

Toolkit: Otitis management

Painful ears and anxiety can cause chaos in the clinic.

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June 2017 | Volume 48 | Number 6 | dvm360.com

2017 parasite forecast maps predict uptick in heartworm, Lyme infections

With these two diseases growing both beyond and within their endemic bounds, CAPC hopes veterinarians use the predictions to encourage prevention and testing.

Veterinarians in many areas of the country should expect higher-than-average caseloads of both Lyme disease and heartworm infections this year, according to the recently released annual parasite forecast maps from the Companion Animal Parasite Council (CAPC). The maps, which also include ehrlichiosis and anaplasmosis forecasts, are put together by parasitologists and statisticians using factors such as weather patterns, human population density and wildlife distribution, CAPC says on its website.

A release from the council highlights the effect of milder temperatures and increased precipitation on the mosquito population. "Shifting weather

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The secret life of techs

These veterinary professionals work as technicians by day, highly qualified pet sitters by night.

By Hannah Wagle, Assistant Content Specialist page 16



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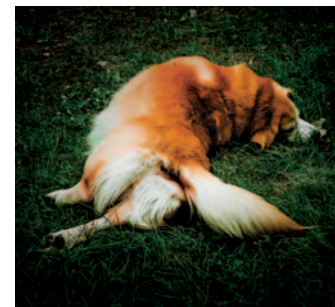
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A (vaccine) shot in the dark

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SO DEAD.

Clients want to fight fleas
and ticks – not their dogs.
Protect dogs with the beef-
flavored chew they love.¹



NexGard[®]
(afoxolaner) Chewables

Please see brief summary on page 03



¹Data on file at Merial.

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rights reserved. NEX16TRADEADS3 (01/17).

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.

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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-isoxazolyl]-N-[2,2,2-trifluoroethyl]amino]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 chemistry, 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

Marketed by: Frontline Vet Labs™, a Division of Merial, Inc.
Duluth, GA 30096-4640 USA

Made in Brazil.

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Dani McVety, DVM
Lap of Love Veterinary Hospice

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“This was my first year speaking for (and attending) the CVCs and frankly, I’m blown away. Every part of both the Virginia Beach and KC events was well organized, well attended, personal, and simply fun. They didn’t seem too big, too small, they were perfect. It was very exciting to see the engagement your team is inspiring in the profession. Even the “doodles” are inspiring!” — Dani McVety, DVM

Register now, or learn more at www.TheCVC.com.



Kansas City, August 25-28 | San Diego, December 7-10 | Virginia Beach, May 17-20, 2018



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Mission

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Pharmacy Times looks at pets

Veterinary patients aren't like human patients, authors say. Um, right.

Recently several of us in the **dvm360** offices stumbled on an interesting article on the *Pharmacy Times* website titled "Understanding the Veterinary Patient." It was a good read, and I'd encourage you to Google it and evaluate its merits for yourself.

In the meantime, here's the gist. The pharmacist authors, one a veterinary compounding specialist and one a regulatory expert, highlight the things human pharmacists need to consider when processing pet prescriptions amid the heavy volume of human scripts flowing through their practices every day.

"Currently pharmacists and pharmacy technicians have little to no formal education regarding our veterinary patients, although our responsibility to them is the same as our human patients," they write. "We are seeing more pet prescriptions in day-to-day practice than we

ever have in the past, and we need to be knowledgeable about how to dispense and counsel the pet owner."

The obvious takeaway, which the authors manage to impart without condescension, is that animals metabolize drugs differently than humans do—and different species react to drugs in different ways from each other. The veterinarian is the expert on this, not the pharmacist. So if a pharmacist has a question about a drug or a dosage for a pet, he or she is legally, ethically and professionally obligated to pause, call the veterinarian and clarify as needed.

It seems like a no-brainer, but unauthorized changes happen—sometimes to the patient's harm—which the authors point out, pulling no punches. An individual pharmacist can be found liable in court if his or her negligence leads to patient illness or death, they say.

As well they should. But the more

familiar I become with the issues surrounding pharmacists dispensing medication for animals, the more convinced I am that pharmacists are not, on the whole, careless, arrogant or obtuse—they are *busy*. The pharmacists I know personally who work at Walmart, Walgreens and the like deal with a staggering volume of work every day. As a result, they get very good at making quick decisions that are in their human patients' best interests. To stop and make a phone call or even look something up in a veterinary reference brings the flow to a screeching halt.

Yes, that's what pharmacists must do, and hopefully articles such as this one will raise awareness that it needs to be happening more than it is. But a little sympathy for their situation and a tendency toward collaboration rather than castigation will go a long way—and help protect pets as well. **dvm360**

The top 10 sessions at CVC last year—and what to attend in 2017

Veterinarians packed into these clinical lectures during CVC in 2016. Check out similar topics planned for this year, plus find resources to help right now with the patient in front of you.

Organizers of the CVC, the thrice-yearly live event associated with **dvm360** magazine, along with our sister magazines *Vetted* and *Firstline*, and **dvm360.com**, work hard (and by "hard" we mean meticulously, tirelessly, even obsessively) to identify the best speakers and topics that fit the needs of our attendees and readers.

Judging by the popularity of the sessions described on **pages 26 and 27**, the CVC clinical mavens did all right. Browse through our top 10 countdown to check out which topics and speakers veterinarians voted for with their feet, then check out our related online resources and highlights from this year's shows. (Ready to register now? Go to thecvc.com/register.)

Find more
on pages
26 & 27



Animal welfare groups criticize AVMA depopulation guidelines as inhumane

Proposed guidelines apply to large-scale culling of farm animals for disease control purposes.

The Animal Welfare Institute (AWI) and the American Society for the Prevention of Cruelty to Animals (ASPCA) are criticizing proposed guidelines from the American Veterinary Medical Association (AVMA) that permit the use of water-based foam, ventilation shutdown and live burial as a means of depopulation for farm animals, deploring these methods as inhumane, according to a release from the two groups.

The proposed guidelines are to apply to the large-scale killing of farm animals in disease outbreak situations, such as birds infected with or exposed to avian influenza, or in response to a natural or human-caused disaster. As written currently, the groups state that the draft guidelines:

- Allow the use of water-based foam, which acts in a manner similar to drowning or suffocation, to kill certain classifications of poultry
- Approve, in certain situations, the killing of poultry and pigs through “ventilation shutdown,” which turns off

“When crisis inevitably strikes, the AVMA’s depopulation guidelines should still uphold the veterinarian’s oath to prevent and relieve animal suffering.”

—Suzanne McMillan, content director of ASPCA’s farm animal campaign

the ventilation to the animals’ housing and causes the animals to die by heat stress and suffocation

- Authorize live burial for the killing of some classifications of poultry.
- “The AVMA is proposing to subject



animals to the most gruesome deaths imaginable,” says Dena Jones, AWI farm animal program director, in the release. “Intentionally inflicting death in a manner that causes elevated and prolonged distress is unacceptable. It is particularly insupportable for a professional scientific body representing veterinarians—who are sworn to protect animals—to propose killing methods that have never been researched for their impact on the welfare of animals.”

Jones tells dvm360 that the AVMA guidelines do include other methods of depopulation that the group doesn’t oppose, though their preferred method depends on the species and number of animals to be killed. For example, AWI’s preference in the case of a large number of birds to be culled is gas.

The AWI and ASPCA state that though the AVMA is proposing these methods be allowed only in constrained circumstances, less inhumane methods exist, even for exceptional cases. They are concerned that, over

time, these methods will become routine, making their availability a disincentive to use or research more acceptable methods.

The AVMA accepted comments on the depopulation guidelines from its members through April 16. The release notes that while the U.S. Department of Agriculture (USDA) is not required by law to do so, it typically relies on AVMA guidelines to determine culling methods for depopulation events. It has not indicated whether it will solicit public comment before deciding whether to use the AVMA guidelines in this case.

Suzanne McMillan, content director of ASPCA’s farm animal campaign, says, “When crisis inevitably strikes, the AVMA’s guidelines should still uphold the veterinarian’s oath to prevent and relieve animal suffering and should not provide an ‘easy out’ at the cost of unthinkable cruelty for the sake of perpetuating a dangerous, inhumane and unsustainable system.” **dvm360**



Oral Suspension for Cats

Veraflox (pradofloxacin) Oral Suspension for Cats
25 mg/mL

For the treatment of skin infections (wounds and abscesses) in cats.
Do not use in dogs.

BRIEF SUMMARY:

Before using Veraflox Oral Suspension for Cats, 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. Federal law prohibits the extra-label use of this drug in food-producing animals.

PRODUCT DESCRIPTION:

Pradofloxacin is a fluoroquinolone antibiotic and belongs to the class of quinolone carboxylic acid derivatives. Each mL of Veraflox Oral Suspension provides 25 mg of pradofloxacin.

INDICATIONS:

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

CONTRAINDICATIONS:

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

HUMAN WARNINGS:

Not for human use. Keep out of reach of children. Individuals with a history of quinolone hypersensitivity should avoid this product. Avoid contact with eyes and skin. In case of ocular contact, immediately flush eyes with copious amounts of water. In case of dermal contact, wash skin with soap and water for at least 20 seconds. Consult a physician if irritation persists following ocular or dermal exposure or in case of accidental ingestion. In humans, there is a risk of photosensitization within a few hours after exposure to quinolones. If excessive accidental exposure occurs, avoid direct sunlight. Do not eat, drink or smoke while handling this product. For customer service or to obtain product information, including a Material Safety Data Sheet, call 1-800-633-3796. For medical emergencies or to report adverse reactions, call 1-800-422-9874.

ANIMAL WARNINGS:

For use in cats only. The administration of pradofloxacin for longer than 7 days induced reversible leukocyte, neutrophil, and lymphocyte decreases in healthy, 12-week-old kittens.

PRECAUTIONS:

The use of fluoroquinolones in cats has been associated with the development of retinopathy and/or blindness. Such products should be used with caution in cats. Quinolones have been shown to produce erosions of cartilage of weight-bearing joints and other signs of arthropathy in immature animals of various species. The safety of pradofloxacin in cats younger than 12 weeks of age has not been evaluated. The safety of pradofloxacin in immune-compromised cats (i.e., cats infected with feline leukemia virus and/or feline immune-deficiency virus) has not been evaluated. Quinolones should be used with caution in animals with known or suspected central nervous system (CNS) disorders. In such animals, quinolones have, in rare instances, been associated with CNS stimulation that may lead to convulsive seizures. The safety of pradofloxacin in cats that are used for breeding or that are pregnant and/or lactating has not been evaluated.

ADVERSE REACTIONS:

In a multi-site field study, the most common adverse reactions seen in cats treated with Veraflox were diarrhea/loose stools, leukocytosis with neutrophilia, elevated CPK levels, and sneezing.

ANIMAL SAFETY:

In a target animal safety study in 32, 12-week-old kittens dosed at 0, 1, 3, and 5 times the recommended dose for 21 consecutive days. One 3X cat and three 5X cats had absolute neutrophil counts below the reference range. The most frequent abnormal clinical finding was soft feces. While this was seen in both treatment and control groups, it was observed more frequently in the 3X and 5X kittens.

U.S. Patent No. 6,323,213

May, 2012

84364593/84364607, R.O.

NADA141-344, Approved by FDA

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Oral Suspension for Cats

Please see brief summary on page 06

VerafloxOS.com

CAUTION: Federal law restricts this drug to use by or on the order of a licensed veterinarian. Federal law prohibits the extra label use of this drug in food-producing animals. WARNING: For use in cats only. PRECAUTION: The safety of pradofloxacin in cats younger than 12 weeks of age has not been evaluated.

*The clinical significance of *in vitro* data has not been demonstrated.

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

¹Silley P, Stephan B, Greife H, Pridmore A. (2012). Bactericidal properties of pradofloxacin against veterinary pathogens. *Vet Microbiol.* 157(2012): 106-111.

²Freedom of Information Summary: NADA 141-344.

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Veterinarian Sonny Perdue sworn in as U.S. secretary of agriculture

Former Georgia governor, UGA alumnus vows to be a good steward of U.S. land, protect interests of farmers and ranchers.

Sonny Perdue, DVM, was sworn in April 25 as the 31st U.S. secretary of agriculture, according to a release from the U.S. Department of Agriculture (USDA).

“The only legacy that I seek is the only one that any grandparent or parent seeks—to be good stewards, and to hand off our nation, our home, our fields, our forests and our farms to the next generation in better shape than we found it,” Perdue said in an address to USDA employees. “Making sure that Americans who make their livelihoods in the agriculture industry have the ability to thrive will be one of my top priorities. I am committed to serving the customers of USDA, and I will be an unapologetic advocate for American agriculture.”

Perdue says his policies as agriculture secretary will be guided by four principles, according to the USDA release:

- Maximizing the ability of America’s agriculture and agribusiness sector to create jobs, produce and sell the food and fiber that feed and clothe the world, and

reap the reward of their labor. “It should be the aim of the American government to remove every obstacle and give farmers, ranchers and producers every opportunity to prosper,” the USDA release states.

- Prioritizing customer service for taxpayers and consumers.
- Ensuring a safe and secure food supply.
- Remembering that “America’s agricultural bounty comes directly from the land,” sustaining more than 320 million Americans and millions more around the globe, the release states.

In his nomination of Perdue in January, President Donald J. Trump said, “Sonny Perdue is going to accomplish great things as secretary of agriculture. From growing up on a farm to being governor of a big agriculture state, he has spent his whole life understanding and solving the challenges our farmers face, and he is going to deliver big results for all Americans who earn their living off the land.”

Perdue was born in 1946 into a farming family in Bonaire, Georgia, the USDA reports. In addition to working as a farmer, agribusinessman and veterinarian, Perdue served in the Georgia state legislature and was governor of Georgia from 2003 to 2011.

The American Veterinary Medical Association (AVMA) states that the association is pleased with Perdue’s confirmation. “With the country facing challenges and opportunities on issues requiring veterinary expertise, such as animal health, animal welfare and public health, having strong veterinary leadership at the USDA is more important than ever,” reads an AVMA statement. “Secretary Perdue’s appointment is an encouraging sign that veterinarians will continue to be valued at the agency.”

As a younger man, Perdue served in the U.S. Air Force, achieving the rank of captain. He earned his DVM from the University of Georgia College of Veterinary Medicine in 1971, putting that training to use in private practice in North Carolina. As a member of the Georgia State Senate for eleven years, he eventually reached the position of president pro tempore as elected by his senate colleagues. As a two-term governor of Georgia, he was credited with transforming a budget deficit into a surplus, dramatically increasing the student performance in public schools and fostering an economic environment that allowed employers to flourish and manufacturers and agricultural producers to achieve record levels of exports, the USDA states.

He then embarked a successful career in agribusiness, where he focused on commodities and transportation in enterprises that have spanned the southeastern United States. These experiences help inform his current role as principal advocate for American agriculture, the USDA reports.

Perdue’s official USDA Twitter handle is @SecretarySonny. [dvm360](#)

>>Sonny Perdue, DVM, with his wife Mary Ruff Perdue, is sworn in as 31st U.S. secretary of agriculture by Supreme Court Justice Clarence Thomas.



TRESADERM (thiabendazole-dexamethasone-neomycin sulfate solution) Dermatologic Solution

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

DESCRIPTION: Dermatologic Solution TRESADERM® (thiabendazole-dexamethasone-neomycin sulfate solution) contains the following active ingredients per ml: 40 mg thiabendazole, 1 mg dexamethasone, 3.2 mg neomycin (from neomycin sulfate). Inactive ingredients: glycerin, propylene glycol, purified water, hypophosphorous acid, calcium hypophosphite; about 8.5% ethyl alcohol and about 0.5% benzyl alcohol.

INDICATIONS: Dermatologic solution TRESADERM is indicated as an aid in the treatment of certain bacterial, mycotic, and inflammatory dermatoses and otitis externa in dogs and cats. Both acute and chronic forms of these skin disorders respond to treatment with TRESADERM. Many forms of dermatosis are caused by bacteria (chiefly *Staphylococcus aureus*, *Proteus vulgaris* and *Pseudomonas aeruginosa*). Moreover, these organisms often act as opportunistic or concurrent pathogens that may complicate already established mycotic skin disorders, or otoacariasis caused by *Otodectes cynotis*. The principal etiologic agents of dermatomycoses in dogs and cats are species of the genera *Microsporum* and *Trichophyton*. The efficacy of neomycin as an antibacterial agent, with activity against both gram-negative and gram-positive pathogens, is well documented. Detailed studies in various laboratories have verified the significant activity thiabendazole displays against the important dermatophytes. Dexamethasone, a synthetic adrenocorticoid steroid, inhibits the reaction of connective tissue to injury and suppresses the classic inflammatory manifestations of skin disease. The formulation for TRESADERM combines these several activities in a complementary form for control of the discomfort and direct treatment of dermatitis and otitis externa produced by the above-mentioned infectious agents.

DOSAGE AND ADMINISTRATION: Prior to the administration of Dermatologic Solution TRESADERM, remove the ceruminous, purulent or foreign materials from the ear canal, as well as the crust which may be associated with dermatoses affecting other parts of the body. The design of the container nozzle safely allows partial insertion into the ear canal for ease of administration. The amount to apply and the frequency of treatment are dependent upon the severity and extent of the lesions. Five to 15 drops should be instilled in the ear twice daily. In treating dermatoses affecting other than the ear the surface of the lesions should be well moistened (2 to 4 drops per square inch) with Dermatologic Solution TRESADERM twice daily. The volume required will be dependent upon the size of the lesion. Application of TRESADERM should be limited to a period of not longer than one week.

PRECAUTIONS: On rare occasions dogs may be sensitive to neomycin. In these animals, application of the drug will result in erythema of the treated area, which may last for 24 to 48 hours. Also, evidence of transient discomfort has been noted in some dogs when the drug was applied to fissured or denuded areas. The expression of pain may last 2 to 5 minutes. Application of Dermatologic Solution TRESADERM should be limited to periods not longer than one week. While systemic side effects are not likely with topically applied corticosteroids, such a possibility should be considered if use of the solution is extensive and prolonged. If signs of salt and water retention or potassium excretion are noticed (increased thirst, weakness, lethargy, oliguria, gastrointestinal disturbances or tachycardia), treatment should be discontinued and appropriate measures taken to correct the electrolyte and fluid imbalance. Store in a refrigerator 36°-46°F (2°-8°C).

WARNING: For topical use in dogs and cats. Avoid contact with eyes. Keep this and all drugs out of the reach of children. The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information. To report adverse effects in users, to obtain an MSDS, or for assistance call 1-888-637-4251.

HOW SUPPLIED: Product 55871-Dermatologic Solution TRESADERM Veterinary is supplied in 7.5-ml and 15-ml dropper bottles, each in 12-bottle boxes.



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Approved for use on dogs and cats

IMPORTANT SAFETY INFORMATION: TRESADERM is for topical use only in dogs and cats. On rare occasions, application of the product may result in erythema or discomfort in the treated area. Discomfort in the treated area can last from 24 hours to 48 hours.



Merial is now part of Boehringer Ingelheim.

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Inactive clients visit veterinary practices after receiving test email

A customizable letter brought an average of 128 lapsed clients per veterinary practice within a period of six months, generating roughly \$20,000 in revenue per hospital. Could the free tool work for your veterinary hospital too? *By Brendan Howard, Business Channel Director*

There are two ways to get more visits to your veterinary clinic: (1) Find brand new clients, and (2) get current clients to come in more often. The former is way tougher than the latter. And now the latter could be even easier, thanks to new tools from the industry group Partners for Healthy Pets.

How can it help your practice? Now you can automatically create an inactive-client email (with or without a \$25 discount for an upcoming practice visit) and send it to clients you identify who haven't been in in a while.

Before offering this tool to all veterinary practices, Partners for Healthy Pets tested the program for six months with 1,612 practices that are Vetstreet customers. The results, according to AAHA CEO Michael Cavanaugh, DVM, DABVP, were impressive:

- > Cat owners responded well. "We all know it can be challenging to get cats in for regular exams," Cavanaugh says. "The data in the study showed there was actually a slightly better response from cat owners than dog owners."
- > Practices saw an average of 128 patient visits from formerly inactive clients within six months of implementation. Practices also generated an average of more than \$20,000 in revenue from the targeted population of previously inactive clients, Cavanaugh says.
- > Long-lapsed clients came back. Within the first two months of enrollment, 38 percent of clients who reengaged with their practices had been inactive for more than two years. "This is a great reminder that focusing on client reengagement pays off," Cavanaugh says. "Don't be afraid to go after clients who've been gone a long time!"

Cavanaugh attributes the success of the inactive-client program to two major features that set it apart from other typical reminder programs:

1. Better criteria for targeted marketing. The program uses the cli-

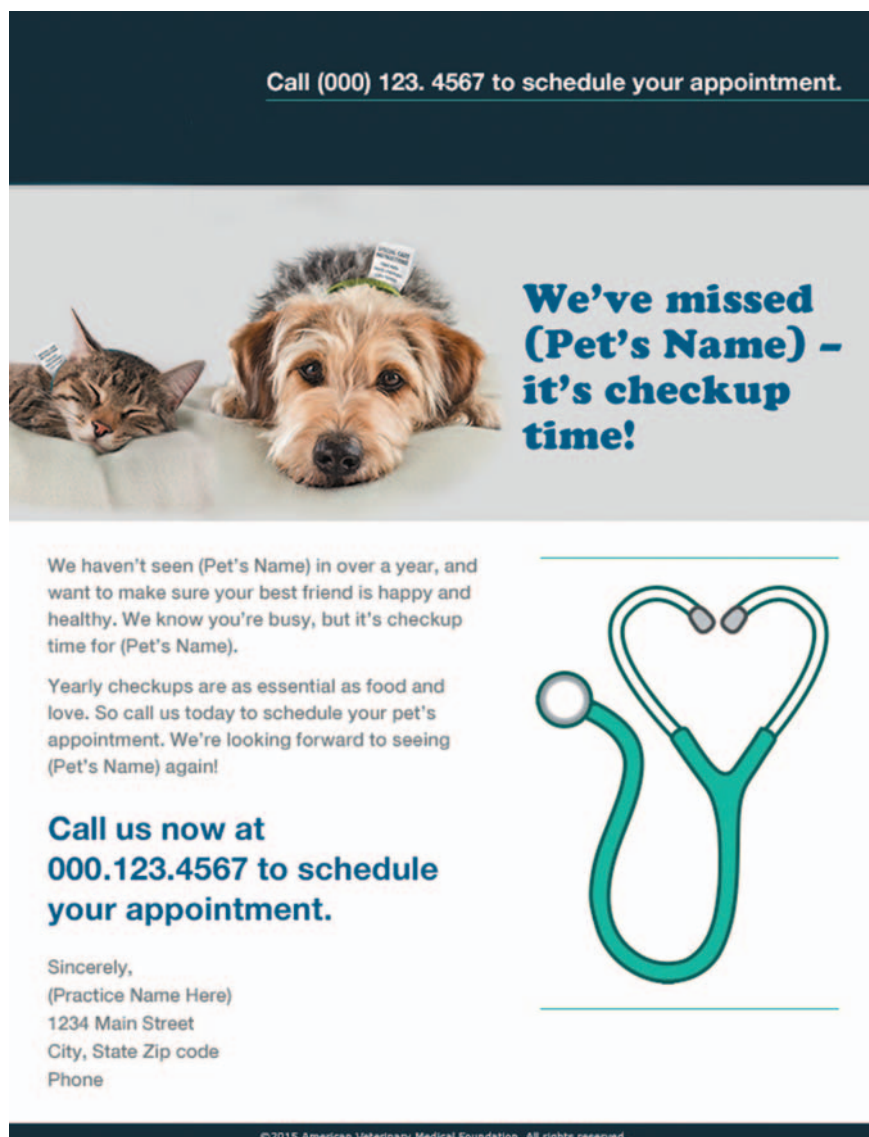
ent's visitation history, not a timetable for a specific service (for example, rabies vaccination). The program asks practices to identify the pet owners who had been inactive for a specific period of time.

2. A better message. Instead of a service-specific reminder that doesn't focus on the relationship between the pet, the owner and the veterinary practice, these reminders explain to pet owners that you know they want to provide great care for their pets but often have busy lives that make regular checkups hard to schedule. They also show a sincere concern for pets' health and emphasize the importance of those checkups and the fact that annual exams are as important as food and love, Cavanaugh says.

"This is a great reminder that focusing on client reengagement pays off. Don't be afraid to go after clients who've been gone a long time!"

—Michael Cavanaugh, DVM, DABVP, CEO of AAHA

Led by the AVMA and the American Animal Hospital Association (AAHA), Partners for Healthy Pets (PHP) is a collaborative alliance of more than 100 veterinary associations, colleges of veterinary medicine and animal health companies all committed to a vision of improved overall health for pets. For more information, you can dig into the white paper or go straight to the website for a customizable inactive-client letter. Visit partnersforhealthypets.org/inactive_client_program.aspx for more details and to get started on your own email. [dvm360](#)



A sample look at the cat-and-dog customizable email. Cat-only and dog-only versions are also available.



