request

Strong political opinions hurt and devalue the team

Everyone is entitled to their opinion, sure, but balance in communication can be achieved.

In response to the article “The veterinarian stuck on a soapbox” (February 2017), I am a licensed veterinary technician (LVT) in a small clinic that consists of two veterinarians, two LVTs and two receptionists. The two doctors are strongly in favor of one political party and make their views heard throughout the hospital. Remarks are made almost daily against

the “other side.” The two LVTs voted against the party the doctors favor and are subjected to hearing derogatory comments. We keep silent but both have talked about how uncomfortable it makes us feel. We feel stifled and do not feel we can voice our values and opinions without feeling devalued. As a result, we keep silent.

—Anonymous LVT



MEDICINE | Imaging

Be the life of the party!

Make radiology friends and influence ER visits

OK, so you're not much of a party animal? No worries. Rachel Pollard, DVM, PhD, DACVR, offers some friendly radiology tips for life in the ER. *By Hilal Dogan, BVSc*

Like successful socializing at a cocktail party, radiology in the ER benefits from a planned strategy of attack. Consider these hacks and facts from Rachel Pollard, DVM, PhD, DACVR, at her recent talk on imaging in the ER at CVC:

Let's get ready to mingle!
"Hey, who's here?" When you go to a party, where's the first place you go? Probably the bar. But then after that you look for people you know. Find the things that are supposed to be there. This is the "find your friends" tactic.

For example, if you are looking at the abdomen, find the stomach (the most cranial gas bubble); identify the liver, spleen, kidneys and bladder; and follow the intestinal loops as best you can. It helps to identify the familiar structures you know are supposed to be there



>>> You don't have to be a party animal to know a thing or two about ER visits.



DERMATOLOGY **M4**

Don't make these mistakes in your atopy cases

PARASITOLOGY: TICKS **M6**

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first, says Dr. Pollard.

Next, be sure to note if there is anyone who doesn't look like they should be there. Basically, who's the weird old guy at the party (e.g. that suspicious lump in the abdomen)?

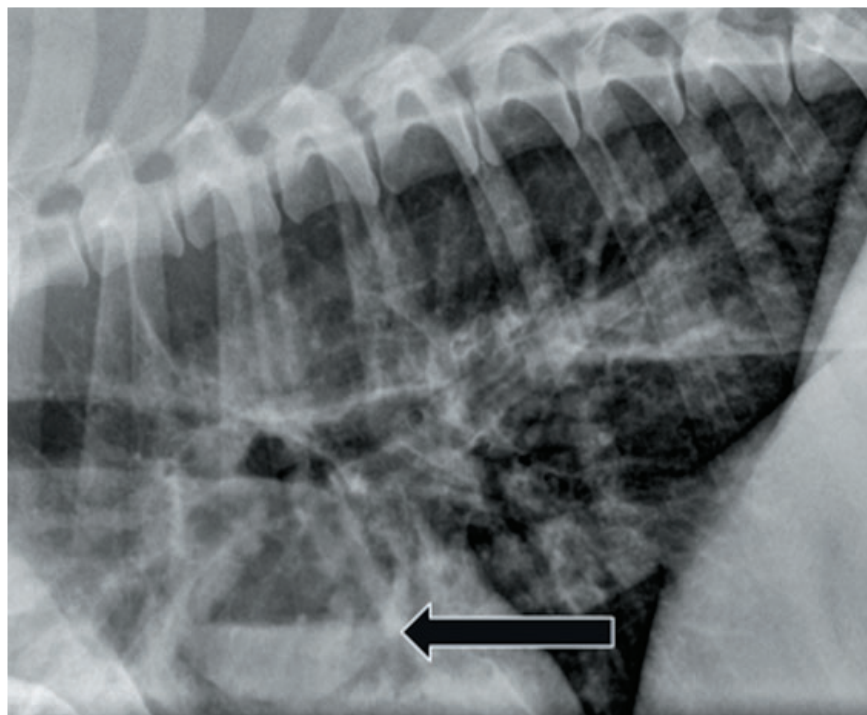
"Weren't Bill and Ted supposed to come?" If a couple of your friends are missing from this party (or you can't see them very well), consider where they may have gone. This might indicate what's wrong.

Say you're evaluating the abdomen and you can't find the spleen or the bladder. This could indicate there's fluid in the abdomen—reduced abdominal serosal detail results in boarder effacement. Remember—it's common to not see the right kidney in a bigger dog, says Dr. Pollard.

Next, note if there's a reason the friends are absent. Could they have a good reason for not being there, such as a possible splenectomy? Bladder trauma could cause the bladder to be missing, resulting in a uroabdomen. What about hemorrhage? In a trauma patient, these two are the most likely reasons for your friends to be missing.



>>> **Figure 1.** Free air



>>> **Figure 2.** Horizontal beam radiography

3 critical updates in ER medicine



Justine Lee, DVM

At a recent CVC, we asked Justine Lee, DVM, DACVECC, DABT, about new approaches in the area of emergency

medicine. Her tips:

1. Don't use a shock fluid dose (60 to 90 ml/kg). Go with around 20 to 30 ml/kg and reassess frequently so you don't have to compensate for volume overload.
2. Use less steroids. What's needed in shocky patients is perfusion, which means fluid therapy in most cases. Steroids don't help.
3. Fine-tune your feline emesis protocol. "There is no safe emetic you can use at home for cats," says Dr. Lee. They're going to have to come see you, and a new study recommends giving dexmedetomidine intramuscularly (7 µg/kg).

Get more of Lee's tips at dvm360.com/ERupdates.

What to drink? 2 urinary tract tips

1. In the case of a ruptured bladder it's very hard to identify a tear in the bladder ultrasonographically. Why? Because after a tear or rupture, the bladder can come back together or fold on itself. So if you don't see a hole in the bladder wall on an ultrasonographic examination, especially in the case of ureteral ruptures, it doesn't mean it's not there, says Dr. Pollard. If you're unsure of the integrity of the urinary tract, a radiographic contrast study is best. For contrast material, nonionic iodinated contrast is more expensive than ionic iodine contrast material. However, nonionic contrast material is less irritating to the organs and tissues and should be used when you're worried about ruptures.
2. When obtaining urethrograms, it's best to take a series, because one view can be difficult to interpret on its own. Dr. Pollard's advice: Inject some contrast, take a radiograph, move the catheter, inject some more, take another radiograph, and so on. Take at least three views to help interpret your urethrograms.