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¹Pereira GG, Fragoso S, Pires E. Effect of dietary intake of L-tryptophan supplementation on multi-housed cats presenting stress related behaviours, in *Proceedings BSAVA* 2010.

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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National Purebred Dog Day resolution submitted to Congress

Congressmen and veterinarians Ted Yoho, Ralph Abraham and Kurt Schrader seek to highlight the past and present contributions of purpose-bred dogs.

In April, United States Congressmen and veterinarians Ted Yoho (R-FL), Ralph Abraham (R-LA) and Kurt Schrader (D-OR) introduced a congressional resolution (H. CON. RES. 46) in support of designating a “National Purebred Dog Day,” according to a release from the American Kennel Club.

National Purebred Dog Day, which is currently celebrated on May 1, was originally created in 2013 by writer and puli fancier Susi Szeremy as a way to highlight the past and present contributions of purebred dogs, the AKC release states. The resolution comes at a moment when purebred breeds are receiving more scrutiny based on congenital health problems (see dvm360.com/brachy

and dvm360.com/toymalformations for recent examples).

According to the resolution, these contributions include “serving as guide dogs, service dogs, conservation dogs, livestock guardians, search and rescue dogs, earth dogs, police dogs, canine soldiers serving by the sides of our military men and women, and ultimately guardians of family, home, and hearth.” The resolution also points to the many ways in which purebred dogs have helped advance human medicine.

Though the Congressmen say they recognize the value of all dogs, regardless of ancestry, they state that the predictability of purpose-bred dogs deserves special recognition.

“As a farmer, veterinarian and military veteran, I can personally attest to the many ways purebred dogs have made a difference in

the lives of Americans,” Abraham says in the release. “Each purebred breed was developed for a specific purpose. From search and rescue and working dogs to service animals and loyal companions, purebred dogs continue to play a critical role, and I am proud to sponsor this legislation that recognizes their contributions to our country.”

The resolution was referred to the House Committee on Government Oversight and Reform on April 4, 2017, and will need to be adopted by the House before moving on to the Senate. dvm360



Phenobarbital tablets recalled; 15-mg pills found to be 30 mg

Label error leads to product withdrawal due to potential for patient harm.

C.O. Truxton Inc. has expanded a recall of phenobarbital that began with a label mixup affecting tablets labeled 15 mg. Those pills were discovered to be 30 mg, which could have led to overdosing of people and pets receiving the medication, according to a release from the U.S. Food and Drug Administration (FDA).

In late April the company voluntarily recalled lot 70952A, which contained at least one bottle of 30-mg phenobarbital tablets labeled as 15 mg, but several weeks later it expanded the recall to cover multiple lots of 15-mg, 30-mg, 60-mg and 100-mg phenobarbital tablets, as well as one lot of 50-mg amitriptylene tablets. C.O. Truxton has not received any complaints related to products included in the expanded recall but is exercising “an abundance of caution,” the FDA states.

The mislabeled product could expose people or pets to potential overdosing that can cause severe intoxication leading to cardiogenic shock, renal failure, coma or death, although the manufacturer has not received any reports of adverse events, the FDA states.

Phenobarbital is indicated for use as a sedative or anticonvulsant and is packaged in 1,000-count bottles. The 15-mg tablet is debossed with “Westward 445” on one side and blank on the reverse side; the 30-mg tablet is debossed with “Westward 450” on one side and scored on the reverse side. The product was distributed nationwide to physicians and veterinarians, the release states.

C.O. Truxton is notifying all customers on record who purchased affected product by U.S. mail, and the company is arranging for full-credit returns or replacements of recalled product. Anyone who possesses recalled product should stop using the product and return it to the place of purchase.

Veterinarians and pet owners with questions can contact C.O. Truxton at (856) 933-2333. [dvm360](#)

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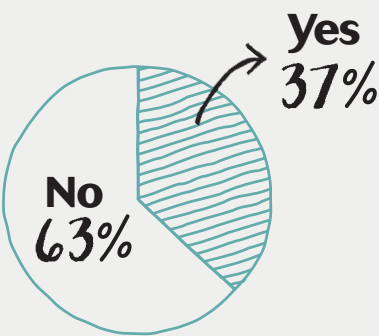
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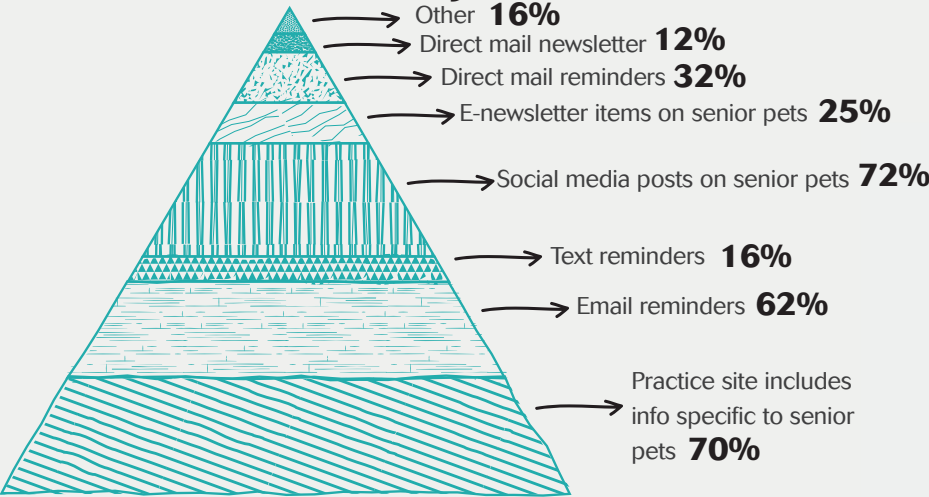
Getting older pets the care they need

Where does your practice fall on senior care? (Doing a good job? Could be better?) Here's what your colleagues are doing* to market to pet owners with senior dogs and cats—and some strategies for better client compliance along the way.

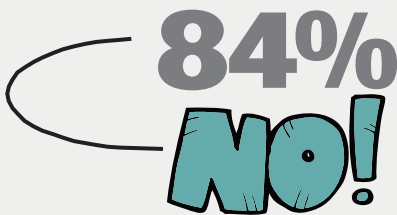
Considering all of your practice's marketing efforts, does your practice also market specifically to owners of senior pets?



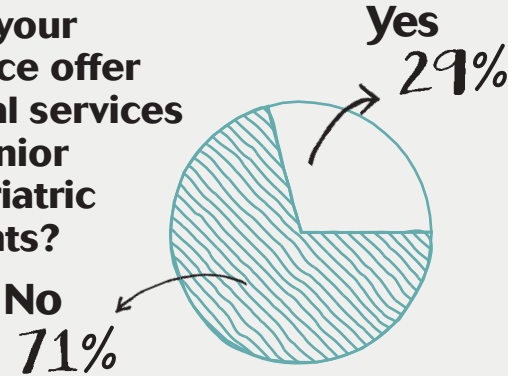
For those who answered 'yes':
What methods do you use?



Do you offer senior pet care discounts?



Does your practice offer special services for senior or geriatric patients?



Where did this come from?

*Data compiled from responses to the dvm360 Clinical Updates Survey: Senior Pet Care. The survey, which garnered over 400 responses, was sent to subscribers of dvm360, Vetted and Firstline. The margin of error is 5%.

Streamline your senior care to improve client compliance

Tips from Laura McLain Madsen, DVM.

Make sure everyone is on the same page. We use a chart that lists recommended procedures for every age, such as blood pressure and thyroid hormone measurements. The chart functions as a quick reference for receptionists when they're checking clients in. We also created "canned" estimates in the computer system for routine wellness exams for senior pets. The estimate includes examination, lab testing, parasite preventives and so on, so nothing gets missed.

Talk to your lab about custom panels. We arranged for a customized senior wellness panel with our referral laboratory. Because we run so many, our lab gives us a discount on cost. We pass that savings on to clients.

Teach team members. Schedule a staff meeting to teach the basics about common problems in senior pets. I encourage our team members to run lab work on their own pets, so they can see the benefits firsthand.

Laura McLain Madsen, DVM, is an associate veterinarian at Holladay Veterinary Hospital in Salt Lake City, Utah.



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The secret life of techs

By Hannah Wagle, Assistant Content Specialist

In high-cost-of-living areas like the San Francisco Bay Area, more and more veterinary technicians seem to be heading from their day jobs at the veterinary clinic to side jobs as pet sitters. Their reasons for getting into pet sitting vary, but the trend in the lucrative side job is becoming more popular.

“Even with the competitive pay where I work as a tech, I still depend on the money I make from pet sitting, and that’s something that keeps me doing it,” explains Sarah Rojas, RVT, of Adobe Animal Hospital in Los Gatos, California. “I know several other techs who do pet sitting on the side.”

Rojas’ fellow technician at Adobe Animal Hospital, Hosik Arakeliyan, RVT, says living in an expensive area gave him the idea for a side job. “And what job could have made me happier than working more hours with pets?” Arakeliyan asks.

Amy Raffin, RVT, who also works at Adobe, says she makes more money as a technician, “but pet sitting money is much easier to come by and having the extra money is always nice.”

While a love for animals is one of the biggest reasons technicians choose pet sitting as their side job, professional qualifications make technicians highly

desirable for pet owners looking for sitters. “Working and caring for animals is something that we enjoy doing and I feel like, especially for pets with medical needs, we are the top choice for a lot of clients,” Rojas says. “I think technicians help clients feel more at ease leaving their pets.”

Technicians also admit that all work and no play makes Jack a dull veterinary professional. “Pet sitting is a little more fun because I get to spend more time and bond with a lot of great pets,” Rojas says. “Working as a technician, we don’t get to spend as much quality time with our patients, not to mention the fact that it’s in an environment that can be stressful to them.”

Raffin echoes these thoughts. “I work in surgery and ICU,” Raffin states, “so I have to be able to think quickly. Both departments can take a huge toll on a person, and pet sitting kind of allows for a mental break.”

Still, these technicians try not to let pet sitting affect their day jobs. “I normally won’t accept any pet sitting job that will interfere with my regular work schedule,” Arakeliyan explains. “I always inform my clients about my work schedule; that way I won’t have any challenges later. After working 20

years in this field and pet sitting almost 14 years on the side, I know how to manage my time in order to satisfy my pet sitting clients, my employer and at the same time satisfy myself.”

Raffin says that if she’s spending the night at a client’s house during her work week, she adjusts her schedule slightly. “I will ask my managers to allow me to take an hour lunch rather than my normal half hour. This allows me time to get back to the house and walk the dog,” she says.

While it might seem that pet sitting would be a better option than working as a technician, the resounding answer from these team members is “no.”

“There are positives and negatives to both,” Raffin says. “When I pet sit, the work is much simpler. It allows my brain to relax and there isn’t the same emotional and physical drain. But I find work as a technician much more stimulating.”

Arakeliyan agrees, and believes the two jobs mesh together to create a better experience for both. “My technical skills have helped me a lot in order to become a better pet sitter, especially if they’re sick or need medical attention,” he says. “I love my job as a pet sitter, and I love my job as an RVT, because—well, I love pets!”



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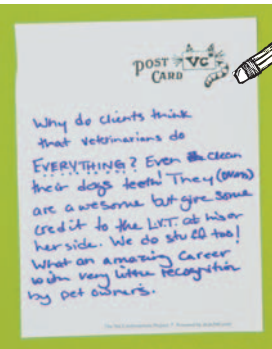
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Vet techs spill their secrets

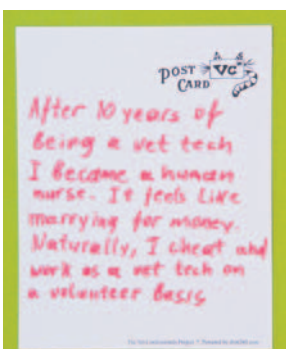
Check out these technicians’ anonymous confessions about the things that make vet tech life super-annoying, super-sad and (of course) totally hilarious and awesome.

Want more confessions? Scan the code or go to dvm360.com/techsconfess.



“I love when I make a suggestion and then 5 minutes later the Dr. takes my suggestion and applies it as her own ...”

“Why do clients think that veterinarians do EVERYTHING? Even clean their dog’s teeth! They (DVMs) are awesome but give some credit to the LVT at his or her side. We do stuff too! What an amazing career with very little recognition by pet owners.”



“After 10 years of being a vet tech I became a human nurse. It feels like marrying for money. Naturally, I cheat and work as a vet tech on a volunteer basis.”



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Featured Formulas:



2017 parasite forecast maps predict uptick in heartworm, Lyme infections

> Continued from cover

er patterns have created ideal breeding conditions for mosquitoes across the country,” the release states.

CAPC board member and Cornell University parasitology professor Dwight Bowman, PhD, explains in

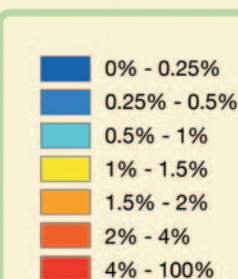
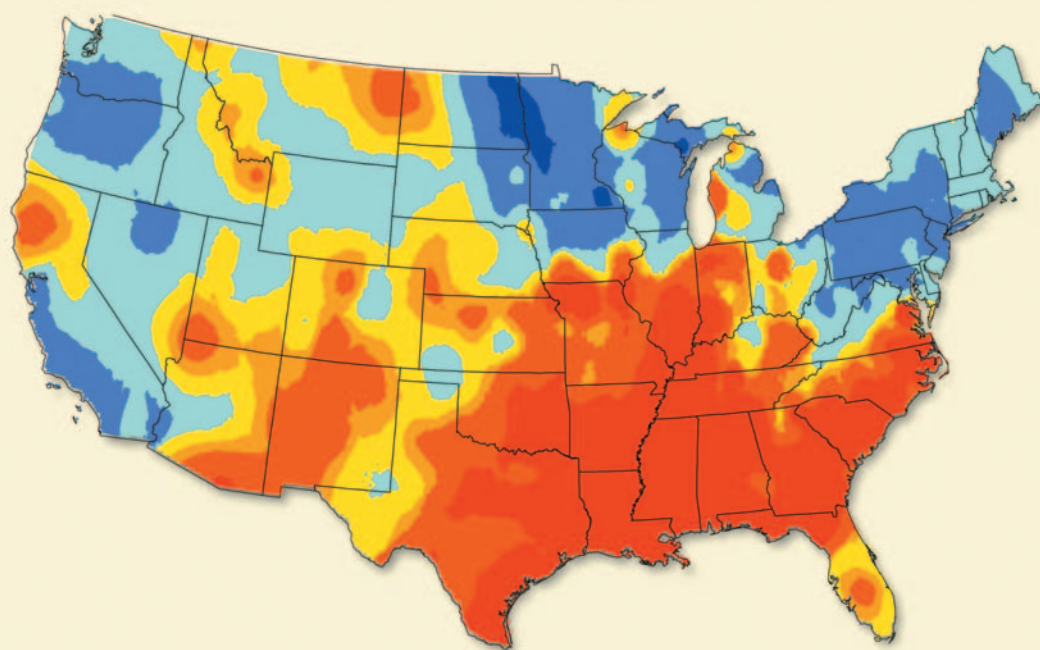
the release that the forecasts “help veterinarians and pet owners understand parasites are a true risk to both pets and people. This year, there are significant shifts in prevalence, making our maps a critical education tool for

veterinarians to use to demonstrate to pet owners that parasites are ever-changing and widespread, sometimes surprisingly so.”

To see prevalence data by county, visit capcvet.org. [dvm360](http://dvm360.com)

Forecasted Prevalence of Heartworm

2017



Heartworm disease activity is expected to be higher

across the United States this year—even in the Rockies and westward—thanks to higher temperatures and above-average rainfall in 2016. The hyperendemic Lower Mississippi Valley is expected to see even more infections than usual, while western Texas (from Amarillo to Laredo) is the only area that may see lower caseloads.

**Need more ideas for achieving better client compliance? Check out our heartworm prevention toolkit! Go to dvm360.com/heartworm-toolkit for more information and resources.*

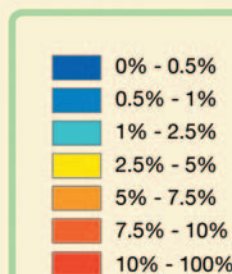
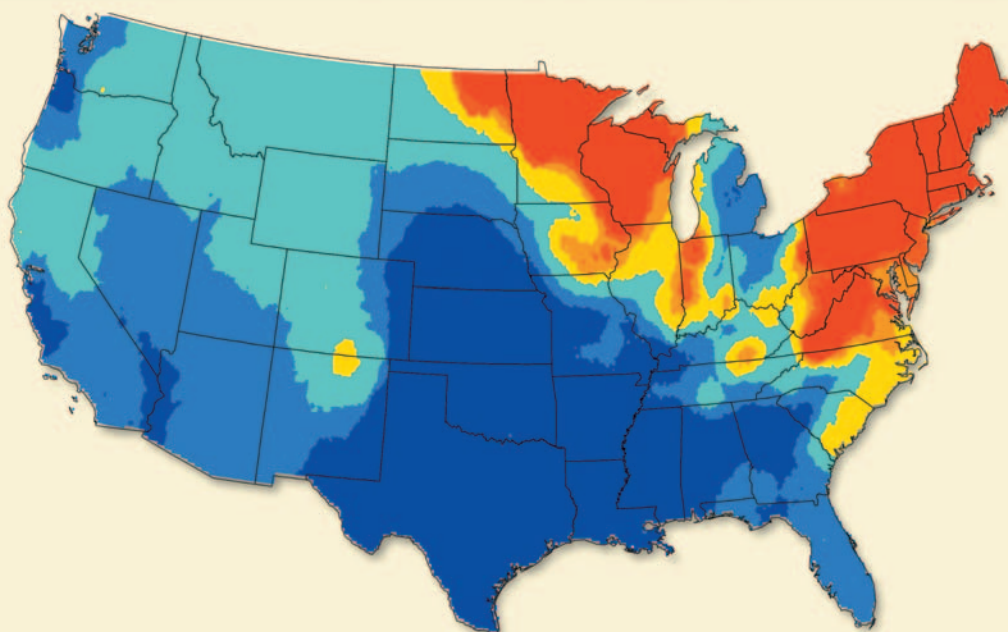
Lyme disease is also expected to expand beyond

its endemic boundaries in 2017, so veterinarians in North and South Dakota, Iowa, Missouri, southern Illinois, Ohio, Kentucky, Tennessee and North Carolina should be on high alert regarding this zoonotic disease. Areas where Lyme disease is already endemic, including western Pennsylvania, New York, northwestern Wisconsin and northern Minnesota, are expected to see higher caseloads, while caseloads along the Atlantic seaboard (from Washington, D.C., to Boston) are predicted to remain static.

**Pssst! Check out this client hand-out on 7 Lyme disease myths! Go to dvm360.com/lymemyths for more.*

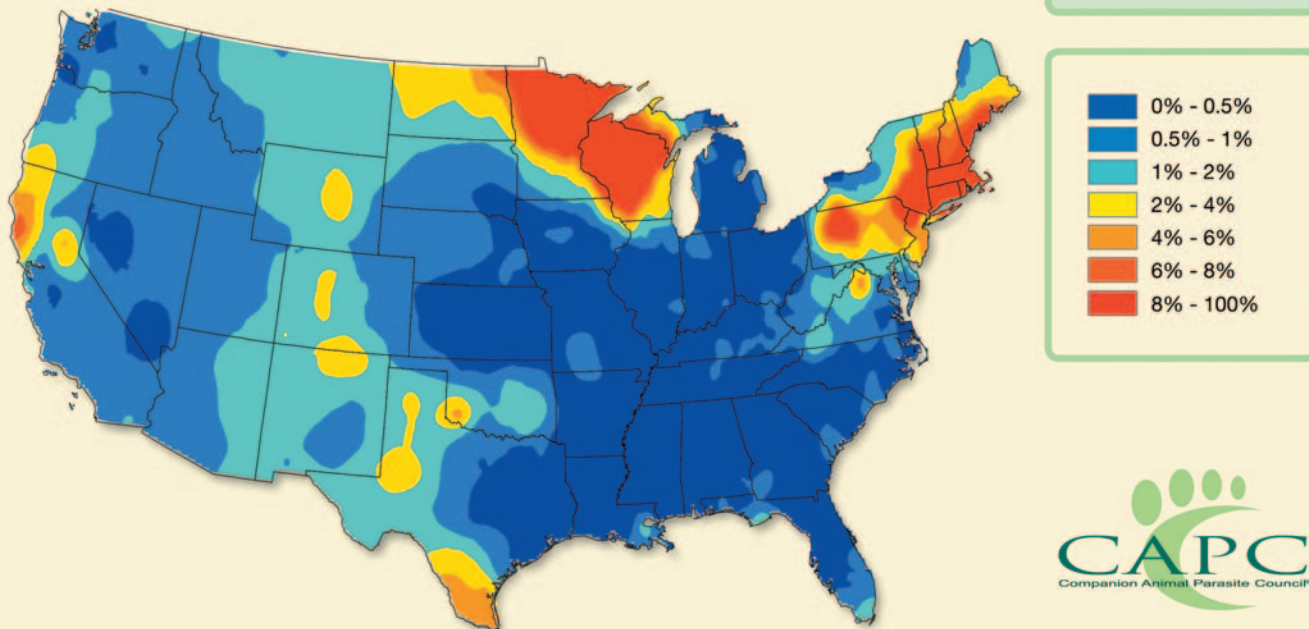
Forecasted Prevalence of Lyme Disease

2017



Forecasted Prevalence of Anaplasmosis

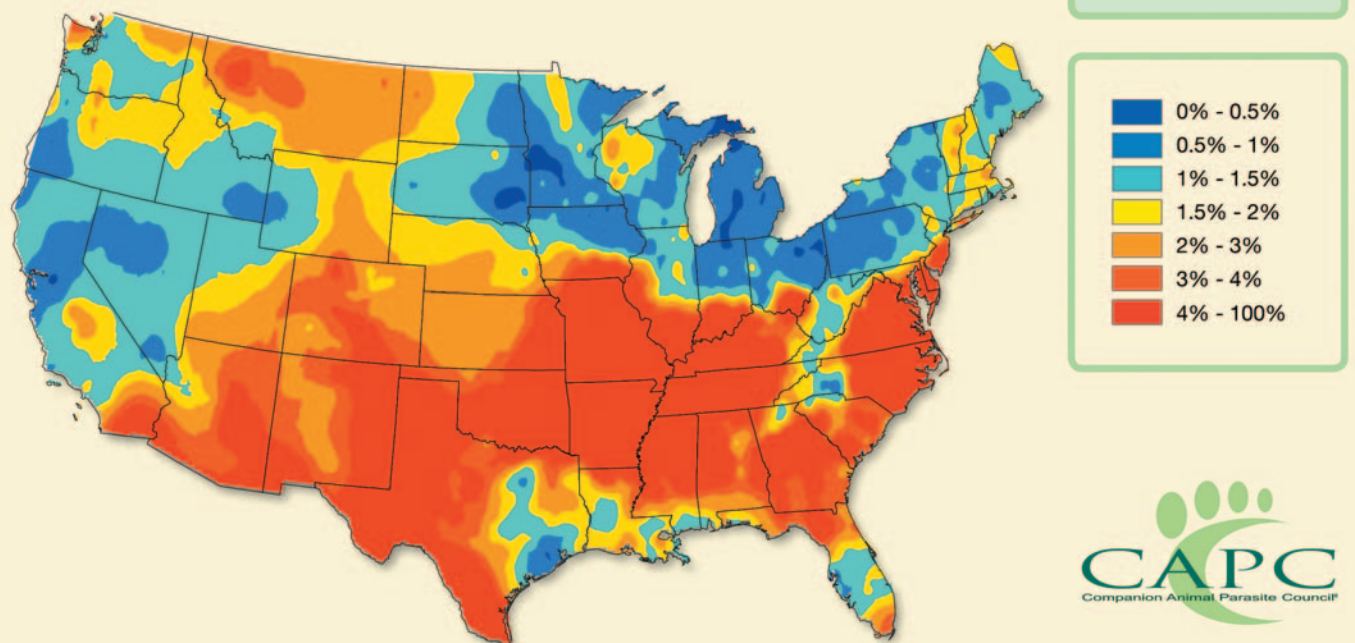
2017



Anaplasmosis. *Anaplasma* species are expected to continue to plague northern California and southern Georgia this year. New York and western Pennsylvania are also expected to have an active year, but Minnesota and Wisconsin—typical anaplasmosis hot-spots—may have below-normal prevalence.

Forecasted Prevalence of Ehrlichiosis

2017



Ehrlichiosis. *Ehrlichia* species “can be nonexistent to rampant within 200 miles,” CAPC says. It is expected to be especially active in eastern Oklahoma, the Ohio River Valley, southern Virginia, northern North Carolina, eastern Oregon and western Montana. But the Great Plains regions may see below-average activity.

2016 heartworm incidence survey results from the American Heartworm Society

The American Heartworm Society (AHS) surveys practices and shelters across the U.S. every three years. Here’s a quick overview of the results from 2016:

- > While heartworm case distribution hasn’t changed much since 2013,

the average number of cases per clinic has risen nearly 22 percent.

- > Around 23 percent of respondents saw an increase in cases compared with 2013, and almost 20 percent reported a decline.
- > The top 10 states for heartworm

incidence are Mississippi, Louisiana, Arkansas, Texas, Tennessee, South Carolina, Georgia, North Carolina, Alabama and Florida. Though in the top tier, Alabama, Louisiana and Texas reported decreases in heartworm cases. The

other seven saw increases.

- > Sixty-four percent of veterinarians who reported a decrease in heartworm cases credited owner compliance. Around 48 percent of veterinarians who reported an increase blamed owner compliance.



>>> The lobby of the ARK Pet Oasis.



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Veterinary hospital located within the ARK at JFK at John F. Kennedy International Airport is preparing for a flood of first-rate service for all domesticated species.

By Mindy Valcarcel, Medicine Channel Director

The ARK at JFK provides all things for all creatures great and small—boarding, quarantine facility, veterinary care—all in a refurbished airport terminal at one of the busiest airports in the world. The facility is accessible without entering the airport—and parking is free! Some aspects are operational now, while others should be ready this summer.

The imports and exports

The ARK Import-Export Center, which includes the ARK Pet Oasis, equine export and in-transit quarantine center,

has already begun its first phase of services:

- > The ARK Pet Oasis provides a place for companion animals traveling through JFK to get the rest, care and attention they require.
- > The equine export stable offers luxurious stalls enabling horses to rest before flight as required by the United State Department of Agriculture.
- > An in-transit aviary quarantine allows shippers to route avian shipments through JFK. The birds are cared for within the bonded and



>> An artistic rendering of the exterior of the Ark at John F. Kennedy International Airport.



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biosecure quarantine rooms for several hours to overnight. The next phase of the center's services will include:

- An equine import quarantine—48 state-of-the-art, independent quarantine stalls for horses entering the United States, fulfilling the need for mandatory quarantine.
- An avian quarantine center, providing facilities for 30-day quarantine of pet and commercial birds entering the U.S.

The boarding

Coming later this year is a large pet resort called Paradise 4 Paws, featuring 24-hour cageless boarding for dogs and cats, training and grooming. And don't forget the most fun part of a vacation for all kids in the family, four-legged or not—the swimming pools.

The veterinary hospital

One of our own veterinary hospital design aces, Heather Lewis, AIA, NCARB, of Animal Arts in Boulder, Colorado, is preparing the veterinary

hospital for prime time, which will be called Red Bank Veterinary Hospital at The ARK at JFK. It is expected to be ready by this summer. It will join several other Red Bank Veterinary Hospitals in the New Jersey area: Tinton Falls, Mount Laurel, Hillsborough and Linwood.

If some unfortunate incident or illness should befall a pet while boarding on the ground at the ARK or during flight, they can be whisked right over to the hospital for top-notch veterinary care. The hospital will also be a much-needed resource for the required veterinarian-authorized health certificates and documentation necessary for domestic and international pet travel.

And the hospital is not just for pets whose owners are off for a high-flying adventure. The hospital will also provide general wellness and emergency care for pets from JFK and the surrounding community—the JFK employees, the Port Authority and the surrounding Queens, New York, community. Lewis says, "The JFK airport

employs about 60,000 people—which is remarkable—so it is really a town."

Another beneficiary of the compassionate veterinary care will be the canine employees that work at the airport—the police dogs, the TSA dogs, the bomb sniffers.

A few design details: The finished veterinary hospital will take up just 6,000 square feet of the massive 178,000 square-foot ARK complex. "It is mostly a general practice right now but has specialty elements—the surgery rooms are very nice, well outfitted," says Lewis. "There will be opportunities for diagnostics to be performed on the site as well—ultrasound, x-ray and some in-house lab work. So it will be a very hardworking hospital for the square footage.

"I do think that the idea of veterinary care on airport property in itself is pretty innovative and pretty brilliant," continues Lewis. And the ground-up building within the hangar is exciting for Lewis as well. "We're getting a chance to really design it as efficiently as possible." **dvm360**

Design details and bright ideas

Included with this issue of **dvm360** is the 2017 Veterinary Economics Hospital Design Supplement, featuring brilliant tips, tricks and ideas any hospital can borrow for better productivity and patient care. Check it out and then visit dvm360.com/hd for more resources.



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COE rejects University of Arizona's veterinary school proposal a second time

The novel-concept veterinary school can reapply for accreditation in June.

The American Veterinary Medical Association (AVMA) Council on Education (COE) has rejected the University of Arizona School of Veterinary Medicine's proposal for accreditation a second time, according to a release from the university. The plan for the school is a novel fast-track concept that will allow students to complete their doctorate of veterinary medicine degree in three years, instead of the traditional four.

UA plans to revise and resubmit its proposal and has already taken steps to begin the revision process, the release states. This includes hiring veterinary consultant Mark Cushing, JD, of the Animal Policy Group, who has experience with COE accreditation.

"Accreditation should be viewed as a process, not an obstacle, and pursuing accreditation is central to our goal of providing a superior program of the highest quality," Andrew Comrie,

senior vice president for academic affairs and provost, says in the release. "We intend to work with the COE to meet or exceed all of its standards and become a program worthy of Arizona and the University of Arizona."

The COE found at its March 26-28 meeting that the university's plans still fall short in four of its 11 standards, meaning that students enrolled might not receive the best-quality education that they could. Because of these failures, the COE decided to uphold its decision to deny a letter of reasonable assurance to the school following this appeal, according to a COE release.

"The Council on Education denied a letter of reasonable assurance to the University of Arizona School of Veterinary Medicine. The council determined that the plan did not provide reasonable assurance that, if implemented, the plan would allow the school to come into compliance with

standard 2, Finances; standard 4, Clinical Resources; standard 6, Students; and standard 8, Faculty," the release states.

UA's initial application for accreditation was denied in June 2016, with the COE finding that UA's plan met only six of the 11 standards. In September the school filed an appeal to that decision, which was discussed in December and finalized at the March 2017 meeting. After this second denial, the appeal process on the initial accreditation application is closed. The COE did reverse its decision on the research standard, meaning that UA now meets seven of 11 standards.

According to section 6.2 of the COE's policy and procedure manual, "a college that fails to be granted reasonable assurance following an evaluation by the COE may not apply for reconsideration for 12 months after the council's initial decision." Under this rule, the

12-month period should technically begin on March 26, 2017, the date of the second decision after appeal. The COE has instead decided that the 12-month period may begin retroactively on June 14, 2016, the initial decision date, the release states. This allows the school to reapply for accreditation on or after June 14, 2017.

Another component in UA's plan for resubmission is to open a search for a permanent dean of veterinary sciences who will lead UA's efforts to establish a veterinary science faculty and create the curriculum and program for clinical training. An interim dean will be appointed to accelerate the accreditation efforts.

The school, if accredited, would be the only public veterinary school in Arizona. The only other veterinary medicine program in the state is at Midwestern University, which is a private school. [dvm360](#)

>>> An architect's rendering of the facility for the proposed veterinary school at the University of Arizona.



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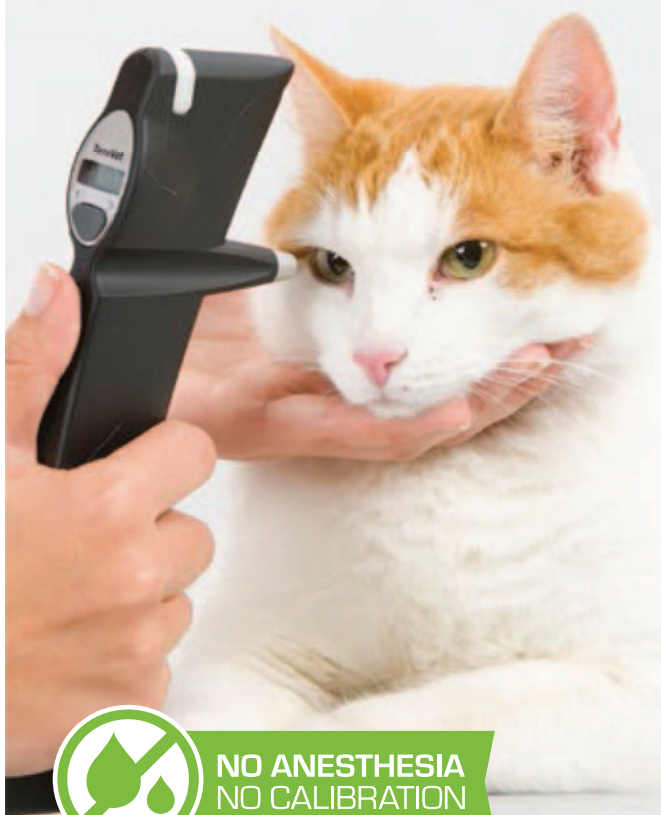




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STUDY REFERENCES

Vet Ophthalmol. 2013

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NEWS | Continuing education

The top 10 sessions at CVC

Veterinarians packed into these clinical lectures during CVC in 2016. Check out similar topics planned for this year, plus find resources to help right now with the patient in front of you.



Organizers of the CVC, the thrice-yearly live event associated with *dvm360* magazine, *Vetted*, *Firstline* and *dvm360.com*, work hard (and by “hard” we mean meticulously, tirelessly, even obsessively) to identify the best speakers and topics that fit our attendees and readers.

And you know who you are, attendees and readers—busy practitioners who are too busy protecting pets’ health and breaking things down for clients to spend hours reading dense journal articles or travel to the other side of the continent

for a CE event. You want your education served up with clinical relevance and to get to the point quickly—and if you chuckle (or outright belly-laugh) along the way, so much the better.

Judging by the popularity of the 2016 sessions, the CVC clinical mavens did all right. Browse through our top 10 countdown to check out which topics and speakers veterinarians voted for with their feet, then check out our related online resources and similar sessions at CVC this year in Kansas City, August 25-28. (Want to register now? Go to thevc.com/register.)

Drumroll, please!

10

2016 session: Pharma and feline pain: Making the best choices (Robin Downing, DVM, DAAPM, DACVSMR, CVPP, CCRP)

What to attend at CVC Kansas City: Acute on top of chronic pain in geriatric patients (Michael Petty, DVM, CCVP, CCRT)

*You can get more pet pain management resources at dvm360.com/paintoolkit.

9

2016 session: Antibiotic review: What you wish you remembered or might never have learned in vet school (Melissa Clark, DVM, PhD, DACVCP)

What to attend at CVC Kansas City: Antimicrobial decision making: Interpreting culture and susceptibility data (Dawn Boothe, DVM, MS, PhD, DACVIM, DACVCP)

8



2016 session: Feline vomiting: New tactics for identifying the cause and treating it (Katherine Tolbert, DVM, PhD, DACVIM)

What to attend at CVC Kansas City: It’s just a hairball...or is it? Understanding the vomiting cat (Kelly St. Denis, DVM, DABVP)

7

2016 session: Treating diabetes mellitus: What should I use? (Ellen N. Behrend, VMD, MS, PhD, DACVIM)

What to attend at CVC Kansas City: Feline diabetes mellitus: Is remission a reasonable, achievable goal? (Kelly St. Denis, DVM, DABVP)

*Check out dvm360.com/diabetismellitus for the latest clinical articles on this condition.

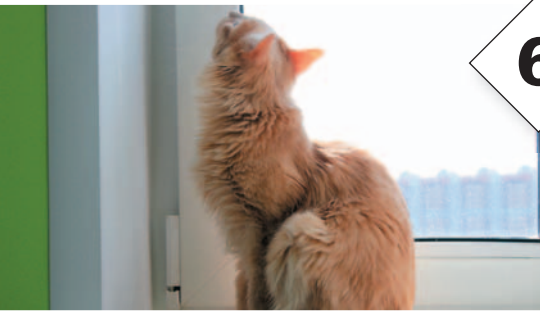
Find what you need at dvm360.com and thevc.com

We do our best to provide the resources you need to address the most common conundrums in your clinic at dvm360.com/medicine. But nothing beats in-person education. Register for CVC Kansas City (August 25-28) now—you don’t want to miss your chance to learn from the best in the business. Scan the code to learn more.



last year—and what to attend in 2017

Over 700 attendees chose this session last year



6

2016 session: Feline hyperthyroid disease: New guidelines (Stephen Bailey, DVM, DABVP)

What to attend at CVC Kansas City: Resolving feline thyroid problems (David Bruyette, DVM, DACVIM)

2016 session: Diabetic conundrums: Difficult-to-manage cases (Ellen N. Behrend, VMD, MS, PhD, DACVIM)

What to attend at CVC Kansas City: What to do when insulin therapy stops working (David Bruyette, DVM, DACVIM)

2



2016 session: Managing chronic otitis: Treating the difficult case and preventing recurrence (James Noxon, DVM, DACVIM)

What to attend at CVC Kansas City: Unlocking the mysteries of the ear (Anthea Schick, DVM, DACVD)

1

5

2016 session: Updates on treating feline gingivostomatitis (Barden Greenfield, DVM, DAVDC)

What to attend at CVC Kansas City:

How many ways can cats get rid of teeth? (Heidi Lobprise, DVM, DAVDC)

*More veterinary dentistry content at dvm360.com/dentistry.



4

2016 session: When cats retch, heave, yack, gag 'n hurl: What does it really mean? (Stephen Bailey, DVM, DABVP)

What to attend at CVC Kansas City: (See our suggestion for No. 8!)

2016 session: Managing chronic otitis: Tips to maximize the value of your treatment (James Noxon, DVM, DACVIM)

What to attend at CVC Kansas City: Another ear infection? Dealing with chronic otitis (Anthea Schick, DVM, DACVD)

*Plus, check out the dvm360 toolkit that came with this issue!



3



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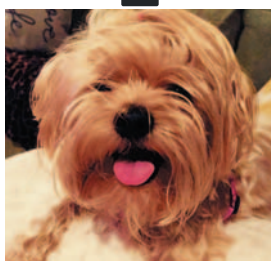
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Dunkin Butterbeans



Farrah Pawcett



Fiona Penny Pickles



The Other Dude



Yeti Spaghetti

Top 10 wacky cat and dog names of 2017

Nationwide serves up the wacky names in an epic lineup of punny honorifics, appalling appellations and silly sobriquets.

By Hannah Wagle, Assistant Content Specialist

From dignitary namesakes to oxymoronic monikers, the results of Nationwide's annual wackiest dog name contest are sure to impress. Check out the top 10 dog names, or skip straight to the cats on page 30.

Dunkin Butterbeans

There are three features to Dunkin's name that each represent something important to owner Nicole DePalma of Boston. "Dunkin" represents the name of DePalma's favorite Boston-based doughnut shop. The second aspect comes from Dunkin's first trip to his veterinary office, where the staff remarked that he looked like a slab of butter sitting on the table. The final part comes from Boston's well-known nickname, Bean Town.

Farrah Pawcett

Katherine Warren and her family from Houston, who won the wackiest pet name competition two years' prior with their dog Baron Von Furrypants, knew they needed a impressive name for their female Labrador retriever puppy.

"Her beauty and yellow coat reminded us of another Texas blonde—Farrah Fawcett, so we put the two together and the name Farrah Pawcett was created," Warren says.

Fiona Penny Pickles

Jennifer Mickelson of Fort Lauderdale, Florida, and her family were torn between three names before deciding to stitch them all together, bringing forth the name Fiona Penny Pickles.

The Other Dude

When Sara Kalista of Fairfield, Montana, lost her 3-year-old boxer, The Dudeness, to an aggressive type of cancer, she was devastated. And when she brought a new boxer puppy into the family, she wanted to honor The Dudeness by dedicating the puppy's name to his memory.

Yeti Spaghetti

Peter Scherer of Southbury, Connecticut, realized that his newly adopted Great Pyrenees/Labrador retriever mix resembled a yeti when he ran in the show. Thus, he was dubbed "Yeti." When Yeti ate a spilled plate of spaghetti in seconds, he earned the second tier of his name.

Monsieur Le Colonel Mustache

Generations of Cavalier King Charles spaniels have been raised by Alasdair and Harriet Seth of Dallas, Texas, over the years. To honor the breed's

heritage and reflect their nobility, the Seths have always given their dogs European-themed monikers.

"We saw that he had a mustache right away," Alasdair Seth says. "We built off that and the name Colonel Mustard from a well-known British board game."

Empress Tzu Tzu

After their beloved Shih Tzu passed, Taj LeRoy of Discovery Bay, California, and her family decided to bring a new female Shih Tzu into the pack.

To match her heritage, LeRoy says she researched historic Chinese empresses. "I came across the history of the feminist Dowager Empress of China, Tzu Hsi, and I thought it was a great fit," she says, "but I wanted to change it just a bit, and that's when we came up with Empress Tzu Tzu."

Cheesebro

Green Bay Packers football plays a large role in the naming of Aurora, Colorado, resident Monte Wheeler's pet. And when he adopted a 1-year-old American bulldog from a local shelter, the name Cheesebro was already in his head, taking inspiration from the name Chest-brow from the end-credits of a movie.

"I knew I had found my dog as soon

as I saw her," Wheeler says. "Even though she is a female, I knew she was a perfect Cheesebro."

Tango Mango

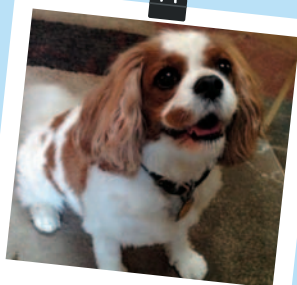
When Faith Michaels of Brookline, Massachusetts, watched her Jack Russel, Tally-Ho, give birth to a litter of puppies, one entrance became the inspiration for a unique name.

"Tally-Ho couldn't quite decide where to give birth so she started walking around," Michaels says. "She took a few steps and one of the little puppies came out tiptoeing as his mother walked, almost as if he was doing the Tango dance."

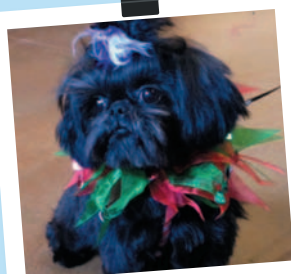
Choo Choo Boo Boo

When Jerry Rodriguez of Rancho Cucamonga, California, brought a mini schnauzer home, his 3-year-old daughter already had a name picked out.

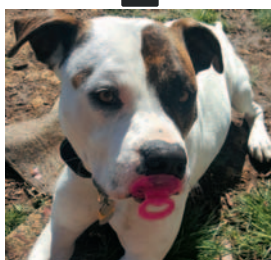
The name stemmed from his brother-in-law's schnauzer, Chewy. "My daughter called Chewy by the nickname 'Choo Choo,'" Rodriguez says. "When she first saw her new puppy, she must have realized that it was also a schnauzer and started calling her 'Choo Choo Boo Boo.' We decided to go with it and made it her official name."



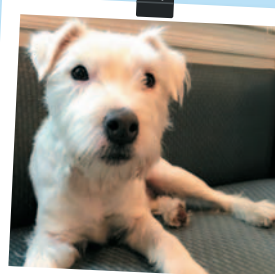
Monsieur Le Colonel Mustache



Empress Tzu Tzu



Cheesebro



Tango Mango



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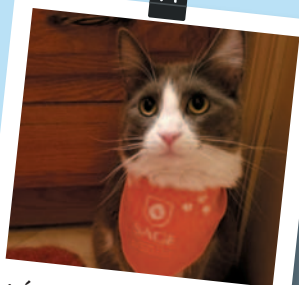
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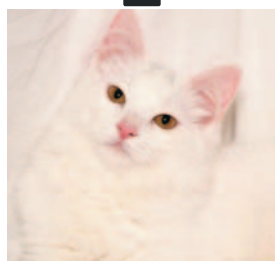
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Obi Wan Catnobi



Winston Purrchill



The Great Catsby



Jabba the Butt

And now for the cats!

Little Booty Ham Sandwich

Fate in the form of a stray kitten literally jumped into the laps of Yessenia and Sean Savage of San Lorenzo, California. After agreeing to keep the kitten who fell into their arms outside of their house, they brainstormed for a name, according to Nationwide's website.

"We were discussing names when the kitten walked away from us and I mentioned to Sean that she had a cute little booty," Yessenia Savage says. "My husband was not in agreement with that as a name, so I suggested 'Ham Sandwich.' My thought was you can never go wrong with a ham sandwich when you're hungry, so why not for a pet name?"

Once both names were on the table, the two names came together.

Obi Wan Catnobi

Ellen Stein of Chicago, Illinois, was living in Spain with her future husband when she found and adopted a stray kitty. As huge fans of the Star Wars films, Ellen and her husband tossed around movie-related names until one moniker stuck perfectly: Obi Wan Catnobi.

"I feel like your pet's name should represent something that you enjoy," Stein says. "You're around your pets all the time and they're part of the family, so I feel like it's important that their name should make you smile."

Winston Purrchill

After adopting a 6-month-old kitten from a rescue organization, Laura Denenholz of Pasadena, California, began a mission to find a punny moniker that would perfectly suit her new pet.

After finding a list of names with twists on historical figures, she decided to play with the name Winston Churchill. "I thought Winston suited him well," says Denenholz, "but I wanted his name to be unique. The name just kind of came to me, and it fit perfectly. People love it and it's received quite a few laughs."

The Great Catsby

A scrawny, hungry kitten followed Gerard Smith and Amber White of Raleigh, North Carolina, home as they walked their daughter home from school. After realizing they had no cat food, they fed the homeless cat a can of crab meat. This was the start of The Great Catsby's integration into the family.

"He was fun and loving inside the house, but wild and loved to hunt birds outside," Smith says. "We also joked that he was fed the finest food, since his first meal was crab. He reminded us of the character Jay Gatsby, and from that we formulated The Great Catsby."

Jabba the Butt

David and Heather August of Point Rocks, Maryland, attended multiple adoption events in search of the perfect cat, according to Nationwide's website. They both pictured having a heavier-set cat that could lounge

around the house with them. And eventually they stumbled upon Jabba.

"We're both big Star Wars fans so we knew it was a sign," David August says. "She was just kind of lying there, flicking her tail just like the scene from the movie. We decided to take her home and added 'the Butt' to make her name fun."

Isaac Newton

When Margaret Maczulski of Libertyville, Illinois, adopted an 8-week-old kitten, she wanted something to reflect the cat's personality while still remaining unique. "He was a really smart kitten, so I wanted to give him a name that represented intelligence," says Maczulski. "I started researching historical figures and I came across Isaac Newton. The name Isaac Newton just kind of came to me and I went with it."

Whiskerus Maximus

After a scarred but fearless stray followed Ali Blacker and Peter Gerena of Brooklyn, New York, home, the two decided to adopt him. The next step was to give him an applicable name. "We thought he looked like a gladiator with all his scars," Blacker says. "Then we remembered a scene from the movie Anchorman that had a cat dressed as a gladiator named Whiskerus Maximus and it just stuck."

Ninja Killer Nine Thousand

Shawna Sherman of Hayward, Cali-

fornia, knew that with her new cat had to come a unique name. "I always like to give my pets super cool names," Sherman says. "People names can be kind of boring so I try to give my pets awesome names that a person would never be able to have."

Fifty Shades of Graham

Arturo Davila of Glendale, California, began his search for the perfect name after rescuing a small kitten that was abandoned in a friend's yard. For inspiration, he looked at the Russian Blue's appearance, which had numerous tiers of gray fur.

"I was looking at all the different shades of gray in his coat and the name just kind of came to me," Davila says. "He's also really rambunctious and bites a little too much when he's excited, so he has a similar personality to the main character from the series 'Fifty Shades of Grey.'"

Dog the Cat

After 25 years of primarily owning dogs, Susan Walen of Atlanta, Georgia, decided to add a sphynx kitten to the family. And with owning a cat after nothing but dogs, there was some trouble adjusting to the differences in species.

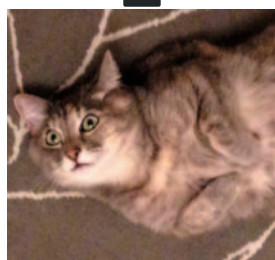
"The first week that she lived with me I kept saying, 'Here, puppy,'" Walen says. "After a while, I decided to base her name off of it and I came up with Dog the Cat. It really fits her, too, because she acts more like a dog than a cat." **dvm360**



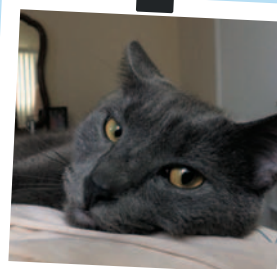
Isaac Newton



Whiskerus Maximus



Ninja Killer Nine Thousand



Fifty Shades of Graham



Dog the Cat



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USCACVDC00015

Who owns this cat?



What do you do when you find a microchip in a patient that visits your veterinary practice and the pet owner says “no,” you can’t scan it? Here’s how I handle this delicate situation.

We’ve had a few lost pets over the years come into our hospital with a microchip that helped us successfully return the pet to its owner.

But it doesn’t always work out nicely.