Go with your gut impression—6 abdominal tips

1. Obtain three views of the abdomen including right lateral, left lateral and ventrodorsal projections. Dr. Pollard says she used to find this cumbersome, but now she appreciates the information gained from the left lateral, particularly when trying to evaluate the pylorus. She says it's essential for identifying foreign material and masses in the stomach and really helps confirm diagnoses.
2. Consider two big causes of a portion of bowel looking spastic or corrugated (angry): There's either inflammation inside (enteritis) or outside (e.g. peritonitis, pancreatitis). Do not confuse this with plication.
3. A mass in the abdomen that contains gas patterns is almost always an abscess or is intestinal in origin (possibly a hepatic abscess, splenic abscess or intestinal mass).
4. Gas with sharp edges is likely a pocket of gas, that is not contained in bowel. If you see gas with sharp edges, especially near the diaphragm, be suspicious of free abdominal air (Figure 1, above). Free abdominal air is typically emergent and arises from penetrating wounds or ruptured bowel. You can use ultrasound to confirm the presence of free abdominal air. Gas interface has a hyperechoic interface with a dirty gray shadow, not a black shadow as you would see with a mineral origin shadow.
5. When performing abdominal ultrasonographic examinations, try to look at every organ every time. The



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²Beata C, Beaumont-Graff E, Coll V, et al. Effect of alpha-caseozepine (Zylkene) on anxiety in cats. *J Vet Behav*. 2007;2(2):40-46.

³Kruger JM, Lulich JP, MacLeay J, et al. Comparisons of foods with differing nutritional profiles for long-term management of acute nonobstructive idiopathic cystitis in cats. *J Am Vet Med Assoc*. 2015;247(5):508-517.

⁴Lulich JP, Kruger JM, MacLeay JM, et al. Efficacy of two commercially available, low-magnesium, urine-acidifying dry foods for the dissolution of struvite uroliths in cats. *J Am Vet Med Assoc*. 2015;243(8):1147-1153. Average 27 days *in vivo* study in urolith forming cats.

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Chewable Tablets

Brief Summary: Please consult full package insert for more information.

INDICATIONS: Tri-Heart® Plus chewable tablets are indicated for use in prevention of canine heartworm caused by *Dirofilaria immitis* and for the treatment and control of ascarids (*Toxocara canis*, *Toxascaris leonina*) and hookworms (*Ancylostoma caninum*, *Uncinaria stenocephala*, *Ancylostoma braziliense*) in dogs and in puppies 6 weeks of age and older.

PRECAUTIONS: All dogs should be tested for existing heartworm infection before starting treatment with Tri-Heart® Plus chewable tablets. 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.

ADVERSE REACTIONS: The following adverse reactions have been reported following the use of ivermectin at the recommended dose: depression/lethargy, vomiting, anorexia, diarrhea, mydriasis, ataxia, staggering, convulsions and hypersalivation.

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

HOW SUPPLIED: Tri-Heart® Plus chewable tablets are available in three dosage strengths for dogs of different weights. Each strength comes in convenient packs of 6 chewable tablets.

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only time that you image a single organ is at rechecks.

6. When you're using horizontal beam radiography (see Figure 2, previous page), the x-ray source is rotated so that it shoots horizontally across the table. The detector is also moved to the opposite side of the table and must be secured or held in place. This technique can be performed with the patient in sternal recumbency (to look for fluid lines in pulmonary lesions as might be seen with an abscess) or in left lateral recumbency (to look for free abdominal air).

Get everything off your chest—14 thoracic tips

1. For pulmonary patterns, Dr. Pollard uses a process of elimination instead of the “find your friends” tactic mentioned above (although you can also use this method). Her process of elimination involves:
 - First look for an alveolar pattern. The two hallmarks are air bronchograms (think trees in the fog) and a clearly defined lung lobe margin (lobar sign).
 - Then look for a bronchial pattern. Think doughnuts and tram lines.
 - Lastly, look for an interstitial pattern, where you see too much opacity in the lungs but it is not an alveolar or bronchial pattern. A hallmark of this pattern is the loss of small vessel visibility in the periphery.
2. If you do try the “find your friends”

approach in the chest, find the heart, lungs and pulmonary vasculature (artery, bronchus and veins—the veins are central and ventral).

3. Always take three radiographic views of the chest as well—a right lateral, a left lateral and ventrodorsal or dorsoventral.
4. Pneumonitis is a vascular permeability issue from a systemic inflammatory process, such as leptospirosis or pancreatitis. It results in noncardiogenic pulmonary edema. Edema typically forms in the caudodorsal and perihilar regions of the lungs, whether it's cardiogenic or not, says Dr. Pollard.
5. Aspiration pneumonia can affect any of the cranial lung lobes. It tends to be ventral.
6. With acute-onset heart failure, the lung pattern can be more diffusely distributed, but edema still tends to be heaviest in the caudodorsal lung.
7. When you take lateral views of the lungs, the left lateral view shows the right lung (or the up lung) and vice versa.
8. Pulmonary vasculature is better outlined on a dorsoventral view. With a dorsoventral view, the cardiac silhouette also sits at a more normal position. In fact, for cardiac assessment, dorsoventral views are better for evaluation.
9. With lung lobe torsion you can see an alveolar pattern in the torsed lung lobe. The hallmark of lung lobe torsion (or abscessed lung lobe) is the vesiculated gas pattern in the

lung, sort of like a sponge. Often a hemorrhagic component is present within the pleural fluid when lung lobe torsion is present.

10. If ventrodorsal and dorsoventral views are taken and the thoracic opacity changes in location, it's most likely pleural effusion (fluid), says Dr. Pollard. And if the opacity doesn't change, then you're more likely dealing with pulmonary infiltrate.
11. When there is a heavy alveolar pattern affecting all lobes on one side of the thorax, pulmonary hemorrhage should be very high on your differential list.
12. Rodenticide toxicosis likes to hemorrhage into “potential spaces,” says Dr. Pollard, such as the mediastinum, the tracheal wall and the retroperitoneum.
13. In deep-chested dogs the trachea should deviate away from the spinal column. This is not true for all dogs, but definitely for deep-chested big dogs.
14. Finally, Dr. Pollard says to remember that a chest radiograph can still look normal in a coughing dog with infectious or non-infectious inflammatory airway disease (bronchitis). [dvm360](#)

Hilal Dogan, BVSc, is an associate at At Home Animal Hospital in Maui, Hawaii. She started the Veterinary Confessionals Project as a senior veterinary student at Massey University in New Zealand.

Don't make these mistakes in your atopy cases

Veterinary dermatologist Melissa Hall wants to make sure you're not just scratching the surface of this common dermatologic disease.

Allergy season is upon us, so more pruritic dog and cat appointments may be popping up on your schedule. When it comes to atopic dermatitis, Melissa Hall, DVM, DACVD, from the Animal Dermatology Clinic in Tustin, California, wants you to avoid these blunders:

1. **Scheduling too little time.** One of the primary mistakes general practice veterinarians make when treating canine atopic dermatitis is trying to squeeze the initial appointment into a traditional time slot. This doesn't leave

enough time to get a full history or get into the nitty-gritty of what a particular client and patient require. “It's important to realize with these cases that each one is individual and the disease is multifactorial,” Hall says.

You'll most likely be providing several different therapies in conjunction to get control of the dog's itching and make it more comfortable, so allow yourself enough time to work up the patient thoroughly.

2. **Not educating the client.** Because atopic dermatitis is such a com-

plex disease, client education “is super important,” Hall says. Again, this means taking extra time. Whether you're talking about repairing the barrier function with topical therapy, suppressing the immune system to help control the itch, or treating secondary malassezial and staphylococcal infections, clients need time to absorb and understand it all.

So what's the good news? “Education will improve your client compliance,” Hall says—and that means less suffering and discomfort for your patient. (Always a good thing.) [dvm360](#)







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What do clients have in common with their dogs?

Well, they're hosts, for one. Do your clients realize that they can be sitting ducks for ticks, just like their pets? If not, use these tips from a top parasitologist to bring them up to speed.

When it comes to ticks, pets and people can be in the same boat—susceptible to tick-transmitted disease and unknowingly in prime position for tick bites. Every hike in the woods, walk on a

trail or even hour in the backyard gives ticks a chance to infect people and their loved ones (both two- and four-legged). Use these insights from veterinary parasitologist Richard Gerhold, DVM, MS, PhD, to start your

clients' educational journey into the nasty world of ectoparasites.

Acute and chronic symptoms of *Borrelia burgdorferi* symptoms in people and dogs

The hallmark of acute-stage Lyme disease, Gerhold says, is erythema migrans. This skin lesion affects approximately 60 percent of people who contract Lyme disease. In fact, some researchers hypothesize that erythema migrans is actually the host's neutrophils trying to "keep up" with the *Borrelia* bacteria as it shoots along the skin seeking to dive into deeper tissues—the immune system is "chasing" the invader, trying to prevent that from happening, which shows up as the classic bull's-eye rash.

On the chronic side of the disease, Lyme can cause a range of clinical signs, cardiac issues, respiratory problems, neurologic changes and arthritis among them. One person might experience nothing but a behavior change such as extreme aggressiveness, and someone else could have heart problems. It's similar with dogs—some will have shifting leg lameness, while others only develop nephritis.

What's the deal with deer?

Though the research is still somewhat inconclusive, generally it's accepted that white-tailed deer do not host *Borrelia burgdorferi*, Gerhold says. It's actually small rodents—voles and white-footed mice—that are reservoirs for the bacteria. And when tick nymphs and larvae feed on these rodents, they pick up that bacteria, Gerhold says.

But don't write off deer. They are important because they're the main host for the adult-stage tick. If a female tick feeds on a deer, falls off and lays 8,000 eggs—well, there's your next generation of Lyme disease. So high deer populations (such as those in hunting areas, state parks and suburbia) mean high levels of Lyme.

That "summertime flu" isn't what you think

Ever heard someone say they had the "summertime flu"? Well, that's impossible, Gerhold says—influenza virus cannot be transmitted in the summer. However, all tick-borne diseases cause flulike symptoms. So if someone says they've had the summertime flu, it's highly likely they had a tick-borne disease and then recovered. [dvm360](#)

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New veterinary physical rehabilitation facility center opens in South Florida

Hydrotherapy, gait analysis and more.

Attention veterinarians in the sunshine state: Lauderdale Veterinary Specialists (LVS), a veterinary specialty and emergency hospital for pets that serves the Broward, Palm Beach and Miami Dade counties in Florida, has added to its specialty services with a state-of-the-art physical rehabilitation center.

In addition to the many specialty services the hospital provides that you can already refer your patients for—emergency, critical care, internal medicine, neurosurgery, neurology, ultrasound, computed tomography, digital radiography, bereavement counseling, and soft tissue, orthopedic and reconstructive surgery—the center will enhance the hospital's current physical rehabilitation services.

“Our goal by building this physical rehabilitation center is to supplement the other specialty services offered at LVS, while hopefully helping patients to regain the same quality of life they enjoyed before their injury or ailment,” said Dr. Ira Zaslow, a board-certified veterinary emergency and critical care specialist, and founder of LVS in a release. “Studies have shown that just like with humans, pets that undergo physical rehabilitation during their recovery process see a much better return to normal gait function and locomotion.”

The center features hydrotherapy in the form of a water treadmill as well as a gait analyzer treadmill, a dry treadmill and other equipment used in rehabilitation therapy for dogs and cats.

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References: 1. Data on file, Study Report No. C863R-US-12-018, Zoetis LLC. 2. Gonzales AJ, Humphrey WR, Messamore JE, et al. Interleukin-31: its role in canine pruritus and naturally occurring canine atopic dermatitis. *Vet Dermatol.* 2013;24(1):48-53. doi:10.1111/j.1365-3164.2012.01098.x. 3. Data on file, Study Report No. C362N-US-13-042, Zoetis LLC. 4. Data on file, Study Report No. C961R-US-13-051, Zoetis LLC.

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Heartworm Q&A:

What do I need to know about heat-treating samples?

Dr. Byron Blagburn lays out the basics for practicing veterinarians—if you suspect heartworm infection but get a negative antigen result, consider heat-treating the sample.

One of the more interesting developments to arise recently in the area of diagnosing heartworm disease is the use of heat treatment in testing. Researchers have found that applying heat to antigen-negative serum samples will sometimes cause antigens to “show up,” reversing the negative result to positive. They suspect that antigens bind with heartworm antibodies that are also circulating in the blood, forming immune complexes that

aren’t detected by standard antigen tests, and heat breaks down these bonds.



Byron Blagburn, PhD

During the American Heartworm Society’s recent triennial symposium in New Orleans, Byron Blagburn, PhD, parasitologist at Auburn University, answered questions about heat treatment with a focus on what practicing veterinarians need to know.

Question: What should veterinarians know about heat treatment of serum samples in heartworm testing?

Answer: Immunoreversal, antigen blocking, the concept of disassociating antigen and antibody—this is actually not new. Many heartworm tests that were first introduced into the market had a mandated step in which you disassociated antibodies using an enzyme or acid. The problem was that most veterinarians did not want to incorporate that step—it was too complicated—so the manufacturers eliminated it.

But in light of recent research at Oklahoma State University, we have come to refocus on heat treatment. If you’re a practicing veterinarian, the

question is, how do you embrace this concept and apply it? And I think it’s pretty simple: If you have a suspicion of heartworm in a patient and get a negative antigen test result, then heat treatment is a good idea. If a dog presents in a heartworm-endemic area or has been shipped from a heartworm-endemic area, or if a dog is suggestive of heartworm disease based on testing and radiographs, and yet it’s antigen-negative, that patient might be a candidate for heat treatment.

Also, veterinarians often have questions about compliance with heartworm prevention or the number of doses administered. In these cases some worms might be dying and others aren’t, so they induce antibody responses that bind up antigen and cloud the issue. These dogs also might be candidates for heat treatment.