Last fall, a couple who were long-time clients came in with an adult cat they’d been taking care of for six months. They wanted to make sure the cat was healthy. After an exam and a

they didn’t have any say in this. Upon learning what had happened, I told the technician to hang up the phone. I informed the staff that our primary obligation was to the owner standing here with us and the pet they’d brought into the building.

My understanding is that we have a legal obligation to abide by our clients’ wishes. The moral and ethical decision would have been to find the owners at-

selves, the line gets murky.

In these cases, I refer back to existing medical information consent laws.

Needless to say, in this case, my staff was upset both with what I said and the client’s decision. I followed up with the clients a few days later, but they didn’t have much to say. Maybe over time they’ll realize that someone out there might be wondering about their pet and that contacting the previous owner is the right thing to do. Maybe the previous owner doesn’t want the cat back and it all worked out.

I don’t believe there’s a clear-cut mandate in the law on what to do in these specific situations. It’d be nice if we had more clarity in the law, though the onus of ownership is a dicey subject that can’t be easily legislated in one day. What if the pet had two microchips?

clean bill of health, I moved on to the next exam room.

The veterinary technician was about to walk the owners to checkout when she realized the receptionist had forgotten to check for a microchip when getting the cat’s weight (which is our policy). Upon waving the wand, a number appeared and the technician informed the owners that this cat could have had a previous owner. The owners were upset—they didn’t want to lose the cat, regardless of whether he’d had a previous owner.

When I came out of the exam room, I found the technician on the phone with the microchip company. Another associate was telling the upset owners

tached to the microchip and see if they still wanted this cat. But that moral and ethical decision rested with the client, and it was our legal duty not to give this medical information away without their consent.

This is a tricky situation

I don’t believe there’s a clear-cut mandate in the law on what to do in these specific microchip situations. Most lost pets with microchips wind up in rescues and shelters, and those facilities’ primary goal is to get the pet back to a loving owner or place it in a new loving home. But in this situation, when the client has bonded with the pet and taken ownership them-

Expect this to get trickier

It’d be nice if we had more clarity in the law, though the onus of ownership is a dicey subject that can’t be easily legislated in one day. What if the pet had two microchips?

Microchips have provided some wonderful stories and brought hundreds of thousands of pets back to their owners. But I always let clients know that a number of things need to happen for a microchip to work. First, the pet needs to find someone with a reader. The second step is what everyone forgets: The finder needs to approve contacting the appropriate company and previous owner.

I also usually need to tell clients that the microchip isn’t GPS, but I’m sure that’s coming. [dvm360](#)

Dr. Andrew Rollo is a Veterinary Economics Editorial Advisory Board member and an associate at Madison Veterinary Hospital in Michigan.

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What \$300,000 in student debt does to the veterinary school dream

As a first-year vet student I refuse to lose hope—but I don't see the solution either. *By Justin Sahs*

I am an incoming first-year veterinary student. Currently three years out of college, I spent my childhood listening to my grandfather's stories about his time as a veterinarian in France, and I've always known I wanted to follow the same path he walked, as well as my great-grandfather before him.

The past seven years of my life, first obtaining a degree in biology and chemistry, then working at Pender Veterinary Centre as a veterinary nurse, have only confirmed and fueled my passion for this field. So you can imagine how ecstatic I was when I opened a letter beginning with "Congratulations, you have been accepted into our College of Veterinary Medicine." Hands trembling, I could barely

realize just how bad it was until I went through the numbers myself.

Here are the cold hard numbers of my reality: The university I will attend requires its out-of-state students to pay out-of-state tuition for all four years, at roughly \$60,000 per year. I will also have to cover living expenses such as rent, utilities and groceries, as well as textbooks and other materials, estimated at \$12,000 to \$15,000 a year. With federal loans covering the first part of each year's loan at 6 percent interest and the

In other words, my total debt will grow by more than 15 percent before I even earn my veterinary degree and begin practicing.

Since I knew I would be paying for school myself, I've been saving while working these past few years, to the tune of just over \$20,000. However, after calculating my expected costs, I realized that would cover just a little more than one year of living expenses and school materials without touching tuition. This is where the magnitude of my predicament began to sink in.

What terrifies me is that I'm not alone. A large number of veterinary students are facing the same dilemma, with the American Veterinary Medical Association (AVMA) reporting that more

than 20 percent of 2016 graduates have at least \$200,000 of debt before they enter the job market. And yet, after several months of searching, I have yet to find a comprehensive system designed to help future veterinarians emerge from under this mountain of debt.

Yes, there are scholarships and debt relief programs, but these are, by definition, exclusive. These programs leave a not-insignificant number of graduates saddled with crushing debt they can't hope to pay back with their expected salaries. In my scenario, without any debt relief, even if I were to pay \$33,000 every year toward my student loan debt, I'd still be paying it back for the next 20 years.

That means I will give up a huge portion of my post-tax salary until my 50th birthday, precluding any real opportunity to save for retirement or my future children's education (to prevent them from landing in the same predicament). Simply put, this doesn't seem like any way to live life, especially considering the energy and time it

takes to obtain a veterinary degree, let alone practice in the field.

In writing this, I hope to encourage incoming students to formulate a plan for how they'll tackle this debt issue before entering school. I'm concerned that the financial burden of school may soon drive the best and brightest students to follow a different, more financially feasible path—if it's not already.

I find this heartbreaking, because the veterinary field as a whole will suffer. And the rising debt punishes those who have put their hearts and souls into following their dreams regardless of the cost. I have a personal stake in this, as I'm one of those foolish people choosing to pursue my passion rather than do what makes financial sense.

I have always wanted nothing more than to become a veterinarian and someday open my own practice. My life plan has always been based on this goal. Unfortunately, the numbers do not lie, and I refuse to live the rest of my life under crushing debt. This is not, however, to say that I will simply roll over and admit defeat.

I've spent the past several months researching my options and looking for a solution—to little avail. But if anyone reading this has any wisdom that they can impart to help make my dreams a reality, I will listen with an open mind and eager heart.

Although I'm just one person standing against this growing pandemic of debt, I'll do everything I can to disseminate what I learn along the way to others in the same situation. My hope is that together we can stop this disease plaguing veterinary medicine. [dvm360](#)

Justin Sahs is a veterinary nurse at Pender Veterinary Centre in Fairfax, Virginia. He has recently been admitted to the Kansas State University College of Veterinary Medicine and is set to begin classes in August.

speak as I turned and hugged my mom and dad. Finally, after all of these years of dedication and hard work, I could start down the path to becoming a veterinarian.

But once my initial elation started subsiding, reality began to creep in: how much would it actually cost to pursue my dream? I already knew it would be expensive and student loan debt was the No. 1 crisis facing the veterinary community at this moment. But I didn't

rest covered by private student loans at a variable rate of 8.5 to 10 percent, I should graduate from veterinary school with a total debt of around \$300,000—not to mention the \$46,000 of interest that will accumulate while I'm in school.





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A ‘hole in the universe’ with Dr. Carl Osborne gone

Regarding the death of Dr. Carl Osborne, you just ruined my day. I am somewhat surprised that Carl was only 76. Not only was he always the human equivalent of the energizer bunny, but he has been a force

in our profession for such a long time. Carl exuded enthusiasm for veterinary medicine and education.

After graduating from the University of Georgia (where I was taught by Dr. Del Finco), I did an internship at the University of Minnesota, thus being exposed to two of the triumvirate kings of the kidney. Both programs, and men, were oriented toward problem-solving. Their textbook, as a reference, has shaped critical thinking.

In my day, most veterinarians gradu-

ated from one school, did an internship or residency at another, and those that stayed in academics moved on again. Thus leading to my conclusion: If all people have six degrees of separation from Kevin Bacon, veterinarians have three degrees of separation from Carl Osborne. That being said, I couldn’t believe it when Carl remembered me decades later. There is a hole in universe now.

Patricia Burke, DVM
Providence, Rhode Island

GALLIPRANT® (grapiprant tablets)

For oral use in dogs only
20 mg, 60 mg and 100 mg flavored tablets
A prostaglandin E₂ (PGE₂) EP4 receptor antagonist; a non-cyclooxygenase inhibiting, non-steroidal anti-inflammatory drug
Caution: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.
Before using this product, please consult the product insert, a summary of which follows:
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.
Storage Conditions: Store at or below 86° F (30° C)
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Reference: 1. http://www.vet.upenn.edu/docs/default-source/VIC/canine-bpi_userguide.pdf?sfvrsn=0
Additional information is available at 1-888-545-5973.
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Brief Summary: AT1-040-16

Why outside investors can destroy vet med

The ignorance demonstrated in the column “Why outside investors want in on the veterinary profession” (May 2017) explains exactly why we need to quit following the advice of practice analysts and avoid emulating the practice changes in human medicine. First, most vet schools actually screen applications to detect students who place higher income at the top of their expectations of the profession. The LSAT, on the other hand, seems to screen students for their ability to accept the status quo and thus leave precedent unquestioned rather than graduating large numbers of open minded, critically thinking lawyers with altruistic ideas. The legal profession helps maintain the status quo by selecting for “acquiescing” traits in potential candidates.

Historically, vets typically weren’t driven by money, but rather by altruism and a desire to do “good.” In my small, low-cost ambulatory practice, I’m often astounded by the complaints of new clients seeking my services over the large, “fancy” practices filled with large staffs and stainless steel exam tables. My clients prefer to watch me do their pets’ surgery, spay or neuter on the kitchen table or help me suture a leg wound on the kitchen floor or tailgate of a truck. People sued Dr. Pol because they were outraged when he performed surgery without a mask or gown, but he was exonerated when

their investigations determined that he had no record of complaints filed against him by clients and no history of morbidity and mortality resulting from his practices. His clients were completely satisfied with his standard of care, and it was only TV viewers who were complaining about what they considered to be poor practices. They wanted what was taught in vet school, not what was practical, efficient, safe and cost-effective.
He and many others have proven that academic medicine may be important in academic centers, but stats would surely prove that many species of animals can undergo surgery in open grassy fields where they’re less likely to develop postop infections and other complications, even when the surgeon is in a t-shirt and not wearing a cap and gown. Gloves and aseptic-to-sterile technique is very efficient and safe, and if you don’t believe it, research the conditions many practice under during wars, hurricanes and other “disaster” conditions.
Outside investors don’t understand medicine or what people want. Their goal is purely economic, with no regard to patient satisfaction or compassion unless the practices alienate clients. Practical vets are motivated by conscience, and they realize they can easily increase income by raising volume rather than prices. **dvm360**
Dr. Deb
dvm360.com user

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

IMPORTANT SAFETY INFORMATION

Not for use in humans. For use in dogs only. Keep this and all medications out of reach of children and pets. Store out of reach of dogs and other pets in a secured location in order to prevent accidental ingestion or overdose. Do not use in dogs that have a hypersensitivity to grapiprant. If Galliprant is used long term, appropriate monitoring is recommended. Concomitant use of Galliprant with other anti-inflammatory drugs, such as COX-inhibiting NSAIDs or corticosteroids, should be avoided. Concurrent use with other anti-inflammatory drugs or protein-bound drugs has not been studied. The safe use of Galliprant has not been evaluated in dogs younger than 9 months of age and less than 8 lbs (3.6 kg), dogs used for breeding, pregnant or lactating dogs, or dogs with cardiac disease. The most common adverse reactions were vomiting, diarrhea, decreased appetite, and lethargy. Please see brief summary on page 36 for prescribing information.

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.



CAN WE TALK? | Michael Paul, DVM



‘Bump the lamp’ for pet owners

What Disney’s *Who Framed Roger Rabbit* can teach us about the veterinary client experience.

Light the way for veterinary clients to be truly wowed by your client service by “bumping the lamp.” (Hint: Don’t bump this dog’s lamp. He doesn’t like it.)

Heartgard®
(ivermectin/pyrantel)^{Plus}

CHEWABLES

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

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

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

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

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

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

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

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

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

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

Monthly treatment with HEARTGARD Plus also provides effective treatment and control of ascarids (*T. canis*, *T. leonina*) and hookworms (*A. caninum*, *U. stenocephala*, *A. braziliense*). Clients should be advised of measures to be taken to prevent reinfection with intestinal parasites.

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

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

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

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

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

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

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

ADVERSE REACTIONS: In clinical field trials with HEARTGARD Plus, vomiting or diarrhea within 24 hours of dosing was rarely observed (1.1% of administered doses). The following adverse reactions have been reported following the use of HEARTGARD: Depression/lethargy, vomiting, anorexia, diarrhea, mydriasis, ataxia, staggering, convulsions and hypersalivation.

SAFETY: HEARTGARD Plus has been shown to be bioequivalent to HEARTGARD, with respect to the bioavailability of ivermectin. The dose regimens of HEARTGARD Plus and HEARTGARD are the same with regard to ivermectin (6 mcg/kg). Studies with ivermectin indicate that certain dogs of the Collie breed are more sensitive to the effects of ivermectin administered at elevated dose levels (more than 16 times the target use level) than dogs of other breeds. At elevated doses, sensitive dogs showed adverse reactions which included mydriasis, depression, ataxia, tremors, drooling, paresis, recumbency, excitability, stupor, coma and death. HEARTGARD demonstrated no signs of toxicity at 10 times the recommended dose (60 mcg/kg) in sensitive Collies. Results of these trials and bioequivalency studies, support the safety of HEARTGARD products in dogs, including Collies, when used as recommended.

HEARTGARD Plus has shown a wide margin of safety at the recommended dose level in dogs, including pregnant or breeding bitches, stud dogs and puppies aged 6 or more weeks. In clinical trials, many commonly used flea collars, dips, shampoos, anthelmintics, antibiotics, vaccines and steroid preparations have been administered with HEARTGARD Plus in a heartworm disease prevention program.

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

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

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



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We can all distinguish between a really good experience and an exceptional one: that perfect day, that amazing meal, that gorgeous sunset. We tend to remember the overall experience while many of the details that went into making it so extraordinary are lost. For instance, the experience of that sunset wasn’t just the speed with which the sun met the horizon or the stunning colors bouncing off the clouds but also the air temperature, the breeze and the sand between our toes. Whether we were aware of it, lots of things worked together to create that experience.

I was recently reminded of the significance of little things when I came upon a YouTube video about the making of the 1988 Disney live-action/animation hybrid film *Who Framed Roger Rabbit*. Roger Rabbit was created before computers started doing the lion’s share of animation work. Every frame of animation was hand-drawn, and it was a masterpiece in terms of the attention to detail.

The YouTube video explains how animators took painstaking care to establish clear and appropriate “sight-lines” and visible physical interaction between the live-action characters and the animated ones throughout the film. They also threw away the previous industry standard for such films, which was to keep the camera stationary when filming the live action so it was easier to draw in the animated characters later. In Roger Rabbit, they shot the movie like a movie and then did the harder work of drawing each frame in the ever-changing perspective required based on the moving camera.

It was the light and shadow accuracy that really set the film apart at the time. Each animated character was drawn in at least five layers in each frame to create a lifelike, 3D appearance. Then, as if that all wasn’t hard enough, they “bumped the lamp.”

In one amazing scene, Roger hits an overhead lamp that swings back and

forth several times as the characters (real and animated) move around. The animators took the changing and moving light into account for every character, every shadow, every frame.

It was a phenomenal amount of work that resulted in a masterpiece of animation most viewers never really appreciated—at least technically. They knew they had an exceptional experience, but they probably didn’t realize why. Meanwhile, “bumping the lamp” became a training tool used to impress upon all Disney employees the need to go above and beyond what’s expected.

Now let’s think about “bumping the lamp” in veterinary practice. I’ve often addressed the importance of the client experience in this column. As veterinarians, we usually know why the client came in—but we’re less sure of what they take with them. What did they tell others about? What was the unremembered subtlety that made their experience exceptionally positive? Here’s how we can “bump the lamp.”

Pay attention to the details—the physical appearance of your office and staff. The physical experience of your clients and patients. A helping hand in or out of the exam room. A cup of coffee. Detailed instructions what you want the client to do going forward and why. Follow-up. Phone calls. Texts.

Your clients expect good veterinary care and compassion for their pets. They might not even consciously make note of all these little things, but subconsciously they will. That’s what practices should aim for: an attention to detail that goes largely unnoticed but would be sorely missed in its absence. Clients might not be aware of how much effort goes into their happiness and comfort, but they’ll be aware that it feels right.

It’s not a waste of time. Go ahead. Bump the lamp. **dvm360**

Dr. Mike Paul is the principal of MAG-PIE Veterinary Consulting and lives in Anguilla, British West Indies.

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Please see brief summary on page 38

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Three *rounds* with Dr. Codger

Dr. Greenskin drags her boss into a boxing match of wit and wisdom. But did she underestimate the crusty old veterinarian?

Dr. Greenskin steers her worn aquamarine Ford Taurus into the hospital's gravel parking lot on a gorgeous spring morning and lowers the volume on her Harry Potter audiobook before coming to a stop next to Dr. Codger's shiny diesel pickup. "The boss is always at the office before I arrive," she mutters while hand-cranking her window shut. "Does he live here? Do I really want to be a practice owner if it means waking up with the chickens every day?" Greenskin yawns at the thought.

Today is Dr. Codger's surgery day, so the young associate begins brac-

ing herself for the endless barrage of rushed appointments. Yet there's an upside to having the boss captive in the operating room or treatment area: She knows right where to find him if a question arises.

With seemingly straightforward morning slots, Greenskin decides to have a bit of fun taking swipes at the crusty Codger. By this time she knows her opponent pretty well and cautions herself not to underestimate the guy. He's been through anything and everything, and there's a reason he's still thriving in his job after so many decades. And yet ...

Ding! Ding! The two docs enter the ring

Greenskin pokes her head into the treatment area. Codger is about halfway through docking the tails and removing the dewclaws from a substantial Labrador litter when she interrupts: "So tell me again how much student debt you had when you finished school?"

Codger looks pensive as his assistant picks up the next squealing pup. "We couldn't really get a lot of student loans back then," he answers. "I had been saving all of my college job money, and my parents let me borrow a few thou-

sand dollars to fill in the gaps. At about \$2,000 a semester, vet school wasn't cheap, but I got through it."

Dr. Greenskin feigns sympathy. "That must've been really rough, sir!" she laments. "A friend of mine just graduated from vet school with \$300,000 of student loan debt. Her out-of-state tuition alone was \$19,000 a semester."

Codger coughs and drops a hemostat as Greenskin sprints off to her next exam.

Ding! Ding! Greenskin: 1, Codger: 0

For the next jab, the young associate accosts Codger in the OR, where he's trimming up a piece of exposed x-ray film (he's held onto two metric tons of the stuff for this very purpose) to finish off his aural hematoma repair.

Greenskin, full of fire and starting to regret the third espresso shot she requested in her morning latte, delivers her blow: "So, Doc, I just saw Sammy the Pomeranian. I noticed you've had him on Lasix and enalapril for the past five years with no change to the murmur. He's also still coughing. We got some radiographs, and it looks like tracheal collapse. His mom was happy to stop the meds." She pauses for effect. "Don't worry—I smoothed things over by telling her you were just doing your best."

Though most of Codger's face is hidden by a surgery mask, Greenskin takes delight in watching his brow wrinkle in that familiar way and in hearing his muffled grunt. She dashes off, leaving the old doctor to trim another foot of Braunamid off the reel. Her white coat trails behind her, and she imagines she must look like a veterinary superhero.

Ding! Ding! Greenskin: 2, Codger: 0

At the beginning of round three, Greenskin feels she has the old fella right where she wants him. With her opponent on the ropes, she enters the dental area to deliver the coup de grace.

Mallet and chisel in hand, Codger's working on another pesky carnassial extraction. Greenskin seizes the rare opportunity for real-time, in-the-trenches, no-holds-barred critique. She starts, "So remember the high-speed drill we were—" but the young

associate is interrupted by Codger's booming voice.

"Dr. Greenskin! I'm so glad you're here!" Doc Codger exclaims, ready to unleash what he's been holding back all morning. "I actually got a bunch of emergency calls last night, and guess what? Three were cases you saw in the last 48 hours! In fact, the evening was so busy I decided to go ahead and stay here overnight. Good thing I installed that comfy couch and shower back in the '60s, eh?" He pauses his work just long enough to look up and see that the smug smile has disappeared from the associate's face.

"Anyway," he continues, shaking his head, "that poor standard poodle—the postop mass removal? Well, I really wish you would've suggested an e-collar even though you bandaged the leg. Having to make that poor dog vomit so soon after your surgery was just heartbreaking, but the clients were relieved the bandage came up in one piece!" Greenskin meagerly starts to open her mouth, but Codger holds up his hand to silence her. "No need to fear," he assures her. "The bandage I put on will stay on."

Codger is on a roll now. "Oh, and that old golden retriever—the one that was depressed? You started him on carprofen yesterday afternoon, but can you believe he had a hemoabdomen? I was able to get him stabilized and his

owners decided to take him to the specialty clinic. You may want to check in with them as well as with the owners!"

A feeling of nausea creeps over Greenskin. That golden is one of her favorite patients. She starts to explain but Codger talks right over her mumbles. "There are some others, but I'll just let you sift through the ER stack up front. I would've called you but I know 'Game of Thrones' was on last night, so I didn't want to bother you!" The low jab delivers its desired effect, and the old fighter goes in for the final blow.

"It's been a long 36 hours for me, so I told my family you'd be happy to cover emergency call for the rest of the week. I gave you my afternoon appointments today as well—just double-booked you, in fact," he chuckles. "But I know you can handle it. I'll be heading home as soon as this patient recovers." Greenskin exits the ring, defeated.

Ding! Ding! Codger wins with a knockout!

Was Dr. Codger a bit too hard on the young doc? Perhaps, but Greenskin did start the fight, after all, and she'll be back in the ring soon enough. Next time, she'll be even stronger and may even have enough vigor to go a full 12 rounds! **dvm360**

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



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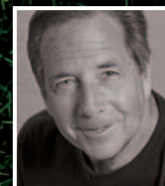
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A (vaccine) shot in the dark

Was this vaccine-clinic veterinarian right to order a steroid injection over the phone for a pet he didn't even remember seeing or examining?

Dr. Hart has been practicing veterinary medicine for 31 years. He's done a little emergency work, a ton of relief work, and many shifts in many municipal vaccination clinics.

When he did all that short-term work, he always brought along his long-time veterinary technician, who knew his style and needs. She came as part of his service package for no additional fee. This was in keeping with his philosophy of shaping his practice of veterinary medicine to meet his needs.

On a Saturday morning in April, Dr. Hart had scheduled three municipal rabies clinics, each three hours apart. The clinics ran two hours, and he allowed an hour for rest and travel between each one. His experienced technician efficiently prepared the vaccinations, handled the paperwork and interfaced with municipal personnel.

On this Saturday morning, Herbie, a 10-year old golden retriever, was preparing to take the half-mile walk with his mistress to a local rabies clinic at the firehouse. As always, Ms. Collins gave Herbie his morning thyroid

medicine and daily NSAID tablet.

Eventually, Herbie made it in to see Dr. Hart. Ms. Collins and the doctor exchanged some small talk and a couple of quick questions about relevant medical history. Herbie received his vaccination and then moved out of line. Dr. Hart was almost finished and started packing up his essentials, leaving his veterinary technician to attend to cleanup.

After a 10-minute walk, Herbie started to vomit. Ms. Collins returned to the firehouse and spoke with Dr. Hart's technician. The tech promptly called the doctor, who was on his way to the next rabies clinic, and told him that a recently vaccinated dog was now vomiting.

"Sounds like a vaccination reaction," Dr. Hart said. "Give the dog a steroid injection and advise the owner to consult her veterinarian."

Dr. Hart explained the injection specifics to the veterinary technician; he always made sure to bring steroids and epinephrine, in case vaccine reactions occurred. The injection was given, and Herbie soon seemed to be

feeling better and went home.

Early the next morning, Herbie resumed vomiting. Ms. Collins also saw some blood when he threw up. She took him to her veterinarian, who diagnosed a gastric bleed secondary to his NSAID usage. His recent steroid injection had likely exacerbated the smoldering irritation and led to the crisis. Fortunately, after diligent care and owner heartache, Herbie recovered.

Ms. Collins contacted Dr. Hart to voice her displeasure. She felt he couldn't possibly have known enough about Herbie to instruct his assistant to give the steroid injection sight unseen.

Dr. Hart responded that he had assumed Herbie was having an allergic reaction and didn't want it to get out of hand. He said Ms. Collins was the one at fault, as she should have advised him beforehand as to whether Herbie had any medical issues that would make a public vaccination clinic a bad idea.

They agreed to disagree, but Dr. Hart's liability insurance carrier did pay for the dog's medical bills. Do you think Dr. Hart used poor judg-

ment or was negligent—or do you think he acted in the dog's best interest based on the information available to him at the time?

Rosenberg's response

Dr. Hart assumed this was an allergic reaction just like the many he'd encountered before. However, it's never a good idea to implement treatment without seeing or touching a patient. He had no acceptable patient history nor did he even recall who the animal was before he ordered the injection.

He was negligent and was fortunate that he only faced a liability insurance claim and not a state board sanction. All pets, not just private practice patients, deserve equal due diligence. I try to always remember the phrase "First do no harm." [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.