Question: What do we know about heat treatment of serum samples in cats?

Answer: Feline heartworm infection definitely remains confusing, and that’s because it’s so atypical. Cats present with diseases in ways that are very different from dogs. And because cats have low heartworm burdens, they’re much more likely to be antigen-negative. But there’s evidence that the reversal phenomenon works for feline serum too—heat treatment of feline samples in which you suspect infection may convert the results to

heartworm-positive status.

An important point regarding feline heartworm: When you heat-treat antibody-positive serum, you increase the number of antigen positives and there’s a better correlation between antigen and antibody. And that makes sense. The point is that combining heat treatment and antigen and antibody tests will get you closer to a more accurate result. **dvm360**



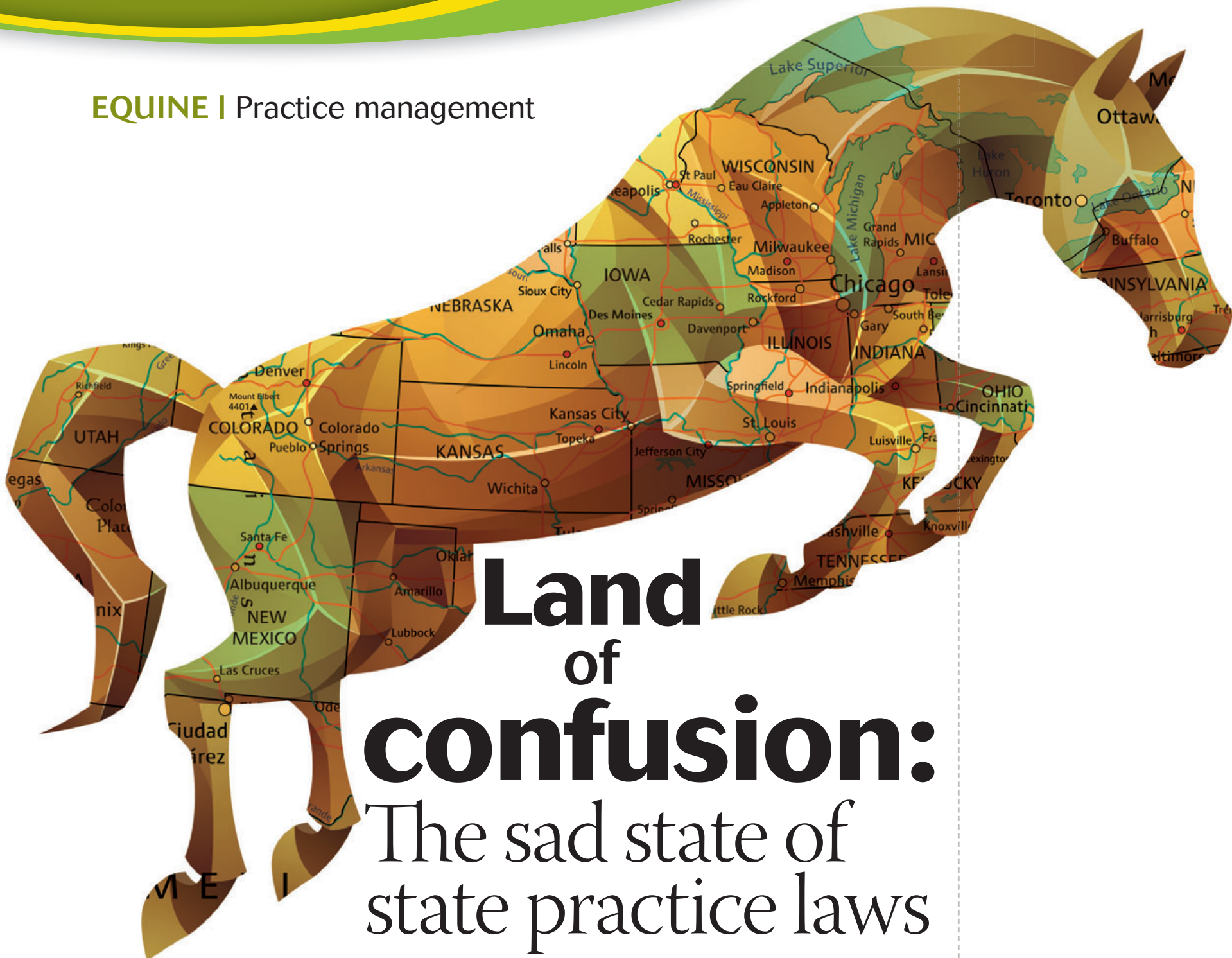
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EQUINE | Practice management



Land of confusion: The sad state of state practice laws

Horses: They're not big dogs or skinny cows. So state veterinary practice acts need to set separate regulations to guide who can offer medical care for equines—and how. *By Kyle Palmer, CVT*

Depending on where you live, your state's veterinary practice act may be a detailed and thoughtful roadmap for all practitioners, especially newer graduates. Or it may be a confusing, ineffective and misleading set of gradually evolved thoughts on the part of the authors.

The problem is that we live in a country of 50 very different, and in many ways legally independent, states. To date, there's no one set of ideals, restrictions, permissions or practices that have any overall effect. The American Veterinary Medical Association (AVMA) has long published a model veterinary practice act that—if

adopted—would resolve many of these concerns. And the model practice act has evolved as new issues arise requiring consideration. It's obvious that many states pay attention to the AVMA document, as they have adopted specific passages from it. But few have embraced the entire document.

Like most legislation, state practice acts grow and change over time, and the direction they change seems tied to the practice area that draws the most public attention: companion animal practice. As the human-animal bond flourishes in many households across the country, the focus is on pets. But

what happens to equine practice, which is awkwardly positioned somewhere between companion animals and livestock?

The lack of specific direction for equine practitioners has not only made daily decisions more confusing, it's also allowed—directly or indirectly—non-veterinarians to become involved in equine health.

Many state practice acts establish the definition of “animal” in a way that includes horses—in some cases defining animals as any living organism other than a human. Unfortunately, many also use confusing, if not outright different, definitions for various

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Meconium aspiration syndrome in foals

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types of animals. In reviewing the practice acts in our 50 states, I found some trends that rise to the surface. For the sake of equine practice, we need to revisit them.

The VCPR

By now, we should all be familiar with the term “valid client-patient relationship” (VCPR—also referred to as the “veterinarian-client-patient relationship”) and its purpose in our profes-

Many also use the term “food animal” to ensure that horses are addressed as a companion animal rather than other livestock. Regardless, equine practitioners looking for detailed, specific direction to establish a VCPR may struggle to find this information.

The lay dentist

When it comes to confusing or absent legislative definitions, no area of equine practice has received more

dentistry most often deals with occlusion, while companion animal dentistry deals more often with diseases of the tooth and surrounding structure (though occlusion is also a problem). By direct statement, by implication or simply by silence on the issue, it seems that effecting occlusion in a horse is viewed by some as less important than effecting occlusion in a companion animal. That’s a concept many veterinarians would disagree with.