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Popping the question: Your letter of intent

A well-thought-out letter of intent, much like an engagement proposal, can keep from scaring off a potential business partner.

Associates and clinic owners reach out to my firm all the time with a simple question: “I’m interested in buying a local practice and I’ve talked with the owner in general terms, but I don’t know where to go from here.” It’s a simple enough question, but it has a complex answer.

Above all, it’s important not to spoil a deal by badgering the potential seller with emails, phone calls and visits. Instead, the buyer needs to demonstrate sincere interest—and some legitimate evidence of his or her ability to obtain financing.

At the same time, the suitor needs to recognize that there’s a significant distance between “general terms” the parties may have chatted about at a bar or in a brief phone call and the details that will need to be negotiated. Jumping into discussions of price and terms may be premature at this early stage—even fatal to a sale.

Imagine that an associate raises the idea of a buyout with his longtime boss. Surprisingly, the suggestion by the younger doctor that he’d like to close within six months throws the seller into a panic. The older doctor, who might have otherwise been open to a sale, won’t even entertain an offer until he wraps his head around it.

Now, consider if instead the boss throws out a possible sale price. The associate is caught completely by surprise when the figure is twice what he might have imagined. Soon thereafter, the associate elects to surreptitiously pursue a clinic purchase elsewhere rather than face his employer with a far lower counter-offer.

To help my clients avoid these potentially deal-killing missteps, I recommend that they take a step back and consider putting together a letter of intent. This letter isn’t a contract, and it isn’t an offer. More accurately, it’s an offer to explore the possibility of a purchase. Once a letter of intent is created, it can be used artfully (not simply forwarded as an attachment to a brief salutary email) to begin the complicated courtship dance of sorting out transaction specifics.

What is a letter of intent not?

A letter of intent is one of the most sophisticated unenforceable legal documents I draft. It can work magic even if the opposing party never signs it. Think of a letter of intent as an engagement proposal: It demonstrates sincere intention to move forward, but if the deal doesn’t close, the parties return to where they were before.

Again, letters of intent are not contracts. Most properly drafted letters state that unambiguously. However, they do sometimes contain one or two legally enforceable elements, such as a provision stating that the seller or buyer will not negotiate with others regarding the same transaction for a set period of time, or language saying that neither party will disclose any transaction-related information (the seller's tax returns or the buyer's financial position, for example) to any outside third party who doesn't have a "need to know," such as bankers or accountants.

What should a letter include?

This is the issue that separates the sophisticated draftsperson from the many consultants and attorneys who don't utilize the

letter of intent to the full extent of its usefulness. Because it is an entreaty and not enforceable, it provides the party who drafts it an opportunity to express interest without the inclusion of details that might initially disturb the other party.

Elements of the letter

These are the basic issues that might be included in a letter of intent:

- Description of the enterprise to be purchased
- Nature of the transaction: purchase of assets, stock or LLC membership shares
- Price, price formula or price range
- Period of due diligence, or time before the letter of intent will no longer be considered controlling by the parties (with respect to exclusivity in negotiations)
- Time prior to closing
- Financial terms.

Topics to avoid

These are the issues that might not be appropriate in a letter of intent:

- Financing by seller
- Noncompete to be executed by seller
- Continued employment of the seller
- Exclusivity with respect to entertaining other offers (optional)

➤ Nondisclosure agreement (often spelled out in a separate signed document).

Carefully drafted vs. boilerplate

Many attorneys draft letters of intent as contentious "take-it-or-leave-it" proposals. I believe that's an ill-considered approach. Remember that the letter of intent is a proposal. Isn't it unlikely that your beloved will say "yes" if you specify how many children you expect her to bear while you're down on one knee?

It's all in the presentation, my friends ... and in the law, presentation equals drafting. While there's nothing wrong with using boilerplate language as a starting point, the final version needs to take the target party's personality and likely concerns into consideration.

How not to offend

When preparing to create an effective letter of intent, here are some tips:

➤ Provide alternative scenarios for terms you suspect might be poorly

received. For example, If the seller isn't quite old enough for retirement, include the possibility of his staying on as a per diem employee or "consultant."

➤ Leave out specifics regarding known points of contention. Just because the seller says he won't finance any part of a sale doesn't mean he won't budge on that point later.

➤ Instead of specifying a price, include generalities. How about proposing to pay "approximately five times last year's practice profit"? The subjectivity of "approximately" wouldn't cut it in a contract, but this isn't a contract! To the seller, five times profit is sure to be enticing. As you move closer to a contract, let the CPAs battle over the definition of profit. **dvm360**

*Christopher J. Allen, DVM, JD, is president of the Associates in Veterinary Law, which provides legal and consulting services exclusively to veterinarians. He can be reached via email at info@veterinarylaw.com. Allen serves on **dvm360** magazine's Editorial Advisory Board.*

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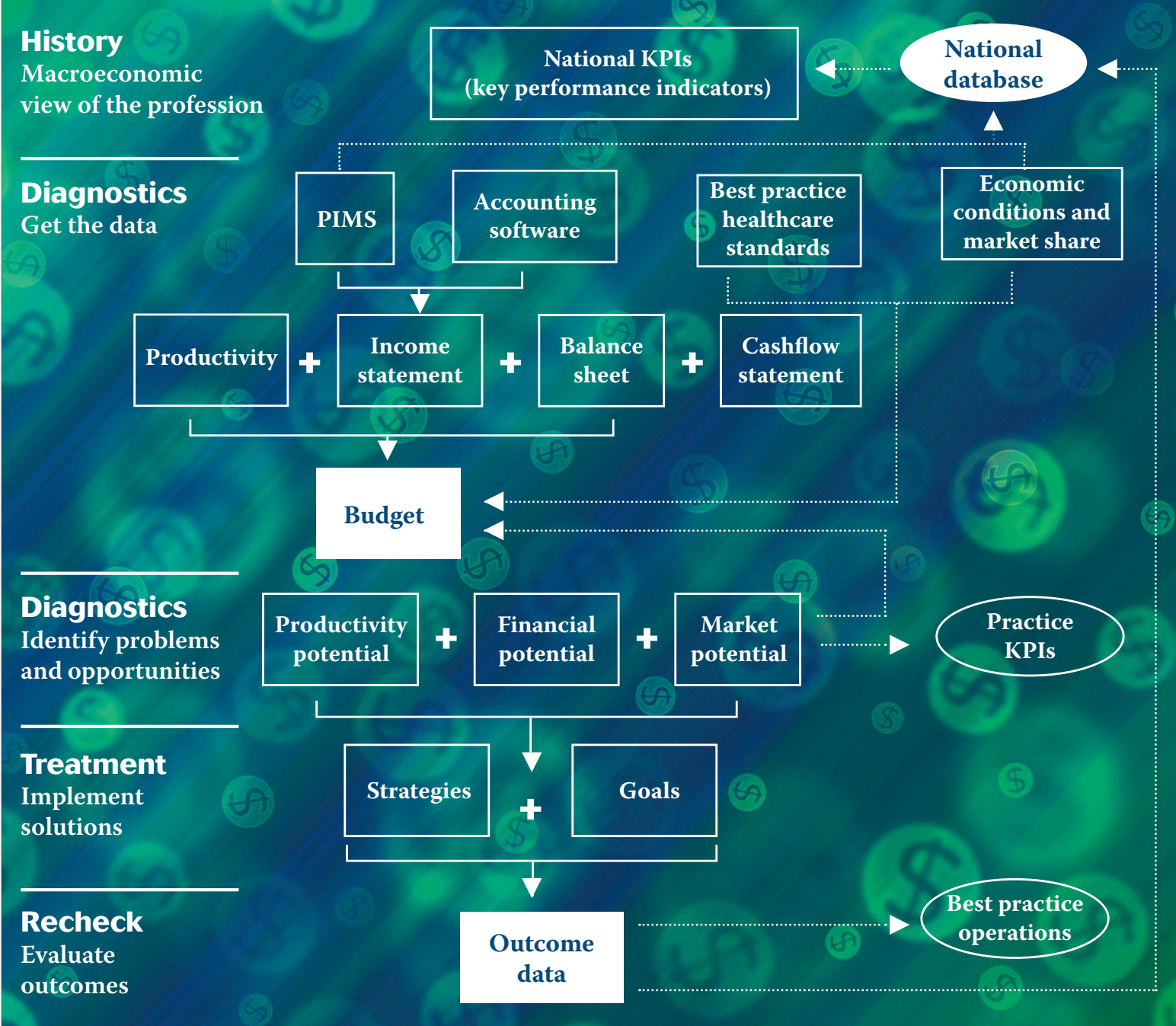
Unless veterinarians develop a financial focus, they may lose their position of influence in veterinary medicine. *By Melissa Maddux, DVM, and Michael R. Dicks, PhD*

Veterinarians are no longer the only ones influencing the values of the veterinary profession. In fact, veterinary medicine is undergoing a transformation that may impede their ability to care for patients the way they choose. Historically, veterinarians have been at the center of all decisions affecting their profession, from educating future practitioners

to developing animal-health-related public policy to determining standards of care. This wide scope of influence on the profession has had a single unified focus—animal health and welfare. More recently, in response to a growing gap between the level of healthcare veterinarians say pets need (especially preventive care) and the amount of care pets actually receive, non-

veterinarians have begun to acquire veterinary practices and focus on their financial performance, hoping to maximize the economic opportunities present in these hospitals. In order for veterinarians to sustain their influence and authority in animal healthcare, they need to adopt a financial focus as well as a healthcare focus when it comes to their profession. And the best way to develop a

TABLE 1



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TABLE 2

Problem list	Solutions
Low active clients or visits per client per year	1. Forward booking
Low average doctor transaction (ADT) > Over-referral > Discounting	1. On-boarding or CE/DVM training programs 2. Examine discounting policy
Low new clients or market share	1. Refer-a-friend programs 2. Outreach efforts
Poor wellness compliance	1. Define wellness program—standard of care, visits required, accountability 2. Client educational tools
Service gap	1. Establish standards of care

financial focus is to embrace evidence-based practice management.

Evidence-based practice management

Evidence-based practice management approaches the financial health of a practice the same way evidence-based medicine approaches patient care. It all starts with good-quality information—AKA data. A practice has four primary sources of information, and these sources must be set up appropriately to maximize the quality of data received:

- 1. Practice management information system (PIMS). This system collects and reports data on production, revenue and inventory. It should be set up to complement the accounting software chart of accounts.
- 2. Accounting software. This system reports revenue, expenses, assets and liabilities in the form of financial statements (income statement, balance sheet, cash flow statement). A standardized chart of accounts can be downloaded from the American Animal Hospital Association (AAHA) website to properly set up accounting software.
- 3. Best-practice standards for pet wellness. A hospital's best practices for wellness care should be clearly defined. These standards should include the number of annual visits required to perform all necessary wellness services, when those services should be performed, the cost of those services and who should deliver those services.
- 4. Economic conditions and

market share information. This data allows a practice to prepare for economic threats and seize market opportunities.

History: Take a macroeconomic view of the profession

A thorough history can provide critical information for making a diagnosis—information that can't be obtained through diagnostics alone. With evidence-based practice management, the "history" involves understanding the macroeconomics of the profession and examining key performance indicators (KPIs). This information can be found in veterinary market reports available on the American Veterinary Medical Association (AVMA) website that report on five financial KPIs to provide a national reference point for practices:

- 1. Total revenue
- 2. Total number of invoices
- 3. Cost of goods sold (COGS)
- 4. Cost of non-DVM labor
- 5. Cost of DVM labor.

See Table 1 for a visual map of how this process looks in practice.

Diagnostics: Get the data

Once you have your history, the next step is to run diagnostics on your practice. This means obtaining data from your PIMS and accounting software to create financial statements and obtain the five financial KPIs discussed above as well as five additional productivity KPIs:

- 1. Average doctor revenue
- 2. Average doctor transaction
- 3. Total active clients
- 4. Total new clients
- 5. Visits per client per year.

These numbers will represent an initial picture of your practice health as it pertains to current financial performance, productivity, wellness care guidelines, compliance with those wellness guidelines, and client culture.

The next step is to create an annual budget for your practice. This starts with last year's income statement. Adjust the revenue and expense portions of the budget based on projected changes to wellness best practices, economic conditions (growth or recession) and potential market share growth.

Diagnosis: Identify problems and opportunities

Analyze your financial statements and KPIs to diagnose problems affecting the financial health of your practice. You may also discover opportunities related to productivity, financial performance and market share.

Treatment: Implement solutions

Develop strategies for implementing solutions (see Table 2 for examples) and link the potential outcomes to your budget. Make sure each solution is measurable and designate a person to be accountable for implementation.

Recheck: Evaluate outcomes

As with any treatment, a recheck is essential for assessing the effectiveness of practice performance solutions. Determine whether each solution has reached its marker of success and decide if the treatment plan needs to be modified or discontinued.

Combining a focus on financial performance with a focus on appropriate healthcare will improve a practice's economic health. And a healthy practice perpetuates a healthy profession by keeping veterinarians at the center of animal health and welfare. [dvm360](#)



Dr. Melissa Maddux is a research fellow in the AVMA's Veterinary Economics Division. Dr. Michael Dicks is director of the Veterinary Economics Division.

10 *veterinary* dental products you can recommend with a smile

Veterinary dentist Dr. Jan Bellows compiled this list of food, treats and more that are proven effective in maintaining the health of pets' teeth.



The VOHC seal of acceptance.

First and foremost, if you see the Veterinary Oral Health Council (VOHC) seal of acceptance on a product's label, you can feel confident in recommending that product to your clients for dental home care. Jan Bellows, DVM, DABVP, FAVD, says that only 32 dog and 12 cat products have been approved by the VOHC. What does approval signify? "VOHC awards its VOHC Accepted Seal only to products that decrease accumulation of plaque and/or calculus by at least 20% through a data review system," says Dr. Bellows.

1 Tooth brushing

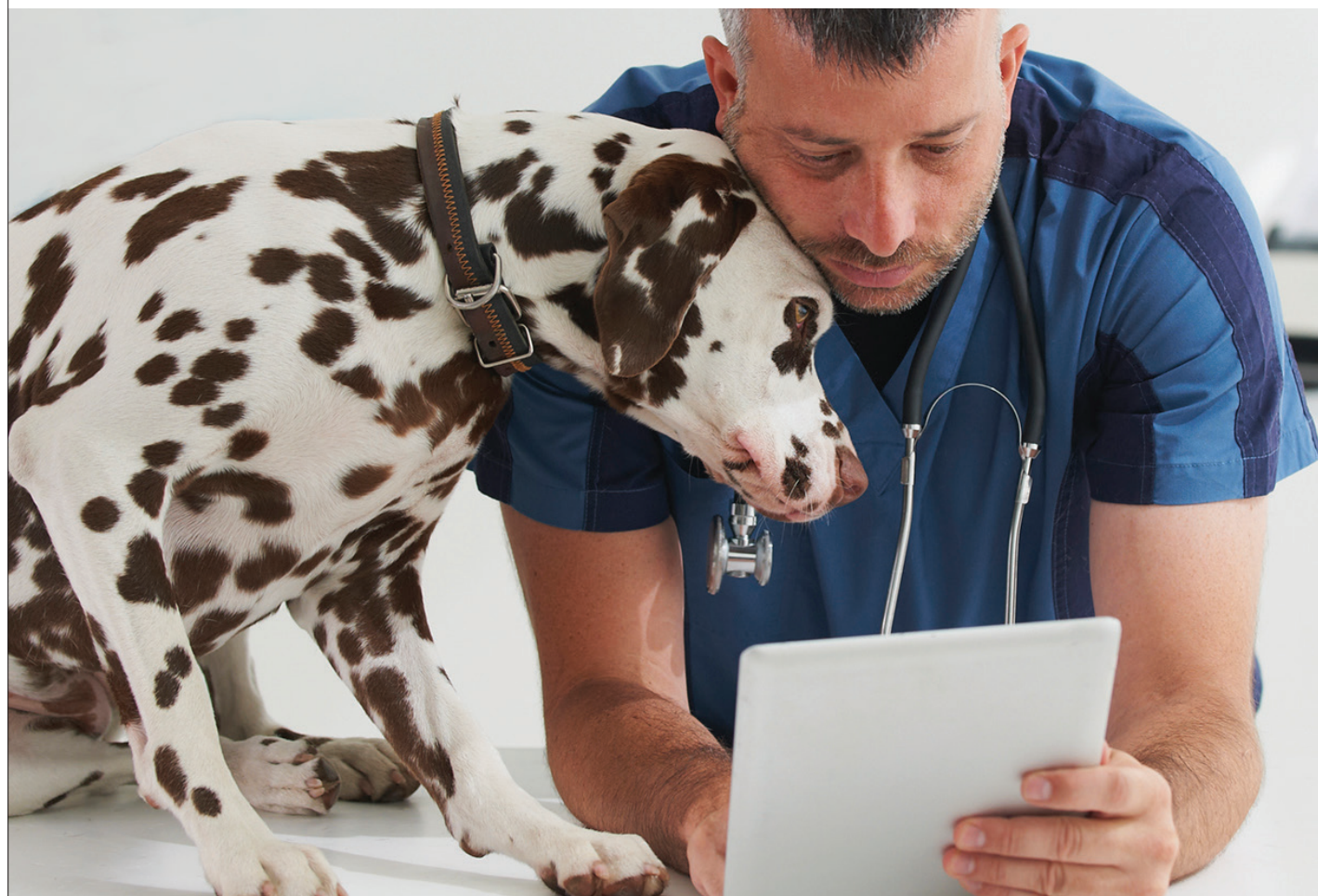
Daily brushing of a pet's teeth is the gold standard of veterinary dental home care, says Dr. Bellows.

PetSmile Toothpaste (Supersmile) with calcium peroxide (Calprox) is the only VOHC-accepted toothpaste.



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2 Dental care diets

You just have to feed a dry diet to keep plaque and calculus off teeth, right? There’s more to it than that. These specially formulated foods “work through combining increased fiber content with a size, palatability and pattern (texture) that promotes chewing and maximizes contact with the canines and cheek teeth,” says Bellows.



Prescription Diet t/d Dental Health (Hill's Pet Nutrition) comes in two sizes—large bites ...



... and small bites.

3 Waxy polymer application



OraVet (Merial) home care application.

The polymer in this product adheres to a pet’s teeth and “significantly decreases plaque and calculus formation by creating an invisible barrier that decreases bacterial attachment,” says Bellows.

4 Dental sealant application

Bellows says the polymers in this product “form a film in the gingival sulcus, hindering plaque attachment to the gingival margin and sulcus.”



SANOS dental sealant (Alleccem).

5 Water additives



Vetradent Biotrate (Dechra) water additive for dogs and cats.

You’ve heard the phrase “Just add water,” but for these products you just add to water to reduce the accumulation of plaque, tartar or both.

6 Soluble zinc salt gel

These gels act as antibacterial agents, decreasing plaque formation and that notorious bad breath.

Maxi/Guard Oral Cleansing Gel (Addison Biological Laboratory).



7 Soluble dental chews



C.E.T. VeggieDent chew (Virbac).

These treats remove plaque or tartar mechanically—rubbing and scrubbing it away.

8 Dental chews with delmopinol

Delmopinol, an anti-plaque agent, lowers the cohesion and attachment of plaque to teeth.



OraVet Dental Hygiene Chew (Merial).

9 Chlorhexidine additive in rawhide chew

A little of this disinfectant in a dental chew goes a long way toward improved dental health.



C.E.T. HEXtra dog chews (Virbac).

10 Dental wipes



DentAcetic Dental Wipes (Dechra) with sodium hexametaphosphate.

These medicated wipes not only remove plaque sitting on the teeth but also contain plaque control agents to help prevent buildup. [dvm360](#)



MAXI/GUARD Oral Cleansing Wipes (Addison Biological Laboratory) with zinc.

Elsewhere in [dvm360](#)
Find a guide to veterinary dental homecare in the medicine section on **page M2.**

MEDICINE | Urology

Feline ureteral obstruction: Stent to save the kidneys?

Placing a ureteral stent in cats with benign ureteral obstruction may preserve renal function.

By Jennifer L. Garcia, DVM, DACVIM

Why they did it

Historically, surgical intervention (ureterotomy) has often been required to definitively treat cats with ureteral obstruction in order to correct metabolic disturbances and restore renal function. Given the variable success rate and technical difficulty of this surgery, there is increasing interest in the use of interventional procedures such as ureteral stenting. In this study, the authors evaluated the perioperative outcomes of cats with benign ureteral obstruction treated with ureteral stenting compared with the outcomes of those treated with ureterotomy alone.

What they did

The study authors prospectively enrolled 26 cats (mean age 9.5 years) undergoing antegrade ureteral stenting at a large university veterinary teaching hospital between 2010 and 2014. For comparison, a historical cohort of 36 cats (mean age 8.6 years) that underwent ureterotomy at the same hospital between 2003 and 2009 was evaluated. All cats were confirmed to have ureteral obstruction based on ultrasonographic evidence of hydronephrosis and hydroureter.

Among cats in the stent group, 92% (24/26) had an elevated creatinine concentration and 85% (22/26) had an elevated blood urea nitrogen (BUN) concentration at the time of initial evaluation. Among cats in the ureterotomy group, an elevated creatinine concentration was noted in 77% (27/35) of cats, while an elevated BUN concentration was found in 91% (32/35) of cats.

Seven of the cats in the stent group had bilateral stent placement for a total of 33 stents. Of note, a ureterotomy was performed in five of the 26 cats in the stent group to facilitate passage of the guidewire. Three cats in the ureterotomy group underwent bilateral ureterotomy.

What they found

The authors found that cats in the stent group experienced a significantly greater decrease in azotemia in the 24 hours after surgery compared with cats that were treated with ureterotomy.

Postoperative complications were similar between the two groups and included postobstructive diuresis, anemia and abdominal effusion. In the stent group, six cats (23%) developed abdominal effusion (five of the six were uroabdomen), compared with 12 cats (33%; 11 of the 12 were uroabdomen) in the ureterotomy group. Cats in the stent group were more likely to develop abdominal effusion when a ureterotomy was also performed ($P = 0.005$); however, the authors noted that there was no difference between the two groups with respect to the proportion of cats that survived to discharge ($P = 0.171$).

The authors found that overall, cats that developed abdominal effusion were less likely to survive to discharge ($P = 0.003$), while cats with resolution of their azotemia during hospitalization were more likely to survive to discharge ($P = 0.003$). The authors also found that cats in the stenting group were more likely to have complete resolution of their azotemia prior to discharge ($P = 0.015$).

The authors acknowledge limitations in the study such as the inherent problems in retrospective study design (e.g. inconsistent recording of data), as well as the fact that each group of cats was treated during different years and advances in available diagnostics or procedures may have affected patient outcomes. They also note that all cats undergoing stenting were treated by a single surgeon, whereas cats in the ureterotomy group were treated by various surgeons, which may have also affected outcomes. Finally, a postoperative abdominal ultrasonographic



examination was not performed in all cats, which may have resulted in an underdiagnosis of abdominal effusion.

Take-home message

My take-home interpretation of this study is that in cats with nonneoplastic ureteral obstruction, stent placement may result in faster resolution of azotemia compared with cats that undergo ureterotomy, which may improve survival to discharge. It is important to note, however, that the likelihood of developing uroabdomen was similar between the two groups ($P = 0.515$). Inconsistencies in study design may limit the generalizability of these findings, and further studies investigating ureteral stenting, as well as other interventional procedures such as placement of subcutaneous ureteral bypass devices, is warranted to determine the optimal treatment plan for cats with ureteral obstruction. [dvm360](#)

Culp WTN, Palm CA, Hsueh C, et al. Outcome in cats with benign ureteral obstructions treated by means of ureteral stenting versus ureterotomy. *J Am Vet Med Assoc* 2016;249(11):1292-1300.

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A guide to veterinary dental home care

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A guide to veterinary dental home care

Feel confident in your recommendations for dental products that your veterinary clients can use at home. *By Jan Bellows, DVM, DAVDC, DABVP, FAVD*

Several years ago, over 1,000 combined dog and cat owners participated in an online survey conducted by Trone Brand Energy regarding consumer awareness and behaviors toward pet oral care.¹ Only 20 percent of the dog and cat caregivers who owned pets more than 3 years of age felt their pets had any dental disease. Compare this to a study recently conducted by Banfield that revealed that approximately 93 percent of dogs and 88 percent of cats older than 3 years of age had some form of periodontal disease.²

The Trone study further reported that over 70 percent of dog owners took steps to provide dental healthcare for their pets the previous year.¹ Of those that provided dental healthcare, 70 percent purchased treats, 30 percent fed their dogs dental diets, 30 percent reported they brushed their dogs' teeth, and, for dental attention, 25 percent saw their veterinarian and

10 percent their groomer. Cat owners scored about half of what dog owners did—35 percent for treats, 15 percent for diets, etc.—in the categories above.

How can we better educate our clients on the true degree of dental disease present and how to best control plaque and tartar (calculus)? What we recommend has to be safe, effective in decreasing the progression of plaque and calculus, and easy to administer. Dog and cat owners face hundreds of choices when choosing products, which work either by chemical (non-mechanical), mechanical or combined methodology. Unfortunately, unless there is a medical claim ("prevents gingivitis," "cures periodontal disease") regulated by the U.S. Food and Drug Administration, there is little to no oversight of statements regarding dental value.

Here is my guide to proven-effective products you can recommend to your veterinary clients—and some thoughts on what they should avoid.

Efficacy through mechanical action

Tooth brushing. Plaque and tartar accumulate very rapidly on scaled and polished clean teeth when pet owners don't practice follow-up oral hygiene. The gold standard to prevent the accumulation of plaque and tartar is daily tooth brushing (Figure 1).

Unfortunately, very few pet owners

brush their pets' teeth enough to have a positive effect—less than 5 percent. In a study in beagles, a specific brushing protocol applied by trained technicians with a specific type of toothbrush resulted in a statistically significant reduction in mean mouth plaque and calculus scores when the dogs' teeth were brushed daily or every other day.³ Brushing less frequently was less effective, with no significant difference recorded for weekly or every-other-week brushing compared with the control group.

Diet. Hard food alone does not prevent plaque or calculus accumulation. Several complete and balanced adult pet foods are available. For example, Prescription Diet t/d (Hill's Pet Nutrition) has a kibble that is designed with a transverse, fibrous striated matrix structure. When chewed, the product fractures along the transverse striations and the animal's tooth is retained in the kibble, increasing the abrasive contact with the fractured layers. The teeth are abraded and mechanically cleaned by the surfaces of the fractured layers as the product is chewed. Unfortunately, those areas that the mechanical diets do not touch are not benefited.

Soluble dental chews. Some dental chews remove plaque or tartar mechanically (e.g. C.E.T. VeggieDent chew—Virbac). Again, those areas that the chews do not physically touch



>>> **Figure 1.** A dog getting its teeth brushed.

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>>> **Figure 2.** A cotton-tipped applicator applied to a cat's marginal gingiva.



>>> **Figure 3.** OraVet home care application.



>>> **Figure 4.** Application of SANOS dental sealant.

do not receive any benefit.

Cotton-tipped applicators. Cotton-tipped applicators can be used to partially wipe away the daily accumulation of plaque surrounding the buccal and labial marginal gingiva. Cats are more receptive when the applicator is dipped in tuna water (Figure 2).

Efficacy through nonmechanical action

Nonmechanical forms of plaque control include chemicals and natural ingredients to decrease the formation of plaque, the adhesion of plaque on the tooth surface and the formation of calculus through crystal growth inhibition, preventing mineralization of plaque and the transition of plaque into calculus.

Waxy polymers. When applied to professionally cleaned teeth, a wax polymer adheres to the tooth by electrostatic attraction (e.g. OraVet—Merial; Figure 3). In doing so, it

inhibits bacterial adhesion to the tooth, which significantly decreases plaque and calculus formation by creating an invisible barrier that decreases bacterial attachment. While other products may remove plaque and tartar, waxy polymers constitute a plaque retention prevention system that is completely safe, tasteless and drug-free.

Dental sealant. Hydrophilic polymers form a film in the gingival sulcus, hindering plaque attachment to the gingival margin and sulcus (e.g. SANOS dental sealant—AllAccem; Figure 4). The positive effect is prolonged without the need for human attention. The mechanism of action relies on the dental sealant polymer film attaching to the surface at molecular level binding sites.

Water additives. Developed to be added to a dog or cat's water source, these products can result in a significant reduction in the accumulation of plaque, tartar or both. In tests, a water additive (Vetradent—Dechra)

resulted in a significant decrease in the accumulation of tartar compared to controls through the actions of zinc chloride, sodium citrate and citric acid.⁴ The citric acid stabilizes the zinc chloride, significantly inhibiting the release of volatile sulfur compounds and decreasing oral malodor. Additionally, sodium citrate works as both an antibiofilm and antimicrobial agent, chelating the minerals needed for biofilm formation and bacterial growth. Sodium citrate binds to calcium, keeping the calcium in a soluble form (as calcium citrate), making it unavailable to form tartar.

Chlorhexidine. Chlorhexidine gluconate is one of the leading products used to decrease the accumulation of plaque in people. In the oral cavity, it binds to a tooth's pellicle and is released over a prolonged period to provide sustained antimicrobial activity.

Chlorhexidine gluconate has a positive chemical charge, which is attracted

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The Veterinary Oral Health Council: Proof in the pudding

Any of the thousands of dental home care products can make claims to decrease the accumulation of plaque or calculus. Only 32 dog and 12 cat products have achieved Veterinary Oral Health Council (VOHC) acceptance. Volunteer members of the independent VOHC are board-certified veterinary dentists and other experts in veterinary dentistry who help veterinarians and the public make wise home care decisions. VOHC awards its VOHC Accepted Seal only to products that decrease accumulation of plaque and/or calculus by at least 20 percent through a data review system.

The protocols for application are available at www.vohc.org. The VOHC does not perform the dental trials itself; rather, the manufacturer must perform scientific trials based on the VOHC standard protocols. They then submit their reports and results to the VOHC for the data to be reviewed. If the council is satisfied that the protocols were followed and that the results indicate a significant beneficial effect (at least 20 percent average plaque or calculus reduction compared with controls on two blinded studies), the product is granted the Seal of Acceptance.

There are two designations available. A product may be accepted as helping to control tartar or as helping to control plaque. Products may receive a dual designation if there is credible evidence that they do both. Visit dvm360.com/VOHC for a table of VOHC-approved treat products.

Using a VOHC-accepted product should not imply that the dog or cat will not develop periodontal disease. Prevention and control of periodontal disease in susceptible animals require a multimodal approach, including diet, chew treats, home care and professional care.

to the negative charge on certain bacteria in the mouth. This attraction affects the bacterial cell membrane and causes increased permeability for immediate antimicrobial activity. Chlorhexidine gluconate is also attracted to negatively charged surfaces on oral tissue. This additional attraction results in a sustained action that can help prevent the formation of plaque. In people, chlorhexidine is positioned as an oral rinse to be swished for 30 seconds then expectorated twice daily. This is not feasible with companion animals. For this reason, chlorhexidine is commonly incorporated with a carrier vehicle (rawhide chew, dental wipe).

Soluble zinc salts. Zinc ascorbate, gluconate, oxide and chloride are incorporated in toothpastes, rinses and gels as antibacterial agents to help decrease plaque formation and malodor. After delivery into the oral cavity, 15 to 40 percent zinc is retained in the mouth. In one study, zinc ascorbate gel (Maxi/Guard Oral Cleansing Gel—Addison Biologic Laboratory) used as an oral antiseptic improved feline gingival health through decreased bacterial growth, plaque formation and gingivitis.⁵

Essential oils. Essential oils including thymol, eugenol, methanol, clove and eucalyptol have demonstrated efficacy in reducing plaque and gingival inflammation in human patients.

Efficacy through mechanical plus nonmechanical actions

Addition of delmopinol. Delmopinol is a surface-active anti-plaque surfactant agent (e.g. OraVet Dental Hygiene Chew—Merial). Studies have shown that it is capable of reducing and delaying dental plaque formation as well as reversing gingivitis.⁶⁻¹⁰ The clinical efficacy of delmopinol is due to a reduction of surface-associated glucan synthesis that lowers the cohesion and attachment of dental plaque.

Addition of polyphosphates (sodium hexametaphosphate, sodium tripolyphosphate). These sequestrants bind salivary calcium, making it unavailable for incorporation into the plaque biofilm to form tartar and decreasing the buildup of rough tartar to help prevent additional plaque.

Addition of chlorhexidine. This ingredient in a rawhide chew (C.E.T. HEXtra dog chews—Virbac) showed



>>> **Figure 5.** Applying a dental wipe.



>>> **Figure 6.** A maxillary fourth premolar slab fracture after chewing on a deer antler.

increased efficacy against plaque, tartar and gingivitis compared to a rawhide chew without chlorhexidine.¹¹

Addition of polyphosphates to dental diet. This helps by combining mechanical and chemical effects. (e.g. Prescription Diet Dental Care Chew—Hill's Pet Nutrition).

Toothpastes with calcium peroxide (Calprox) dissolve the pellicle layer to decrease the accumulation of plaque. PetSmile toothpaste (Supersmile) is the only dentifrice accepted by the Veterinary Oral Health Council (VOHC).

Dental wipes. These are a favorite dental home care product chosen by veterinarians to use on their own dogs (e.g. DentAcetic Dental Wipes with sodium hexametaphosphate—Dechra [Figure 5]; MAXI/GUARD Oral Cleansing Wipes with zinc—Addison Biological Laboratory). Infused wipes mechanically remove

plaque plus apply plaque control agents to the teeth and gingiva.

Safety of home care products

Safety concerns include choking, secondary chemical or mechanical gastrointestinal inflammation, and obstruction. Clients may take for granted that the plaque control products they buy in our offices, in stores or online are safe.

Choking. According to Injury Facts 2017, choking is the fourth leading cause of human unintentional injury death; 5,051 people died from choking in 2017.¹² What causes a person or animal to choke? Generally eating too much too fast. This can become a serious issue in dogs that go into a gulping frenzy when given an appealing treat or chew.

Treats, kibble, soluble dental chews and rawhide chews have been implicated in choking injuries and deaths

in dogs. It is essential that our clients be instructed to offer only the weight-appropriate product and to observe their pets during chewing. Chews and rawhide products should not be fed to dogs that gulp, not only because of the choking risk but also because if the chew barely stays in the mouth, its positive dental effect is lost.

In order to reduce the risk of choking, pet caregivers should adhere to these safety tips:

- > All pets should be observed when chewing on a treat.
- > Those dogs that gulp rather than chew should not be fed rawhide chews or large treats.
- > Pet caregivers should be instructed on how to remove lodged treats from their pets' mouths or throats.
- > Pet caregivers should carefully read warning labels on chews and dental devices before giving them to their dogs or cats.

Gastrointestinal inflammation.

Those products that claim control of plaque through chemical means must also be safe for the dog or cat to ingest. Excessive protein, preservatives and ingredients such as grain alcohol and xylitol may cause injury to a dog or cat.

Safety against tooth fracture.

Chews that are rigid can lead to fractures of the carnassial teeth. Deer antlers, bones, nylon products, dried yak milk, pizzle sticks and hard plastic toys claim mechanical plaque and calculus advantages, but unfortunately they are so hard that chewing can result in tooth fracture with pulp exposure. Clients should be cautioned against feeding bones, nylon toys or any product that does not easily bend, compress or dissolve when placed in a fluid environment. This is especially important for dogs that hold the treats with their paws while chewing on the side teeth (Figure 6). **dvm360**

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Oh yes, it's the great pretender

According to CVC speaker and expert Dr. Chen Gilor, veterinarians should be screening more patients for hypoadrenocorticism or risk missing a diagnosis.

By Sarah J. Wooten, DVM



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

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

Indication:
ITRAFUNGOL oral solution is indicated for the treatment of dermatophytosis caused by *Microsporum canis* in cats.

Dosage and Administration:
The solution should be administered orally using the enclosed graduated dosing syringe.

The daily dosage is 5 mg/kg (0.5 mL/kg) body weight administered once daily on alternating weeks for 3 treatment cycles. Cats are treated during weeks 1, 3, and 5, and left untreated during weeks 2 and 4.

See product insert for complete dosing and administration information.

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Warnings:
ITRAFUNGOL (itraconazole oral solution) has not been shown to be safe in pregnant cats (see Animal Safety section). ITRAFUNGOL should only be used in pregnant or lactating cats when the benefits outweigh the potential risks.

User Safety Warnings:
Not for use in humans. Keep this and all medications out of reach of children. Wash hands and exposed skin after use. In case of accidental contact with eyes, rinse thoroughly with water. In case of pain or irritation, seek medical advice. In case of accidental ingestion, rinse mouth with water and seek medical advice.

Special precautions for person administering the veterinary product to the animal:

Microsporum canis dermatophytosis is a zoonotic disease (a disease that can be transmitted from animals to humans); therefore consult a physician if a suspected lesion occurs on a human. Wear protective gloves when handling the animal during treatment or when cleaning the syringe. Wash hands and exposed skin after handling the animal.

ITRAFUNGOL has not been shown to be sporidical; therefore in order to reduce zoonotic potential, environmental contamination, and to decrease course of the disease, topical and environmental treatment should also be utilized.

Precautions:
ITRAFUNGOL has been associated with renal changes found on histopathology that were not noted after an eight week recovery period. Use with caution in cats with renal dysfunction.

ITRAFUNGOL is metabolized by the liver (mainly CYP3A) and can cause elevated liver enzymes. Use with caution in cats with impaired liver function. If clinical signs suggestive of liver dysfunction develop, treatment should be discontinued.

ITRAFUNGOL is a cytochrome p-450 inhibitor and may increase or prolong plasma concentrations of other drugs metabolized by this pathway, such as amitriptyline, amlodipine, benzodiazepines, buspirone, cisapride, corticosteroids, cyclosporine, ivermectin, and macrolide antibiotics.

Negative inotropic effects have been reported in literature when itraconazole was administered intravenously to dogs and healthy human volunteers. Cats suffering from heart disease should be carefully monitored during treatment.

Adverse Reactions:
In the laboratory effectiveness study, adverse reactions related to exposure to ITRAFUNGOL were primarily related to the gastrointestinal tract. Two ITRAFUNGOL-treated cats experienced transient hypersalivation during the dosing period. Vomiting was observed in 5 ITRAFUNGOL-treated cats (12.5%) during the dosing period compared to four cats (10%) in the control group. Diarrhea was observed in 9 ITRAFUNGOL-treated cats (22.5%) during the dosing period as compared to 7 cats (17.5%) in the control group. One ITRAFUNGOL-treated cat showed mild increases in

alanine aminotransferase (ALT) and aspartate aminotransferase (AST) at the end of the dosing period. No related clinical signs were observed, and these values returned to normal by the end of the follow-up period. One cat in the ITRAFUNGOL-treated group was noted to have lip erythema and lip induration once during the study.

Field safety was evaluated in 266 cats randomized to receive itraconazole oral solution. Of the 266 cats that received at least one dose of itraconazole oral solution, adverse reactions included 35 cases (13%) of one or more elevated hepatic enzymes and 8 cases (3%) of gastrointestinal upset, including decreased appetite, vomiting and/or diarrhea. Other infrequent adverse reactions included less than 3 cases each of somnolence, depression, and increased salivation.

For technical assistance or to report suspected adverse drug events, contact Elanco Animal Health at 1-888-545-5973.

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

Effectiveness:
Laboratory Study
Effectiveness was demonstrated using ITRAFUNGOL (itraconazole oral solution) in a masked, placebo controlled laboratory study. Eighty cats were experimentally infected with *Microsporum canis* and treated with either ITRAFUNGOL or sterile water (control product) for the proposed therapeutic treatment schedule followed by a 4-week follow-up period. No topical therapy was used during this study. A statistical difference (P =0.0003) in mycological cure rate (defined as two consecutive negative mycological cultures) was demonstrated between cats treated with ITRAFUNGOL (24/40 or 60%) versus control (1/40 or 2.5%). Ninety percent of ITRAFUNGOL-treated cats (36/40) achieved at least one negative culture by the end of the study. Improvement was seen in inoculation site erythema and skin thickening by Day 7 and in crusts and scales by Day 14. By the end of the study, 98% of ITRAFUNGOL-treated cats had complete resolution of all clinical lesions, compared to 15% in the control group. Wood's lamp cure (defined as no fluorescence at the base and mid-shaft of the hair) in the ITRAFUNGOL-treated group (39/40 or 97.5%) was higher compared to the control group (6/40 or 15%). Itraconazole MICs indicative of susceptibility were obtained in *M. canis* isolates from the two cats unsuccessfully treated with ITRAFUNGOL.

Field Study
A masked, positive-controlled, multi-site field study was conducted in client-owned cats in Europe. In this study, 514 cats diagnosed with dermatophytosis were randomly administered itraconazole oral solution or an active control. Cats received a daily dose of either itraconazole oral solution for three alternating weeks plus a placebo tablet once daily for 5 consecutive weeks, or a placebo solution for three alternating weeks plus the active control once daily for five weeks. Success was evaluated on clinical cure, which was noted with a complete resolution of all clinical lesions. Four weeks after the end of treatment, 175 (83%) out of 207 cats treated with itraconazole oral solution were clinically cured.

Animal Safety:
Reproductive Safety
In a study of 16 pregnant queens administered itraconazole oral solution at 5 mg/kg bodyweight for a total of 21 days (7 days on alternate weeks) during gestation or lactation, there was a high frequency of fetal resorption (partial and total), abnormal fetuses, and abnormal maternal behaviors. Confounding factors, such as infectious disease (*Chlamydia psittaci*) in some cats made it difficult to establish a definitive relationship between administration of itraconazole and the abnormal findings. However, the results of this study reveal potential reproductive safety risks and do not support the safe use of ITRAFUNGOL in pregnant queens.

Storage conditions:
Store at 68-77°F (20-25°C). Excursions permitted between 59-86°F (15-30°C).

How supplied:
ITRAFUNGOL (itraconazole oral solution) is available in a glass bottle containing 52 mL of oral solution, closed with a child resistant screw cap and packaged in a cardboard box that includes a package insert and a graduated dosing syringe.

NADA 141-474, Approved by FDA.

Manufactured for Elanco US Inc.
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Version Date: September 2016

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Think you can rule out Addison's disease if the sodium:potassium ratio is normal, if the adrenals measure normal ultrasonographically or if there is a stress leukogram? Think again. Chen Gilor, DVM, PhD, DACVIM, says the game on diagnosing hypoadrenocorticism has changed, and veterinarians should be screening more patients for the disease or risk missing a diagnosis.

It's as simple as salt, sugar and sex

The adrenal gland has three zones that secrete different hormones. Gilor shares an easy mnemonic for this: salt, sugar and sex. The zona glomerulosa secretes aldosterone, which regulates salt. The zona fasciculata secretes cortisol—important in sugar regulation. The zona reticularis secretes androgens that convert to sex hormones.

In hypoadrenocorticism, the clinical presentation depends on which zone is affected, and sometimes multiple zones are affected. Classically, hypoadrenocorticism has an emergency presentation that consists of hypovolemia, hyperkalemia, azotemia and metabolic acidosis due to aldosterone deficiency. Animals with complete aldosterone deficiency can only survive one or two days, Gilor says, and so these animals present acutely ill. Animals with atypical hypoadrenocorticism have absolute cortisol deficiency (but not aldosterone deficiency) and present very differently than animals with classical hypoadrenocorticism (in which both aldosterone and cortisol are deficient). For one, these animals have been sick awhile, Gilor says. It can take a long time to develop clinical signs associated with cortisol deficiency, and many body systems can be affected—one of the reasons why hypoadrenocorticism has earned the nickname “the great pretender.”

Clinical signs can include nonspecific gastrointestinal (GI) signs such as weight loss, decreased appetite,

vomiting and diarrhea. Less common signs include megaesophagus and ascites due to low serum protein concentrations. These animals are chronically ADR (i.e. ain't doing right) and can be mistakenly diagnosed with inflammatory bowel disease (IBD) or a protein-losing enteropathy.¹ Results from a minimum database can include anemia, lack of a stress leukogram, hypcholesterolemia, hypoalbuminemia or hypoglycemia. Historically, atypical hypoadrenocorticism was considered rare, but Gilor thinks that is because we often have missed it. The more you test for it, the more you will find it.

Screening tests

The ACTH stimulation test is the gold standard of confirming hypoadrenocorticism, though many practitioners are reluctant to use it in chronically ADR dogs because of cost. In any dog that is suspicious for hypoadrenocorticism, Gilor recommends performing a baseline serum cortisol concentration along with a minimum database. Hypoadrenocorticism suspects include dogs with acute renal failure, suspected liver failure without elevated bilirubin concentrations (hypcholesterolemia, hypoalbuminemia or hypoglycemia) or megaesophagus and sick dogs that have an absence of a stress leukogram and unexplained GI disease. Don't fall into the trap of IBD, Gilor says.

Baseline cortisol concentrations > 55 nmol/L (2 µg/dl) are useful in excluding hypoadrenocorticism.² A baseline serum cortisol concentration ≤ 55 nmol/L (≤ 2 µg/dl) is not diagnostic of hypoadrenocorticism, as even normal animals can have transiently low resting cortisol concentrations. But in a sick dog, Gilor advises that an ACTH stimulation test is indicated to confirm hypoadrenocorticism.

Other screening tests include abdominal ultrasonography, sodium:potassium ratio and corticosteroid-alkaline phosphatase (C-ALP) isoenzyme, which is a sensitive marker for increased cortisol. But Gilor does not think that any of these tests are useful for screening a dog for atypical hypoadrenocorticism. The sodium:potassium ratio is usually normal in these dogs. With an abdominal ultrasound, the prevailing belief has been that even though the length of the adrenal gland varied with a dog's size, the thickness (width) did not. But a 2016 study suggested that adrenal thickness varied significantly with

body weight, age and sex, and that new reference ranges are needed that correlate with each of these variables.³

According to Gilor, theory dictates that C-ALP would be abnormal in sick dogs and if normal it might suggest hypoadrenocorticism. However, Gilor says that C-ALP activity can still be elevated in some dogs with hypoadrenocorticism despite the fact that they have a cortisol deficiency and, cur-

rently, nobody knows why. **dvm360**

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Dr. Sarah Wooten graduated from UC Davis School of Veterinary Medicine in 2002. A member of the American Society of Veterinary Journalists, Dr. Wooten divides her professional time between private practice at Sheep Draw Veterinary Hospital in Greeley, Colorado, and writing articles and filming video content for various media outlets.

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Itrafungol
(itraconazole oral solution)

Putting the preventive into flea allergy dermatitis

Clients asking, “Just what am I giving my pet?” Here are some ways to allay their concerns about flea control products. *By Allison Kirby, DVM, DACVD*

An important part of treating a pet allergic to fleas is keeping the pet on year-round flea control. But you’ve likely encountered owners who have expressed concern they’ll be giving their pets an insecticide—whether orally or topically—and they say, “That can’t be safe!” To calm their fears, explain the following.

Flea preventives exploit a difference in the nervous system between insects and mammals.^{1,2} It is anatomically and physiologically impossible for these products to kill a mammal the same way they kill fleas. Adverse reactions may occur, as they can with any oral or topical product of any kind, but they’re typically not serious and the benefits far outweigh the risks.

Point out that consistent, routine administration schedules of these preventives vary and some products are formulated for longer duration of action (e.g. 12 weeks); plus, flea

prevention is a lot safer than repeated courses of corticosteroids and antibiotics to manage the clinical signs of flea allergy dermatitis. Explain that most adverse reactions in pets and people, such as drooling, vomiting, tremoring, hyperexcitability, seizures, weakness and paresthesia (a tingling sensation), involve topical products containing pyrethrins or older organophosphates and carbamates.^{3,4} Many clients do not realize that when these adverse events are documented it does not note if the product was applied in the correct manner and in the labeled species. Despite the package warnings, pyrethrins are still being applied to cats, which contributes to these adverse events.

Although many approved veterinary products are systemically absorbed and have been deemed safe and effective by the FDA, some owners still have a fear of any orally administered insecticide. Sometimes despite education there is still a hesitation and these clients may feel more comfortable with a topically applied product. Some topical products, such as imidacloprid, are not systemically absorbed and may better suit this type of owner.

While dermal hypersensitivity reactions can occur, point out that this is also true with any soap or lotion we would use on ourselves. Many dermal reactions are related to carrier ingredients rather than the active ingredient.⁴ The risk to the people in the household is minimal, and the reactions depend on the ingredients present in the medication. Thorough washing of your hands after administration of any pesticide is recommended to decrease exposure to the product and topical irritancy.

If the allergic effects aren’t enough to convince owners of flea-allergic pets to routinely provide flea control, inform clients of the diseases that can



>>> Figure 2: Notice the adult tapeworm (*Dipylidium caninum*) in the cat’s mouth!

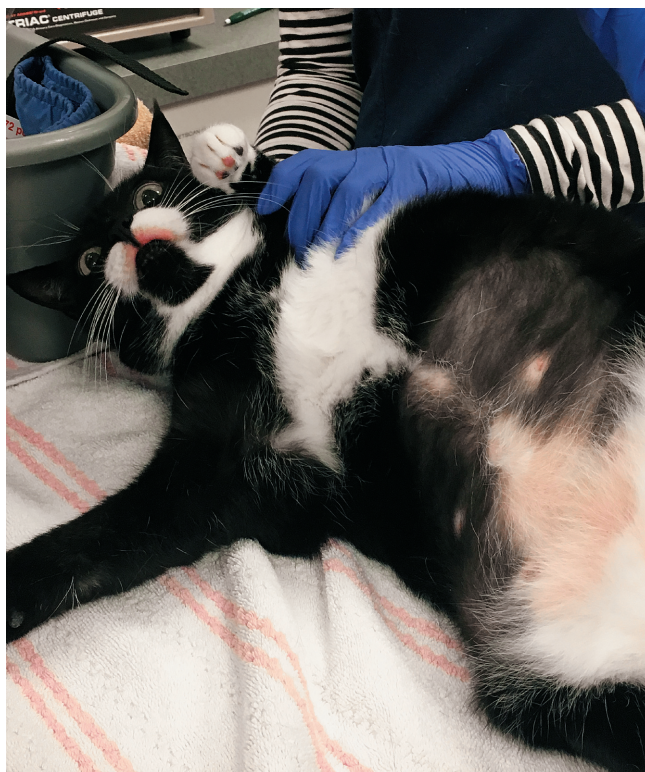
be caused and transmitted by fleas.^{5,6} These include iron deficiency anemia and infection with *Rickettsia typhi*, *Rickettsia felis*, *Bartonella henselae*, *Mycoplasma haemofelis*, *Yersinia pestis* (that’s the plague!) and *Dipylidium caninum*.