When it comes to confusing legislation definitions, no area of equine practice has received more attention than dentistry.

sion. Simply put, it exists to ensure that veterinarians establish a level of knowledge of a patient before providing certain services to that patient, such as prescribing medications and ordering treatments.

In many cases, establishing a VCPR requires conducting a thorough physical exam. And in some of those cases, the list of what must be examined is difficult to comply with for horses. When the exam fields include weight and abdominal palpation, it’s obvious they had companion animals in mind. Some states with such language have finally added “or weight estimate for large animals” and “auscultation if applicable by species.”

Perhaps most confusing is the fact that many VCPR statements allow for a different standard when dealing with livestock “herds” or “large operations,” without defining what those terms mean. And many of them specifically include horses in their definition of livestock. Most statements that include this language to establish the VCPR allow the practitioner simply to maintain an ongoing familiarity with those operations by visiting the property. This opens the door for practitioners to skip the physical exam step in horses. While this is understandable for livestock that can’t be closely handled, it seems odd to leave horses in this category.

At least one state practice act clears up this confusion by stating a detailed physical exam must occur when an “individual animal” is presented for consideration. This separates typical horse ownership from other livestock.

attention in recent years than dentistry. Specifically, what’s considered dentistry? Who can practice it and under what circumstances? You don’t need to look far to find a region where nonveterinarians perform some form of equine dentistry.

Unfortunately, many state practice acts define “dentistry” in companion animal practice terms. Cleaning, scaling, polishing, altering the tooth structure and using composite material are procedures most commonly used on companion animals. And dental radiography, although not excluded from equine practice, is more typically found in companion animal dentistry. Some practice acts do use the term “teeth floating” to separate equine dentistry, but many also use ambiguous language to define who can perform the service.

Sadly, some states outright allow nonveterinarians to float equine teeth. There’s no doubt that some nonveterinarians out there can float teeth professionally and effectively. And there are also likely nonveterinarians who could diagnose a multitude of other needs and probably know the proper treatment to resolve those issues. But that wouldn’t be allowed in any state.

Ultimately, the question goes back to how horses are viewed legally. Are they livestock animals, which commonly need maintenance tasks performed on them without great thought to how that maintenance might affect them medically (excluding farrier work)? Or are they individual animals with specific medical needs that can have a deep impact on their health?

In the simplest of terms, equine

What’s the solution?

To resolve how equine practice is viewed by state practice acts, equine practitioners must find a way to speak collectively. While the American Association of Equine Practitioners (AAEP) has released position statements on many contentious topics, including dentistry, state boards still have the legal authority to do as they please.

Every state practice act needs to determine, with clarity, in what category they consider equine practice. And preferably the distinction would remain independent of companion animal practice and of livestock practice. Beyond that, stating clearly who has the authority to perform certain procedures and what the expectations are for those procedures might make it easier for veterinarians to practice in multiple states or to relocate from one state to another. Finally, the idea that nonveterinarians are skilled enough to impact serious medical conditions without the direct supervision of a veterinarian (at a minimum) is an idea worth reconsidering.

In addition to lobbying the AAEP, veterinarians should use regional practitioner associations and individual state veterinary medical associations as sounding boards for better definition in these legal guidelines. Write letters to the state examining board and to your local legislators. Until one voice becomes louder, these problems likely won’t be resolved. [dvm360](#)



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

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>>> Dr. Holly Mason of Utah State University School of Veterinary Medicine recommends that equine veterinarians attend every foaling to check for signs of meconium aspiration syndrome and other potential life-threatening problems in neonates.

Meconium aspiration syndrome in foals

When a foal becomes hypoxic in utero, a vicious cycle can ensue. Here's a look at meconium aspiration syndrome prevalence and treatment in foals, as well as learnings from other species. *By Ed Kane, PhD*

On the morning of April 12, 2016, the incomparable racing mare Zenyatta gave birth to her fourth foal. Though described as a “textbook” delivery, the foal was stained with meconium and died a day later of meconium aspiration syndrome (MAS).

Meconium—the dark, sticky feces foals first pass—is composed of gastrointestinal secretions such as bile, pancreatic enzymes and mucus, desquamated cells, lanugo, vernix caseosa, water, amniotic fluid and other cellular debris. Although sterile, meconium is locally irritative and obstructive and is a medium for bacterial culture.^{1,2}

Fortunately, aspiration caused by the release of meconium in utero is rare in

horses. “The literature is limited on the number of cases per annum, and if you asked veterinarians to guess the number of foals affected, their answers would vary based on their type of caseload,” says Holly Mason, MS, DVM, clinical assistant professor at Utah State University School of Veterinary Medicine. “A neonatologist working in a neonatal intensive care unit may give you a higher number because they’re given the most challenging cases, but having foaled out several hundred mares, I can recall only two or three cases of MAS.”

A vicious cycle

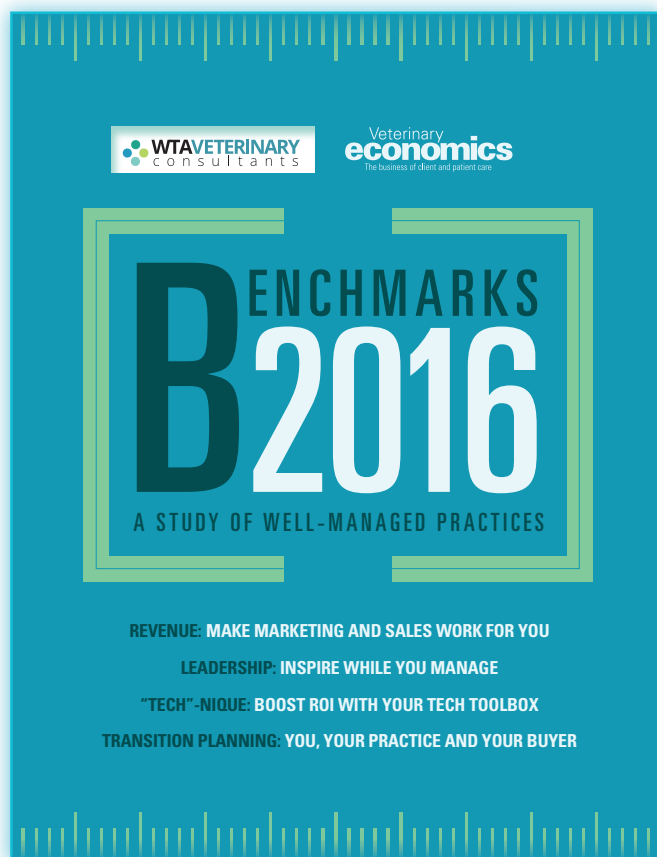
According to Kent Scarratt, DVM, DACVIM, associate professor at

Virginia-Maryland College of Veterinary Medicine, anything that would cause a hypoxic event in a foal can cause the release of meconium in utero. Potential triggers include compression of the umbilical blood vessels, placentitis and placental insufficiency.