Educate owners that these diseases are worse than flea infestation and may require treatment that is less safe than prescription flea preventives. Use of the broader term “parasites” can sometimes invoke greater willingness of the owner. **dvm360**

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Dr. Allison Kirby is a veterinary dermatologist at Animal Dermatology Clinic in Marina del Rey, Long Beach and Torrance, California.



>>> Figure 1: The dermatologic effects of flea allergy dermatitis are evident in this cat, but let’s look a little closer in Figure 2...

EQUINE | Reproductive health

Dystocia in the mare: Manipulating a better outcome

When a foal's improper placement is interfering with delivery, the veterinarian's success hinges on accurate determination of the cause and swift, appropriate intervention. *By Ed Kane, PhD*

In horses, dystocia refers to any problem interfering with the normal birth of a foal, including improper placement of the foal in the birth canal requiring intervention, says Hagyard Equine Medical Institute veterinarian Michael Spirito, DVM (Figure 1, see below).

Dystocia can occur in all breeds of horses. The best chance for a successful outcome depends on a prompt assessment of the cause followed by rapid intervention. Understanding the stages of labor and parturition is fundamental to these steps. Spirito

describes these stages as follows:

Stage 1 labor. The mare shows signs of abdominal discomfort as the foal moves into the correct orientation, which consists of three parts: presentation, position and posture (Figure 2, see next page).

Presentation: Anterior longitudinal, with the foal's head presented toward the mare's vulva

Position: Dorsal sacral, describing the relationship between the foal's back and the mare's spine

Posture: Extension of the extremities, head and neck

Stage 2 labor. This stage, which shouldn't last longer than 30 minutes, begins when the chorioallantois ruptures and ends when the foal is expelled. It is also the point at which it's most important for the practitioner to decide whether to refer to a clinic or to continue attempting to reduce the dystocia.

Stage 3 labor. This stage is complete when the placenta is passed.

Initial points to ponder

When a mare presents with a dystocia, Spirito says practitioners need to first



>>> **Figure 1.** Dystocia in a mare.



PRACTICE MANAGEMENT **E6**

Making time for equine in mixed-animal practice

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FOR USE IN HORSES ONLY

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Do not use in horses intended for human consumption. NSAIDs should not be used concurrently with Tildren®. Concurrent use of NSAIDs with Tildren® may increase the risk of renal toxicity and acute renal failure.

HUMAN WARNINGS

Not for use in humans. Keep this and all drugs out of the reach of children. Consult a physician in case of accidental human exposure.

CAUTION

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

INDICATION

Tildren® is indicated for the control of clinical signs associated with navicular syndrome in horses. Navicular syndrome is the most common cause of chronic forelimb lameness in performance horses. It is a degenerative process instigated by mechanical forces.

CONTRAINDICATIONS

Do not use in horses with known hypersensitivity to tiludronate disodium or to mannitol. Do not use in horses with impaired renal function or with a history of renal disease. Bisphosphonates are excreted by the kidney; therefore, conditions causing renal impairment may increase plasma bisphosphonate concentrations resulting in an increased risk for adverse reactions.

PRECAUTIONS

Approximately 30-40% of horses administered Tildren® will demonstrate transient signs consistent with abdominal pain (colic). Horses should be observed closely for 4 hours post-infusion for the development of clinical signs consistent with colic or other adverse reactions. Colic signs can last approximately 90 minutes and may be intermittent in nature. Hand walking the horse may improve or resolve the colic signs in many cases. If a horse requires medical therapy, non-NSAID treatment should be administered due to the risk for renal toxicity. Avoid NSAID use.

Horses should be well hydrated prior to administration of Tildren® due to the potential nephrotoxic effects of Tildren®.

Tildren® should be used with caution in horses receiving concurrent administration of other drugs that may reduce serum calcium (such as tetracyclines) or whose toxicity may exacerbate a reduction in serum calcium (such as aminoglycosides).

Horses with HYPP (heterozygous or homozygous) may be at an increased risk for adverse reactions, including colic signs, hyperkalemic episodes, and death. The safe use of Tildren® has not been evaluated in horses less than 4 years of age.

Bisphosphonates should not be used in pregnant or lactating mares, or mares intended for breeding. Bisphosphonates have been shown to cause fetal developmental abnormalities in laboratory animals.

DOSAGE AND ADMINISTRATION

A single dose of Tildren® should be administered as an intravenous infusion at a dose of 1 mg/kg (0.45 mg/lb). The infusion should be administered slowly and evenly over 90 minutes to minimize the risk of adverse reactions. Maximum effect may not occur until 2 months post-treatment.

For **ADMINISTRATION INSTRUCTIONS** (preparation of the reconstituted solution (20mg/mL) and preparation of the solution for infusion) and for complete product information, please read the insert contained within the product packaging.

STORAGE

Sterile powder (not reconstituted): Store at controlled room temperature 68°F-77°F (20°C-25°C). After preparation, the infusion should be administered either within 2 hours of preparation, or it can be stored for up to 24 hours under refrigeration at 36°F-46°F (2°C-8°C) and protected from light.

HOW SUPPLIED

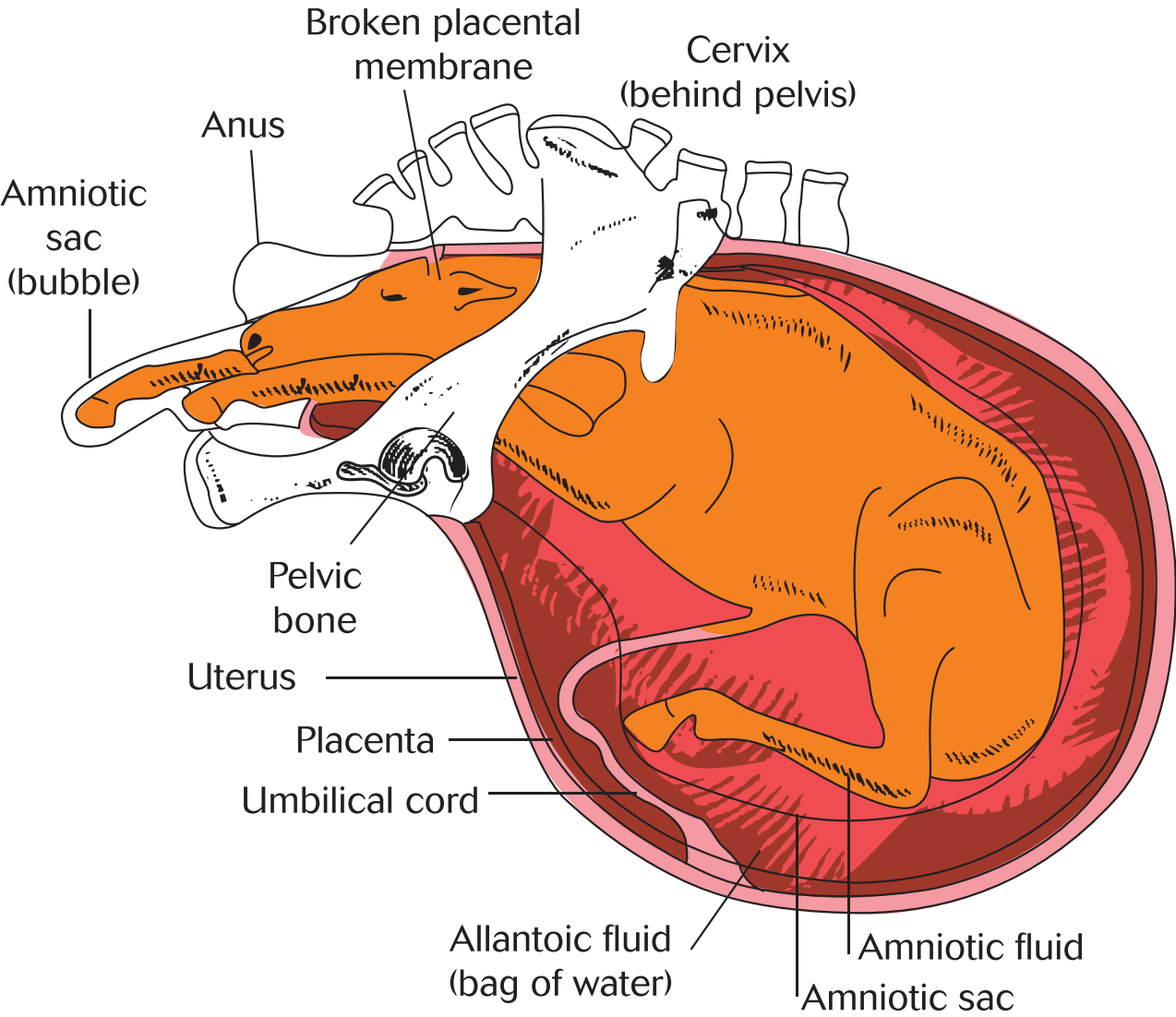
Tildren® is supplied in a 30mL glass vial as a white, sterile lyophilized powder containing 500mg tiludronic acid (as tiludronate disodium) packaged in a folding carton. For technical assistance or to report suspected adverse reactions, call 1-888-524-6332.

INFORMATION FOR OWNERS

Prior to Tildren® administration, owners should be advised of the potential for adverse reactions in the hours or days following treatment. Adverse reactions within 4 hour post dosing may include signs of colic (manifested as pawing, stretching, getting up and down, sweating, rolling, looking at flanks, kicking at belly, frequent gas, and pacing). Owners should be instructed to contact their veterinarian immediately if any adverse reactions are observed. Owners should be advised to consult with their veterinarian prior to the administration of an NSAID following Tildren® administration.

Made in Canada

Patent information: U.S. patent 6,057,360



>>> **Figure 2.** A foal with correct presentation, position and posture during stage 1 labor.

ask the following questions:

- > Will the mare allow me to freely palpate her?
- > What is the foal's viability?
- > What are my obstetrical skills?
- > Do I have the equipment and facilities I need to help the mare?
- > What are the client's financial constraints?

Once the practitioner feels comfortable moving forward, he or she needs to ascertain:

- > The mare's history
- > Whether this is the mare's first or second foal
- > The foaling date
- > How long the mare has been trying to foal
- > When the mare's water broke
- > Whether the mare is experiencing discomfort.

“Once these items are determined, I sedate the mare and clean her vulva and adjacent areas with water and betadine,” says Spirito. “I then wrap her tail up to keep it out of the way and to

lessen the risk of contamination. With an assistant at her head and another at her tail, I then don a sleeve and palpate the foal.”

Spirito feels around for whatever he can locate first, which is usually the foal's head or often a front or a hind leg. From there, he begins manipulating the foal to determine its placement, which helps establish his next steps.

Dystocia intervention

According to Spirito, there are four procedures to solve a dystocia.

Manual manipulation. Assisted vaginal delivery, in which the practitioner manually manipulates the foal in a sedated, standing mare, should be attempted first (Figure 3). The practitioner should pull in time with the mare's uterine contractions to reduce trauma to both the foal and the mare and may find tools (such as a head snare or chains on distal limbs) helpful. Once the foal is properly positioned and the rib cage enters the pelvic canal,

the mare should be allowed to finish delivering the foal herself to lessen the chance of fracturing the foal's ribs.

Controlled vaginal delivery.

Controlled vaginal delivery should be done at a referral clinic with the mare under general anesthesia and in the Trendelenburg position, which utilizes gravity to repel the foal. The advantage of this procedure is that the foal can be repelled in a cranial direction with respect to the mare to allow more room for manipulation.

Cesarean section. When a dystocia cannot be resolved vaginally, one can perform a cesarean section with the mare in dorsal recumbency using a caudal ventral midline incision (Figure 4). Indications for this procedure include a severely malpositioned fetus, an abnormal birth canal or a need to reduce reproductive tract trauma.

Fetotomy. A fetotomy is reserved for a dystocia in which the foal is confirmed dead and cannot be delivered via vaginal manipulation.



>>> **Figure 3.** Assisted vaginal delivery of a standing, sedated mare.



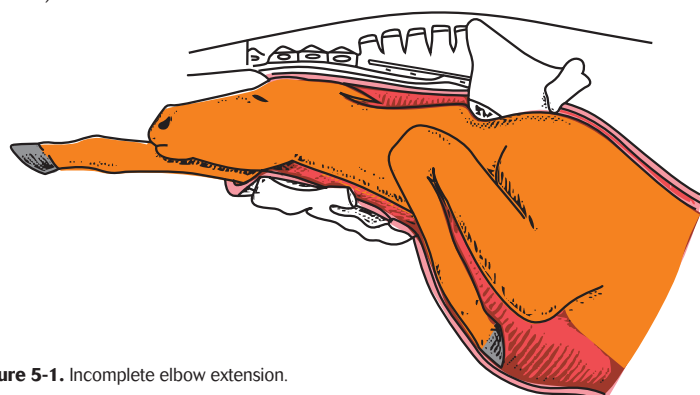
>>> **Figure 4.** A practitioner performing a cesarean section on a mare.

Most common dystocia presentations

Spirito outlines the most common dystocia presentations as follows:

Anterior presentations

- (1) Incomplete elbow extension** occurs when the fetal hooves lie at the same level as the muzzle. Correcting this presentation involves repelling the fetal trunk as far as possible and then applying traction on one limb at a time, thereby positioning the foal in a more normal presentation (Figure 5-1).



>>> **Figure 5-1.** Incomplete elbow extension.

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Please see brief summary on page E2

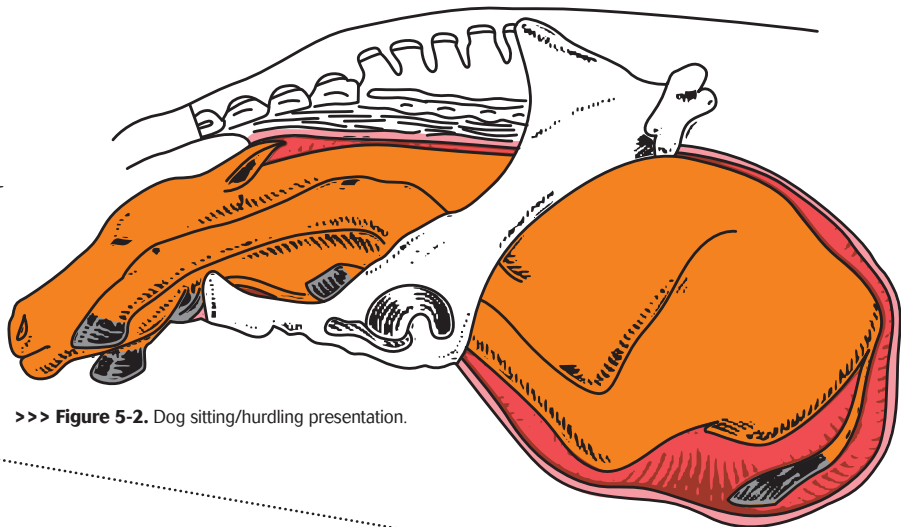
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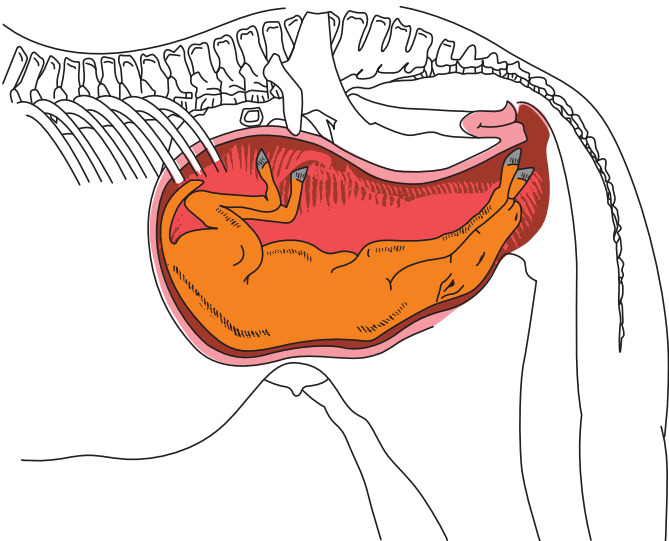
(2)

Dog sitting/hurdling position is characterized by apparent normal positioning, but the foal won't move. Upon further palpitation, the practitioner will discover one or two feet hind up (Figure 5-2).



>>> Figure 5-2. Dog sitting/hurdling presentation.

(3)

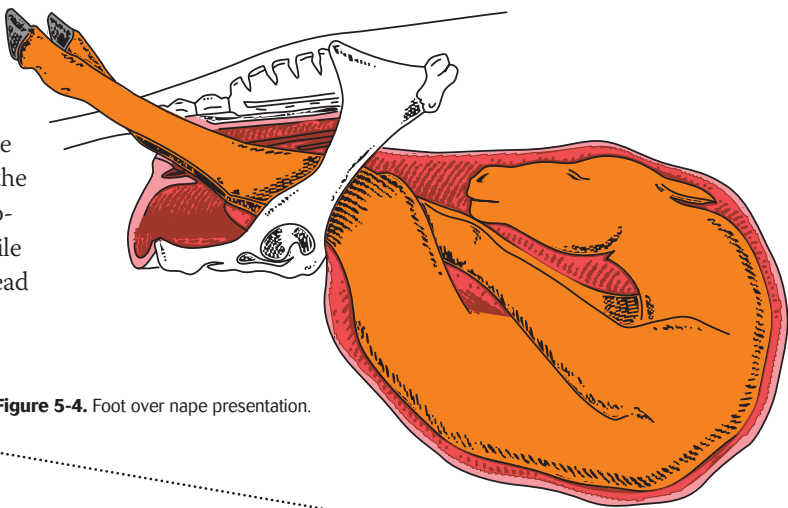


Carpal flexion/contracture is a common presentation that generally affects foals that are either quite large or that are contracted to some extent. To correct this presentation, the practitioner should pull the feet with a chain applied to the pastern with the carpus reflected laterally. A hand should guide the foot and the rotation should be gradual to avoid tearing the uterus (Figure 5-3).

>>> Figure 5-3. Carpal flexion/contracture presentation.

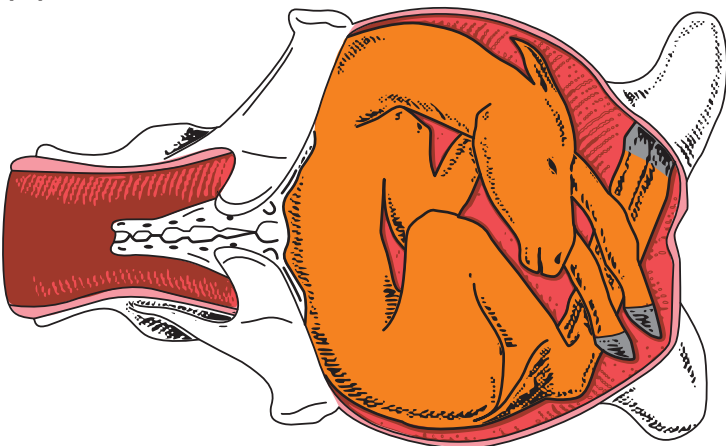
(4)

Foot over nape position occurs when one or both of the forelimbs are displaced over the head and against the roof of the vagina. Correcting this position involves repelling the fetus while the forelimbs are pulled under the head (Figure 5-4).



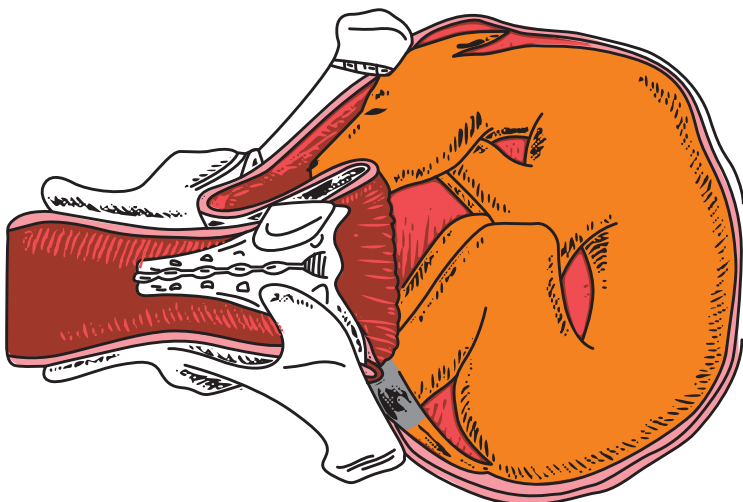
>>> Figure 5-4. Foot over nape presentation.

(5)



Head and neck lateral flexion is a common abnormality that is difficult to correct. If the fetus is alive, the practitioner should attempt to repel the foal and bring the head around (Figure 5-5).

>>> Figure 5-5. Head and neck lateral flexion presentation.

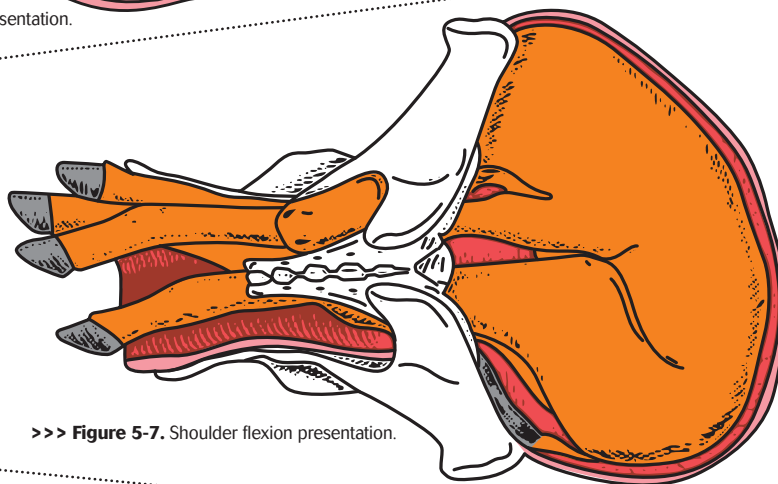


>>> Figure 5-6. Head and neck ventral flexion presentation.

(6)

Head and neck ventral flexion can be fairly easy to correct if the fetal nose is just below the brim of the pelvis and the foal is not too large. Correcting this position involves applying pressure to poll and placing the snare on the lower jaw (Figure 5-6).

Shoulder flexion may be unilateral (“swimming” position) or bilateral (“diving” position), and the fetal head can make access to the retained forelimb impossible. A cesarean section may be the only option (Figure 5-7).



>>> Figure 5-7. Shoulder flexion presentation.

(7)

Posterior dystocia presentations

1. Hock flexion is typically bilateral. If the practitioner attempts to pull the foal, he or she risks rupturing the dorsal wall of the uterus. If the foal is small enough and there is adequate room, the position can be corrected using reduction. Otherwise, a cesarean section is called for if the foal is alive.
2. Bilateral hip flexion usually occurs with deformed foals. A cesarean section is generally preferred.

Ventral dystocia presentations

1. Anterior/ventral position is generally easy to resolve—even at the farm—though it's important to keep the head straight while rotating the foal and engaging it into the birth canal (Figure 6).
2. Posterior/ventral/extended posture carries a risk that the hind legs will penetrate the vagina or rectum. The practitioner can attempt to rotate the foal and deliver in a posterior position, but this is risky if the foal is large.

Transverse dystocia presentations

Transverse dystocia presentations aren't common and are most often associated with a congenital abnormality. Surgery or fetotomy may be necessary.