When a foal becomes hypoxic in utero, a vicious cycle can ensue. Hypoxemia can stimulate gastrointestinal peristalsis that passes meconium in utero. It can also trigger the foal to reflexively gasp for air and aspirate meconium and amniotic fluid into its lungs.

When aspirated, meconium is considered a toxin due to its damaging

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>>> On the morning of April 12, 2016, the incomparable racing mare Zenyatta (pictured above) gave birth to her fourth foal. Though described as a “textbook” delivery, the foal was stained with meconium and died a day later of meconium aspiration syndrome (MAS).

effect on surfactant and lung tissue, Mason says. Meconium also occludes the airways, from the upper airway to the alveoli. “Meconium can act like a one-way valve,” Mason explains. “During inspiration, air may be able to pass through a partial obstruction and fill the deeper portion of the lungs. But in the expiratory phase, air can become trapped behind the meconium obstruction and accumulate to the point where it ruptures lung tissue, causing a pneumothorax.

“Neonatal foals are delicate creatures and are unlikely to fend off the effects of meconium aspiration without—and sometimes even with—veterinary

intervention,” Mason continues. “Even if we consider meconium a sterile substance, there is likely to be a bacterial infection associated with aspiration.”

Treatment

Proactive treatment of MAS starts with good broodmare management and the ability to recognize and treat problems as they arise during late gestation and through parturition, Mason says. “It’s not normal for a foal to pass meconium while still in utero,” she explains. “Hence, when it does occur it’s a strong indicator of periparturient fetal distress.”

For this reason Mason recommends that equine veterinarians attend each

foaling. If the mare needs assistance during delivery, the veterinarian can act quickly to mitigate fetal stressors. Even if parturition appears uneventful, it’s critical to identify signs of meconium exposure immediately postpartum, she says—signs typically include a mustard-colored hue to the amnion, to nasal discharge or to any nonpigmented hair.

Though meconium staining is not a guarantee that meconium was aspirated, only that a foal was exposed, veterinarians who observe it should consider diagnostics and treatment to prevent MAS, Mason continues. Prophylactic antimicro-

bial therapy and careful monitoring typically ensure good health. In those rare cases in which aspiration occurs and severe pneumonia develops—as indicated by abnormal vital signs, a leukogram or diagnostic imaging studies—a much more guarded prognosis is appropriate.

MAS cases may present a particular challenge for mobile equine veterinarians. “Once meconium aspiration is suspected or confirmed, appropriate aggressive treatment is often difficult for ambulatory practitioners because of the supportive care and diagnostics the foal requires,” Mason explains. “Ambulatory practitioners may wish to refer these cases to a well-staffed and better-equipped veterinary facility.”

Scarratt notes that treatment will depend on how quickly a veterinarian recognizes signs of MAS after the foal’s birth. “If a veterinarian observes the foaling or is foaling the mare out and notices meconium staining as the foal exits the birth canal, suction can be used to aspirate the meconium from the nose and pharynx,” he says. “An affected foal would likely show signs of respiratory distress within hours of being born.”

Because MAS foals have pneumonia and difficulty absorbing oxygen into their bloodstream, oxygen supplementation is a mainstay of treatment, Scarratt says. Antibiotics are often administered to prevent and treat bacterial pneumonia resulting from aspiration of meconium, and anti-inflammatory drugs such as flunixin or firocoxib are indicated to minimize inflammation in the lungs. Scarratt also uses gastroprotectant drugs such as omeprazole or ranitidine to minimize the possibility of gastrointestinal ulceration, which is occasionally seen in a foal being treated with an anti-inflammatory agent.

“Supportive care is also critical,” Scarratt concludes. “It’s important to make sure the foal has absorbed an adequate amount of antibodies from the colostrum and that the newborn continues to receive adequate nutrition from its mother. If the foal is not adequately hydrated, it may require intravenous fluids.”

MAS in humans

MAS occurs in human infants much more frequently than in foals. One research team notes that meconium-stained amniotic fluid is present in

about 15 percent of deliveries and leads to MAS in 10 to 15 percent of those cases, typically in term and post-term infants.³ Other investigators estimate the fatality rate to be between 5 and 40 percent.⁴

In human medicine it is fairly common to induce labor or to deliver a meconium-affected fetus via cesarean section to try to get the fetus out as soon as possible—a strategy that does not translate well to equine care.

“Unlike human neonatology, induction of parturition in the mare is likely to result in dystocia, retention of fetal membranes and a foal that does very poorly as a neonate,” Mason says. “For this reason, I can only recall a few cases in my two decades of foaling experience in which induction was undertaken.”

In Mason’s experience, most practitioners choose to “wait out” an overdue mare rather than create a likely problem with an intervention.

According to human literature, physicians have tried amnioinfusion, in which 800 ml to 1 liter of sterile saline is infused in utero in an attempt to dilute the meconium, without much success. But lucinactant (Surfaxin—Discovery Laboratories) has been found to be beneficial in replacing damaged lung surfactant.⁵

MAS in other animal species

Meconium aspiration is also seen in other animal species, including piglets, calves and dolphin calves. In piglets, meconium staining is associated with fetal hypoxia, stillbirths, weak piglets and neonatal mortality.⁶ Researchers also note that hypoxia leads to visceral redistribution of fetal blood, increased peristalsis and relaxation of the anal sphincter that eventually prompts defecation in utero, along with violent inspiratory movements with an opened glottis causing aspiration of meconium-containing amniotic fluid.⁶ These piglets either die in utero or survive only to die days later after succumbing to postnatal MAS.

In one study of 52 calves that died from infectious and non-infectious disease within the first two weeks of life, 42.5 percent of calves had meconium, squamous cells or keratin in the lungs. The researchers also note that intrauterine aspiration of meconium is one of the most common events preceding abortion in bovine fetuses

and that severe and prolonged intrauterine hypoxia can lead to aspiration of meconium and amniotic fluid by these fetuses.⁷

Remarkably, there has been a case of MAS “due to fetal hypoxia possibly associated with true knot of the umbilical cord in a bottlenose dolphin calf”—the first reported case. The researchers write that MAS due to “perinatal asphyxia should be taken into account as a possible cause of neonatal mortality and stillbirths of (dolphin) calves.”⁸

A sobering story and testament

The passing of Zenyatta’s foal is a sad reminder of the ups and downs experienced by those with a passion for the thoroughbred industry, Mason says. “Unfortunately, the loss of a foal, a mare unable to conceive or carry to term, or a foal that does not live up to expectations are all common events in the broodmare industry,” she says. “These misfortunes serve as a testament to the dedication and drive of farm managers, owners and veterinarians that love what they do.” **dvm360**