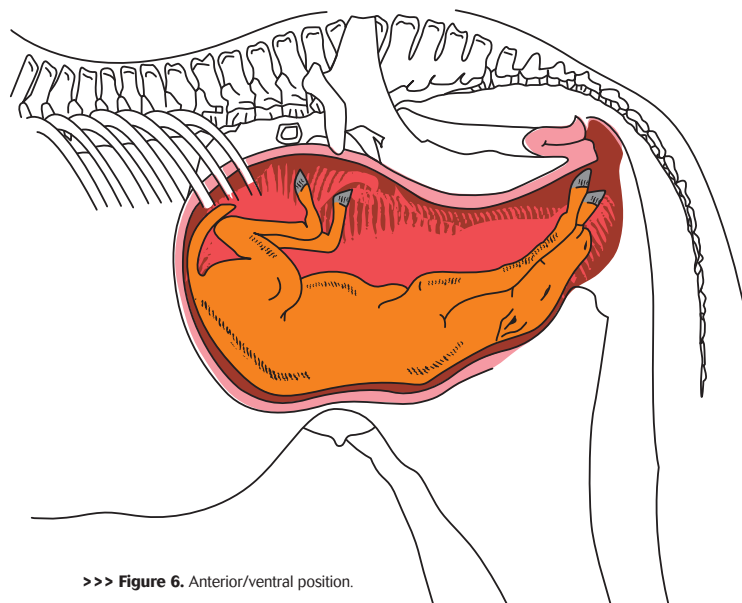
Today, equine practitioners have the tools, equipment and experience to treat mares presenting with dystocia far more effectively than in the past. Equine practitioners at Hagyard Equine Medical Institute and similar facilities, along with graduates of excellent equine programs at veterinary institutions across the country, routinely bring about successful outcomes in equine dystocia cases with

limited downside if the condition is treated in a timely and appropriate fashion. **dvm360**

Suggested reading

Spirito MA. Review of how to triage a dystocia, in *Proceedings*. 62nd Annu Conv Am Assoc Equine Pract 2016; 6-12.

Noakes DE, Parkinson TJ, England GCW, et al. *Arthur's veterinary reproduction and obstetrics*. 9th ed. Edinburgh, Scotland. Elsevier, 2009.



>>> Figure 6. Anterior/ventral position.

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.

Making time for equine in a mixed veterinary practice

When it comes to equine scheduling in an equine/small animal hospital, be the hero your equine veterinarians need. *By Kyle Palmer, CVT*

Many veterinary professionals would agree that one of the biggest headaches in practice is the arduous process of making the scheduling of appointments efficient and productive. It's a challenge for companion animal practices, it's a challenge for equine practices and it's a huge challenge for mixed equine and companion animal practices. Both internal and external forces are at work on a daily basis to make this an issue that needs specific and deliberate attention, but many of them can be overcome with proper management.

Equine clients are just different

After 25 years of trying to figure out why, I've just decided to put this fact into the "what we know" category and respond accordingly. Equine clients are not more (or less!) bonded to their horses than their companion animal counterparts, but for some reason they need a different approach.

In part, and certainly at the practice I manage, the equine "anchor" is a longtime practitioner with a great reputation and a very long shadow. When he's not available, any one of our shorter-tenured but still-capable

associates would be the obvious next choice. Still, regardless of any previous experiences with our associates, many clients are quick to select an option B from outside of our practice.

It's my assumption that the dynamic is influenced by the sheer number of other veterinarians nearby that have a length of service comparable to our equine doctor. In short, these clients aren't turning away from our associates; they're turning toward an alternative who has 40 years of experience as well. Likewise, we often have requests for clients to see our long-tenured equine doctor instead of scheduling



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with the associate(s) at their practice.

With few exceptions, our companion animal clients (who greatly outnumber our equine clients) are perfectly happy to take an appointment with an associate in our practice whom they've never met before. I could shuffle a majority of our daily companion animal appointments and reinstall them in our schedule under any doctor's column and feel little or no risk of upsetting a client. It's an action that is necessary on an occasional basis to equalize the schedule and make sure each of our doctors seeing outpatient appointments share a similar workload. Of course, specific doctor requests are always honored for companion animal appointments; they're just not as common as equine calls.

Not all horses can drive

More to the point, not all horses are able to be driven, meaning that ambulatory work is still in demand regardless of the well-equipped haul-in facility you may have created as part of your practice. On top of all of the expected challenges to good scheduling, ambulatory equine appointments demand a comprehensive knowledge of geography, travel networks and daily traffic fluctuations. Additionally, when companion animals are brought in for an outpatient visit in most clinics, you are in firm control of the time and pacing of the visit. Not so with an equine appointment.

For example, at Mrs. Nawtreddy's farm, you could be subject to waiting while she looks for a lead rope, catches her horse in the pasture, struggles to control the horse and remembers—at the last minute—that her checkbook is in the house. A comprehensive knowledge of the equine clients and their normal behaviors in this regard becomes a valuable tool in properly scheduling the doctor.

How can it work?

In the typical mixed practice, I believe there should be separation between those staff in charge of equine matters and those handling companion animal issues. All equine messages should be referred to a designated staff member who can then ensure their proper routing—particularly general questions that are not for a specific doctor. If not approached this way, an anxious client—calling a second time because

he or she has not received a call back yet—might be routed to another doctor by an unsuspecting staff member.

It's just not reasonable in most mixed practices to expect that the entire staff can be properly in tune with the demands of equine clients and appointments, and the risk of having those wires get crossed is a big issue. It's difficult to find mixed animal practitioners and just as difficult to find a CVT, assistant or customer service staff member who can be an expert in both areas. It's time to stop looking and start dividing the duties.

That designated staff member—and there should be a few trained unless you have someone happy to work every open hour—should have all equine messages sent to her inbox first, after which she will forward on to the appropriate doctor. All calls for appointments should be directed to the same staff member so she can make sure exams get scheduled appropriately. As I mentioned above, equine clients tend to bond to their veterinarian, and companion animal clients tend to bond to the practice. Knowing which client should be scheduled with which doctor will help achieve success in the long run.

Additionally, there may be specific services that are not equally offered among the various equine veterinarians. For example, sending a practitioner out for a complicated lameness when his strength is dentistry or reproduction is a recipe for disaster, or at the least an experience that the client won't feel as confident about.

Finally, and this is a big one, under no circumstances should equine records be copied, mailed, emailed or faxed unless someone who understands that area has signed off on them. This is an age of almost constant requests for records, and companion animal clients are most often building their own file, seeking a second opinion or leaving the area. Equine clients seeking records, however, are not infrequently investigating a potential purchase or being nosy about the horse stalled next to theirs at the local barn. Both have happened periodically in our practice, and the risk of providing something without the seller's permission makes this a very sensitive area.

While it's possible that your practice employs multiple people who understand the details of equine practice,

it's still very important to keep one designated person each day. Switch that position at times due to days off or vacations, but make sure it's just one person at a time. At first, members of our staff had trouble with this structure—some felt like it was a statement of their inability to perform the job well; others felt like it was territorialism on the part of the person selected to fill the role.

Neither were true, of course, but it was a normal reaction. Two things aided in the resolution of those feelings: a very open and frank discussion with the staff (always a good idea regardless of the policy), and the fact that every once in a while, due to vacations, our “third in line” staffer has to take over. She finds it so frustrating and challenging that her statements to the rest of the staff have gone a long way to make sure they wouldn't take the job if they were offered it.

Limiting the number of cooks in the proverbial kitchen also ensures that the very important questions get asked at the time the appointment is made. This includes the proper address and cross streets, a phone number where the client can be reached if needed prior to the appointment (many horses don't live at home or nearby the landline in your files), the horse's vaccination and worming history and—don't ever forget this one—anything else they may need the doctor to do while he or she is out for the visit. On a regular basis, the lack of these questions (or rather answers) represents our doctors' biggest frustration while on the road, and almost every time something is missing we can draw a line back to some other staff member sneaking into the process.

In many practices, equine veterinarians are still on the road alone and without computer support, two things we take for granted while in our facility. Doing everything possible to help their day move along smoothly will make you their hero and will result in a client with expectations that were at least met and probably exceeded. You'll be much happier if you pick one person to take the lead in that effort. **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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Jorgensen Laboratories
Aspiration guard for dental procedures

Jorgensen Laboratories has launched Aspir-Guard, a product that prevents fluids and dental debris from being accidentally aspirated during a routine dental procedure. Aspir-Guard is made of dehydrated PVA foam that has a soft, sponge-like feel when hydrated. When in place, the doughnut-shaped device blocks the oropharynx from fluid aspiration while intubated. The product comes in three sizes.

For fastest response visit jorvet.com



Kimberly-Clark Professional
Liquid barrier gown

The Kimtech A7 Certified Liquid Barrier Gown from Kimberly-Clark Professional protects against spills and splashes from blood-borne pathogens, biologics and other harmful liquids. The gown meets USP <800> guidelines and features a seamless front, enhanced liquid barrier protection, easy don-and-doff and low-lint design, and thumb loops. The gown is bulk-packaged and comes in a range of sizes.

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Kinetic Vet
Topical spray for dermatological conditions

Vetasan Spray, a topical antiseptic spray for dermatological conditions responsive to chlorhexidine and formulated for dogs, cats and horses, is now available.

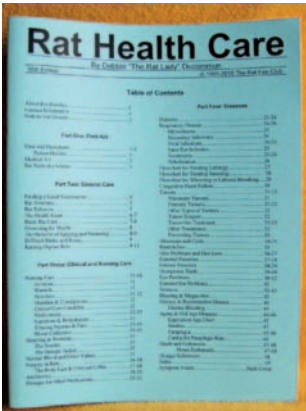
For fastest response visit kineticvet.com



Zoetis
Point-of-care testing for leptospirosis

Zoetis recently launched Witness Lepto, a rapid, point-of-care test that detects the primary immune response to canine leptospires as early as four days after infection. Witness Lepto is the first point-of-care test available in the United States for specific detection of anti-*Lepstospira* immunoglobulin M (IgM) antibodies to four of the most common serovars (canicola, grippityphosa, icterohaemorrhagiae and pomona) affecting dogs. The test requires a 5-µl sample of anticoagulated whole blood, serum or plasma for each test and takes approximately 10 minutes to produce results.

For fastest response visit zoetisus.com



Rat Assistance & Teaching Society (RATS)
Rat health booklet

"Rat Health Care," a 48-page booklet written by Debbie "The Rat Lady" Ducommun and published by the Rat Fan Club, is a reference guide for rat owners and veterinary health professionals. Contents range from general care (first aid, spaying and neutering, grooming), to nursing care (hygiene, nutrition, handling), to clinical care (surgery, tumors, infections, parasites) and is updated about once a year. The Rat Assistance & Teaching Society (R.A.T.S.), a nonprofit that supports rat owners and caregivers, is offering veterinary students copies of the booklet for free.

For fastest response visit petrats.org



PillStashios
Edible medication containers for dogs

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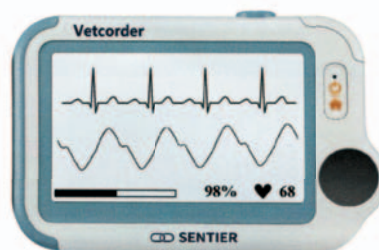
vetsfirstchoice

Vets First Choice Digital prescription management

Vets First Choice helps veterinarians use the latest technologies to better manage patient prescriptions, practice inventory and overall client communications for improved patient care and financial results. The company provides veterinarians with a digital prescription management platform, a modern, professional online store, a fully accredited pharmacy service, access to thousands of products, and a friendly, effective way to communicate with pet and horse owners. The system improves compliance and puts veterinarians back in control of their own pharmacy. Setup is easy, fast and free.

With the service veterinarians receive access to more than 8,000 SKUs, including compounded meds, diets, supplements and generics, as well as a client reminder service to make compliance easier. What's more, a recent pharmacy study group found that when clients pay for products separately, they are more willing to pay for more services.

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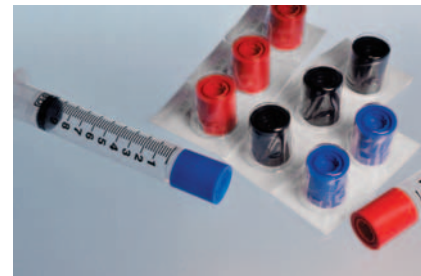
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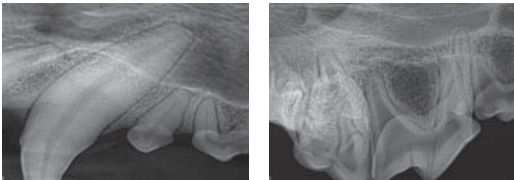
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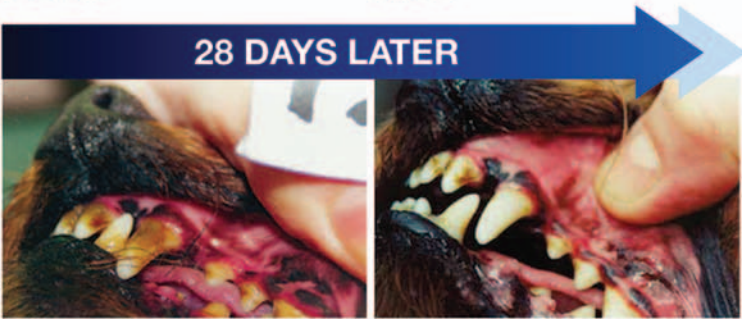
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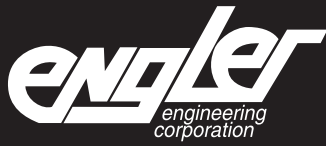
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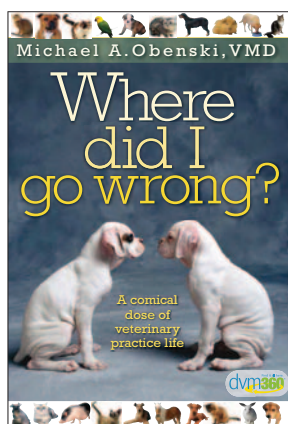
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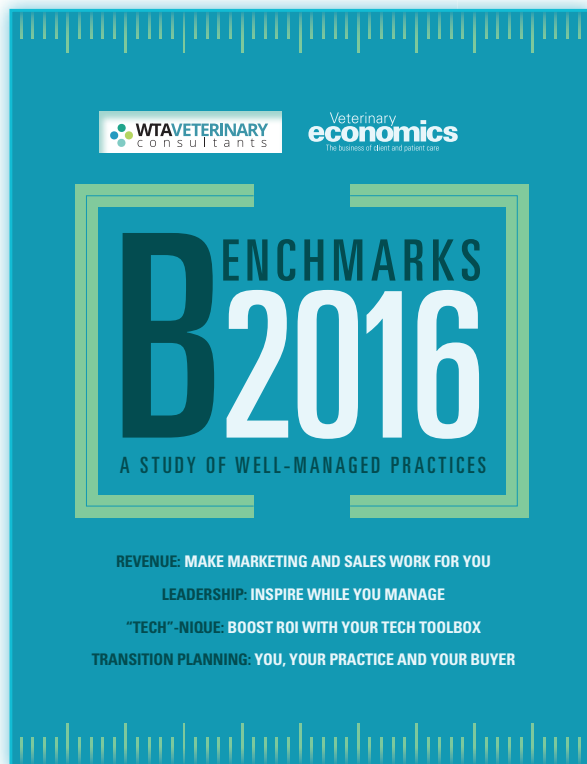
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December 7-10, 2017
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Here are the CE opportunities coming in the next few months

June 8-10 2017 ACVIM Forum National Harbor, MD (303) 231-9933 acvim.org/ACVIM-Forum-Home	Napa Valley, CA (888) 488-3882 vetvacationce.com	Conference Sacramento, CA (916) 649-0599 pacvet.net	Financial Boot Camp San Diego, CA (303) 674-8169 vmc-inc.com	Athens, GA (706) 542-1451 vet.uga.edu/ce/calendar
June 9-11 Fundamentals of Dentistry I 3-Day RACE Accredited Series Baltimore, MD (410) 828-1001 AnimalDentalTraining.com	June 24 Comprehensive Extra- capsular Stifle Stabiliza- tion Course Virginia Beach, VA (774) 230-4195 securosuniversity.com	July 8-9 Veterinary Dental Course—Dentistry CE for Veterinarians & Techs Cincinnati, OH (941) 276-9141 veterinarydentistry.net	July 21-23 Oral Surgery 1 +2, Oral Pathology, and Radiology I 3-Day RACE Accredited Series Baltimore, MD (410) 828-1001 AnimalDentalTraining.com	July 30 Vet and Tech Dental Course Milwaukee, WI (941) 276-9141 veterinarydentistry.net/vet-tech-dental-course-milwaukee-wisconsin-2017/
June 9-11 Animal Chiropractic Module 4/Parker University Dallas, TX (800) 266-4723 ce.parker.edu/courses/animal-chiropractic-program/	June 24-25 Texas A&M Annual Veterinary Technician Seminar College Station, TX (979) 845-2351 vetmed.tamu.edu/ce	July 9 It's What's Up Front That Counts! Newark, NJ (303) 674-8169 vmc-inc.com	July 23 It's What's Up Front That Counts! Detroit, MI (303) 674-8169 vmc-inc.com	Aug 2-5 2017 Therio Conference Fort Collins, CO (334) 395-4666 therio.org/event/2017Therio
June 15-17 AAHA Veterinary Management Institute (VMI) Fort Collins, CO (303) 986-2800 aaha.org/vmi_registration	June 25 It's What's Up Front That Counts! New Orleans, LA (303) 674-8169 vmc-inc.com	July 14-16 Animal Chiropractic Module 5 Dallas, TX (800) 266-4723 ce.parker.edu/courses/animal-chiropractic-program/	July 27-30 AAHA Adventure CE Pack Trip Jackson Hole, WY (720) 963-4424 aaha.org/professional/education/adventure.aspx	Aug 5-6 Clinical Advantage— Technician's Workshop Baltimore, MD (410) 828-1001 AnimalDentalTraining.com
June 17-18 Frank 2.0 Workshop Fort Collins, CO (970) 297-1273 cvmb.colostate.edu/ce/frank-2-workshop	June 25 Comprehensive Canine and Feline Dental Extraction Course Virginia Beach, VA (774) 230-4195 securosuniversity.com	July 17-18 Human Resources Boot- camp Phoenix, AZ (303) 674-8169 vmc-inc.com	July 28 Regional Wildlife Medicine Symposium Banner Elk, NC (828) 898-3521 lmc.edu/community/wildlife-medicine-symposium.htm	Aug 6 Comprehensive Canine and Feline Dental Extraction Course Columbus, OH (774) 230-4195 securosuniversity.com
June 20-23 Vet Vacation CE	June 28 Emerald Coast Veterinary Conference Sandestin, FL (678) 309-9800 emeraldcoastvc.com	July 19-22 Vet Vacation CE Springdale, UT (888) 488-3882 vetvacationce.com	July 29-30 Basic Small Animal Gastrointestinal Endos- copy	Aug 6 It's What's Up Front That Counts! Baltimore, MD (303) 674-8269 vmc-inc.com

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STAMPEDE | Bo Brock, DVM



A little BS isn't a bad thing—or is it?

Just because you're the veterinarian doesn't mean you can get away with everything. Here's an example of the dangers of BSarrhea.

Here's the standard definition of BSarrhea: a condition in which BS is discharged from the mouth frequently and in a fluid form at least three times a day.

BSarrhea may or may not be a sign of disease; in some cases it can be a variation of normal. I think you know what I speak of here. We all know a person who seems to be the

They vividly described her history as we walked to the trailer to start the exam. Laverne opened the gate and continued bantering about the cow. I began looking at the critter, whose fanny was facing the back of the trailer, and noticed there were maggots under her tail.

Laverne noticed them about the same time I did. "Would you look

The professor would then rebuke me for a moment and eventually give me the correct answer.

I had no idea how long it took to hatch a fly egg, but just like in veterinary school, I squinted, shifted my eyes, raised my voice an octave, and said, "Oh, about 24 hours!"

"Did you hear that, Pappie?" Laverne said. "I had no idea it happened that fast. Can you believe that?"

What? She believed it! And I didn't get rebuked by a professor or given the correct answer. Sheesh, this was a lot different than my experience in veterinary school.

If you're good at BS, you may be liable to fall into the auto-rhetoric syndrome trap. Auto-rhetoric syndrome is when someone pathologically believes their own rhetoric (BS). This is a problem.

I found myself headed down the road to auto-rhetoric syndrome soon after the fly egg encounter. I could say anything, and since I was the "doctor," people seemed to believe me. Shame on me.

I was quick to see that I needed to be careful, and I set about doing something about it. Over the next several years I studied and took the equine practitioner boards and learned to say, "I don't know," rather than raising a shoulder with a squint and a glance. But you have to be careful—there are a lot of folks out there who believe their own BS. **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."

I'm genetically programmed to have mild chronic BSarrhea and was trained straight out of veterinary school by a seasoned practitioner of the art. But one has to be careful because of the increasingly dramatic effect BSarrhea can have.

king or queen of BS. When it comes to veterinarians, a little BS is not always a bad thing. I think we all want a little joking around and personality in our doctors.

I'm genetically programmed to have mild chronic BSarrhea and was trained straight out of veterinary school by a seasoned practitioner of the art. But one has to be careful because of the increasingly dramatic effect BSarrhea can have. Let me give you an example:

I'd been out of veterinary school and practicing for exactly one week when Laverne and Pappie Evans showed up pulling a long stock trailer with a single cow inside. The cow had gone down the night before, so they put her in the trailer and brought her to town to see what was up.

at that, Pappie!" she said furiously. "Them maggots weren't there last night. How long does it take a fly egg to develop into a maggot, Dr. Bo?"

I had just graduated from veterinary school a few short days before and had become accustomed to professors asking me questions I didn't know the answers to. It's almost a game with them—they ask you question after question until they finally stump you, and then they're happy.

I'd get a look on my face when they asked me something I didn't know. I'd squint with my right eye and shift my glance to the left. When I'd answer the question, which you always had to do whether you knew the right answer or not, my voice would go up an octave and my right shoulder would raise a bit.

Find it all here
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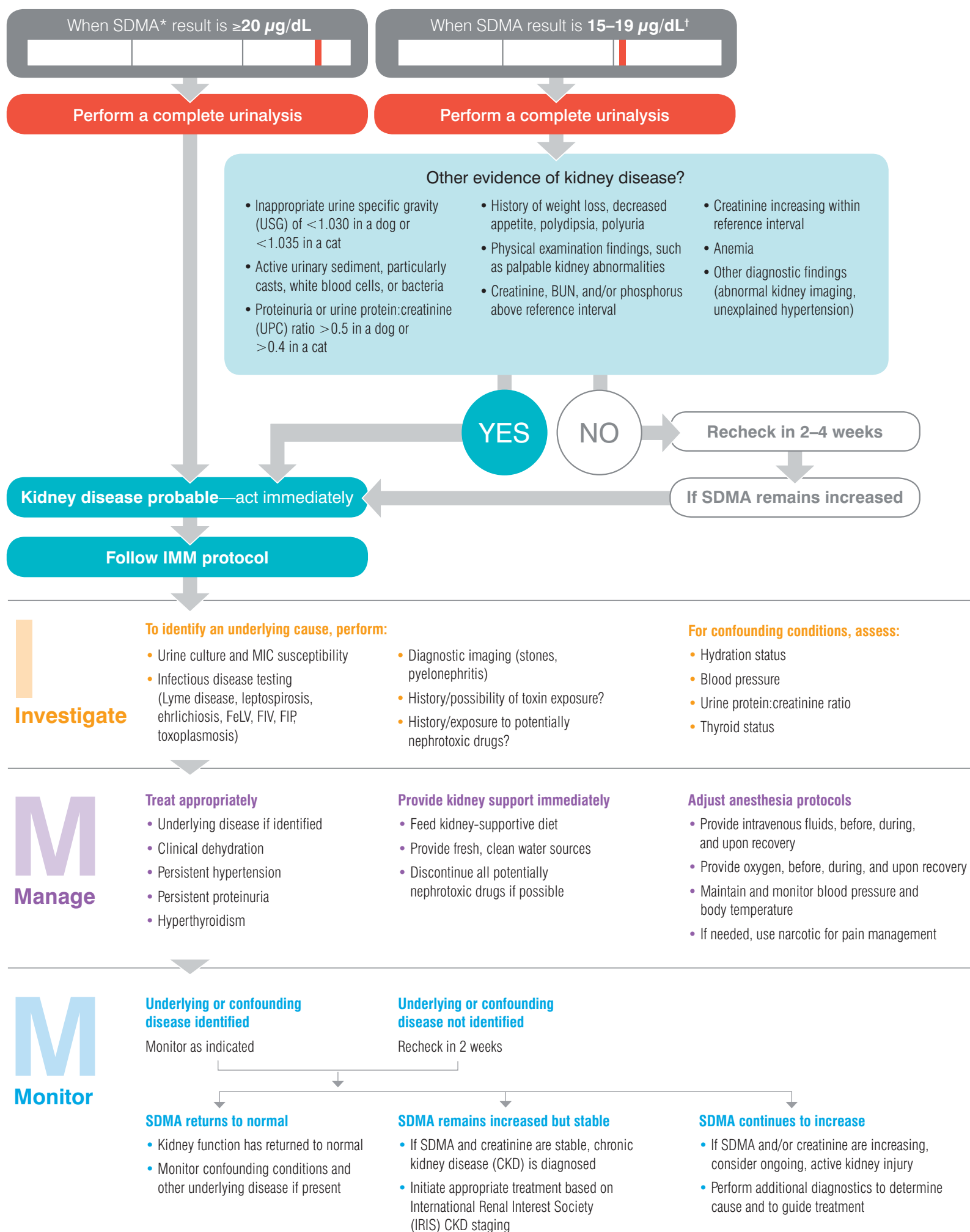
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