References

1. Swarnam K, Soraisham AS, Sivanandan S. Advances in the management of meconium aspiration syndrome. *Intl J Pediatr* 2012;2012:1-7.
2. van Ierland Y, de Beaufort AJ. Why does meconium cause meconium aspiration syndrome? Current concepts of MAS pathophysiology. *Early Hum Dev* 2009;85(10):617-620.
3. Hermansen CL, Lorah KN. Respiratory distress in the newborn. *Am Fam Physician* 2007;76(7):987-994.
4. Xu H, Wei S, Fraser WD. Obstetric approaches to the prevention of meconium aspiration syndrome. *J Perinatol* 2008;28(Suppl 3):S14-S18.
5. Wiswell TE, Knight GR, Finer NN, et al. A multicenter, randomized, controlled trial comparing Surfaxin (Lucinactant) lavage with standard care for treatment of meconium aspiration syndrome. *Pediatrics* 2002;109(6):1081-1087.
6. Castro-Nájera JA, Martínez-Burnes J, Mota-Rojas D, et al. Morphological changes in the lungs of meconium-stained piglets. *J Vet Diagn Invest* 2006;18(6):622-627.
7. Lopez A, Bildfell R. Pulmonary inflammation associated with aspirated meconium and epithelial cells in calves. *Vet Pathol* 1992;29(2):104-111.
8. Tanaka M, Izawa T, Kuwamura M, et al. A case of meconium aspiration syndrome in a bottlenose dolphin (*Tursiops truncatus*) calf. *J Vet Med Sci* 2014;76(1): 81-84.

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



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Veterinarian charged with plot to drug horses before races

Kyle James Hebert allegedly schemed to influence race outcomes by doping horses with “frog juice.”



A Louisiana veterinarian has been charged with engaging in a scheme to influence the outcome of horse races by illegally treating the animals with a synthetic version of a drug known as “frog juice,” according to a recent news report from the Associated Press.

According to the report, the federal indictment accuses the veterinarian, Kyle James Hebert, DVM, of providing trainers with syringes of dermorphin, an opioid roughly 30 times more potent than morphine that is naturally secreted by tree frogs native to South America, to inject the painkiller in at least four horses that compete at Louisiana racetracks. The indictment, returned February 9 by a grand jury in the Western District of Louisiana, says Hebert told trainers that the mislabeled drug would make the horses “focus” and run faster.

The report notes that the U.S. Food and Drug Administration hasn’t approved any drug containing dermorphin for use in humans or animals.

Hebert’s practice, Southern Equine Sports Medicine, operates veterinary clinics in Lake Charles and Sunset in the state of Louisiana. The indictment charges him and an Omaha, Nebraska-based company, Kohll’s Pharmacy & Healthcare Inc., with conspiracy,

according to the AP report.

Hebert is licensed to practice veterinary medicine at racetracks by the Louisiana State Racing Commission. In 2012, the commission sanctioned nine trainers whose horses tested positive for dermorphin, according to the report.

The indictment says Hebert purchased approximately \$25,000 worth of the mislabeled drug from Kohll’s between November 2010 and May 2012. Kohll’s invoices falsely identified the drug as “d-peptide,” a fictitious name, according to the indictment.

One of the sanctioned trainers told the commission that Hebert gave drugs to his horses and had claimed they were “human herbs that would boost metabolism and help them breathe a bit,” according to a *Times-Picayune* report in September of that year.

Charles Gardiner, the commission’s executive director, says he believes the indictment secured by U.S. Attorney Stephanie Finley’s office marks the first criminal charges over the use of dermorphin at Louisiana racetracks. Gardiner says 11 horses linked to the nine trainers tested positive for the drug. He calls it “the most serious offenses in the history of Louisiana racing,” according to the report.

“It endangered the horses, it affected the outcome of races and it defrauded the wagering public,” Gardiner says in the report.

Hebert is accused of falsifying invoices for his veterinary services to conceal that the drugs were provided to trainers on race days, according to the report. Racing commission regulations prohibit anyone from injecting any substance into a horse within four hours of a race. The indictment says Hebert and his employees instructed trainers to perform injections one hour before race time.

Steven Barker, PhD, MVSc, a professor emeritus from Louisiana State University’s School of Veterinary Medicine, oversaw lab tests for dermorphin on samples collected from racing regulators in both Louisiana and Oklahoma, the report states.

Barker says the use and concealment of performance-enhancing drugs has always been a “cat and mouse game” in the horse racing industry. But its rate of positive drug tests is low compared to “human athletic endeavors,” he says in the report.

“The actual number of cases where there appears to be an obvious attempt to gain an advantage is very small, Barker says in the report. [dvm360](#)

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Mars Veterinary Feline DNA test

Mars Veterinary has launched a feline genetics test under the Optimal Selection brand. The test, developed by Genoscooper Laboratories of Finland, provides veterinarians, cat owners and breeders a comprehensive view of a cat's genetic health and well-being to enable proactive and sustainable breeding programs. The Optimal Selection test is a swab-at-home kit that screens for more than 25 genetic mutations causing inherited feline diseases and tests for traits such as coat color and length and morphology. The results reporting system allows users to review the cat's health analysis on an online portal and features a breeder tool that helps identify potential mates based on a health results score for compatibility.

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SwedenCareUSA Dental care bones

SwedenCareUSA has launched PlaqueOff System Dental Care Bones, which deliver dental prevention in the form of a tasty treat that dogs gobble it up. The bones are 100 percent natural and contain an environmentally sustainable kelp ingredient. Free of grain and gluten and highly digestible, the bones provide a daily dose of PlaqueOff in a chew treat. They are suitable for dogs of all sizes. One bone equates to one serving for large breeds and two servings for smaller breeds. Four flavors are available: meat-free Vegetable Fusion, Chicken & Pumpkin, Turkey & Cranberry and Natural Bacon.

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Rayence/MyVet Imaging is introducing a new line of digital imaging systems. The MyVet i72w system is an elevating digital radiography table that lowers to the floor, allowing easy access for large animals. The elevation motors are designed to be noise-free, lessening the fear an animal may experience from raising or lowering the table. Its 40-72-inch subject-to-image distance (SID) allows for accurate measurement of body parts, in particular, heart size. The unit offers an upright stand for weight-bearing horizontal beam digital imaging studies and is powered by a 32-kw generator to assure full penetrability of all body parts.

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Veterinarian Recommended Solutions Liver supplement

Veterinarian Recommended Solutions has launched Hepato TruBenefits, a liver supplement sold exclusively through its partner veterinary hospitals. The product was formulated as a response to veterinarians' concerns over the high price and low patient compliance of leading liver supplements on the market. Hepato TruBenefits is currently undergoing two clinical studies. It is also being used in specialty hospitals and general practices across the country. Each batch is tested to ensure label claims are valid and to assess for pathogenic bacteria and will not be shipped to pet owners until test results are received and verified.

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CareCredit Distribution partnership

CareCredit, a pet healthcare financing company, has entered an agreement with Henry Schein Financial Services, a subsidiary of Henry Schein. Under the agreement, CareCredit will provide patient financing services integrated with Henry Schein's practice management software programs—AVImark, ImproMed Infinity and ImproMed Triple Crown. The added feature will make it easier for veterinary practices to offer financing options that help pet owners receive needed care and services. The partnership will also include co-marketing programs and collaboration on value-added services, and the patient financing services will be promoted by Henry Schein's field sales consultants.

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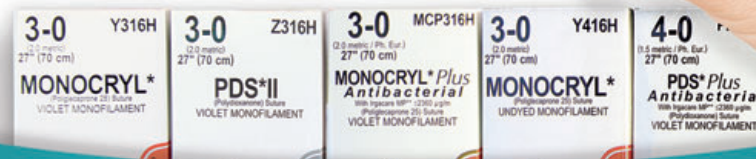
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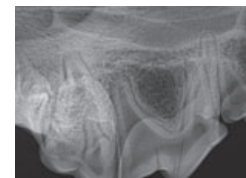
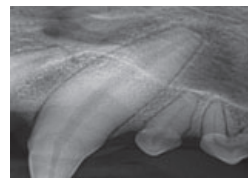
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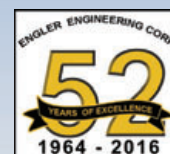
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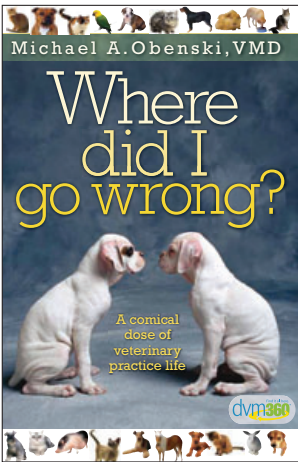
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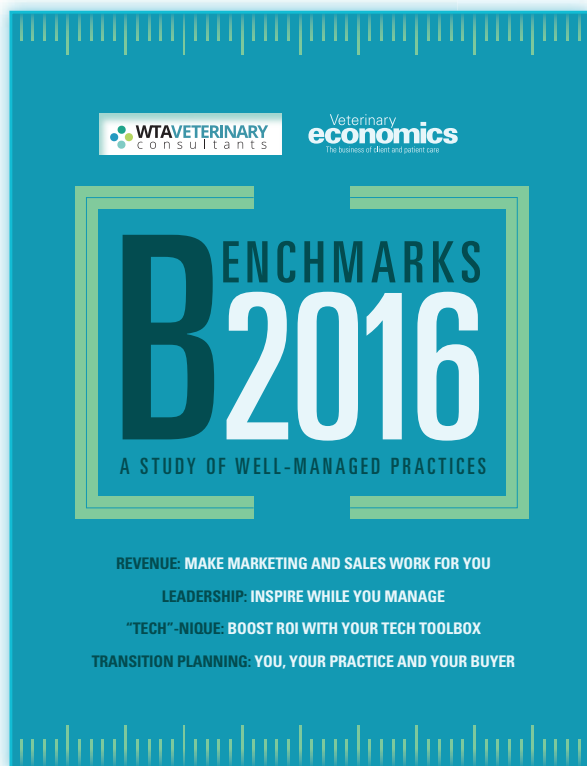
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I'm not a real doctor

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I still remember, back in the mid-1980s, what a large task it was to get into veterinary school. I wasn't sure I would, and I thought about applying to medical school as a backup. I wanted to do surgery on animals, but if I couldn't get a veterinary degree, I figured people were animals too.

Boy, am I glad I got in. People ick me out. I can do a C-section on a rotten cow fetus while eating a hamburger—doesn't bother me a bit. But if you brought me a human stool sample, I'd gag and run for the hills.

Here's an example

It was a warm day a few summers ago when a nurse, in scrub pants and scrub top, showed up with her cat. I had gone over the chart before heading into the exam room and saw the complaint was mites.

We shared a little small talk before getting the cat out of the box. I was expecting her to open the box and reveal a gross-looking cat with patches of hair missing and smelly dermatitis. But when she opened the box, the cat came out purring and looking completely fine.

I picked up the critter and began the search for signs. Nothing. In fact, the cat had a wonderful, well-groomed coat and smelled great. I picked through the fur and touched the patient from head to toe. Nothing.

The lady watched me intently, not saying a word. I started to get the

uneasy feeling that she thought I was an idiot because I couldn't find the mite infestation. I finally gave up and explained to her that I couldn't find any indication that the cat had mites, and I asked her what made her think it did. She just smiled a kind smile and looked almost embarrassed. At first I thought she was feeling sheepish because she'd come all the way over to the vet for a nonexistent problem. But that wasn't the case.

"I think the cat has mites because I

a real doctor?) She then began pointing to an area that's probably the one you guessed and scratched it a few times while explaining how bad it itched.

I found myself bending down to get a closer view of the lesion. Then suddenly it dawned on me: This lady is mostly naked ... and I'm bending down to get a closer look. These human medical types see naked people all the time and think nothing of it. Not me. I see naked animals all the time and think nothing of it.

I can do a C-section on a rotten cow fetus while eating a hamburger—doesn't bother me a bit. But if you brought me a human stool sample, I'd gag and run for the hills.

have them, and my doctor told me that I most likely got them from my cat," she said. "So I wanted to see if there are any on him and get you to treat them so they wouldn't keep getting on me."

A strange revelation

I looked at the woman carefully now, up and down, and I didn't see any suspicious lesions. I'd never seen a case of cat mites on a person and had no idea what such an infestation would look like on human skin. Remember, I'm not a real doctor. And remember, people stuff really icks me out.

But I decided to be brave and ask where the infestation was located. I wasn't even sure people could get cat mites, but if her doctor told her that's what it was, I wanted to see it.

She didn't miss a beat. She said, "Sure," and came around to my side of the table.

When she got about three feet from me, this nurse lady pulled her scrub pants and underwear down to just above her knees. (Did I mention I'm not

I felt my ears getting hot and my face turning red. I probably shouldn't have asked in the first place, but I had no idea that what I was asking was gonna be so personal!

I think she noticed my discomfort and covered up. She went on to tell me more about her symptoms, but I didn't hear a word. All I could do was think about what had just happened. Somehow I wrapped up the appointment with what dignity I could muster and assured her that her cat was fine. I never did find out what the cause of that lady's itching was (I'm kind of guessing it was not feline mites), but that's OK with me!

Of course, I know we all realize that veterinarians are real doctors. But when people ask us about human medical problems, well, we're not usually ready to see them naked. [dvm360](#)

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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