Feline emergency: Top 5 procedures

These lifesaving techniques should be in every clinician's practice toolbox

page M1

September 2019 | Volume 50 | Number 9 | dvm360.com

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with broad-spectrum coverage, inside and out

Elanco

A portfolio of protection from common parasites

ECTOPARASITES

Fleas

Ticks

ENDOPARASITES

Tapeworms

Heartworm

Intestinal Parasites

Clients can save big when they purchase both Credelio and Interceptor Plus, and we support your clinic with the useful tools you need. See back cover to learn more.

Indications

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

Important Safety Information

The safe use of Credelio in breeding, pregnant or lactating dogs has not been evaluated. Use with caution in dogs with a history of seizures. The most frequently reported adverse reactions are weight loss, elevated blood urea nitrogen, excessive urination, and diarrhea. Please see brief summary on side back cover for full prescribing information.

Indications

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

Important Safety Information

Treatment with fewer than 6 monthly doses after the last exposure to mosquitoes may not provide complete heartworm prevention. Prior to administration of Interceptor Plus, dogs should be tested for existing heartworm infections. The safety of Interceptor Plus has not been evaluated in dogs used for breeding or in lactating females. The following adverse reactions have been reported in dogs after administration of milbemycin oxime or praziquantel: vomiting, diarrhea, depression/lethargy, ataxia, anorexia, convulsions, weakness, and salivation. Please see brief summary on side back cover for full prescribing information.

Credelio™
(lotilaner)

Chewable Tablets

For oral use in dogs

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

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

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

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

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

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

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

Adverse Reactions:
In a well-controlled U.S. field study, which included 284 dogs (198 dogs treated with CREDELIO and 86 dogs treated with an oral active control), there were no serious adverse reactions.

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

Dogs with Adverse Reactions in the Field Study

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

*Two geriatric dogs developed mildly elevated BUN (34 to 54 mg/dL; reference range: 6 to 31 mg/dL) during the study. One of these dogs also developed polyuria and a mildly elevated potassium (6.5 mEq/L; reference range: 3.6 to 5.5 mEq/L) and phosphorous (6.4 mg/dL; reference range: 2.5 to 6.0 mg/dL). The other dog also developed a mildly elevated creatinine (1.7 to 2.0 mg/dL; reference range: 0.5 to 1.6 mg/dL) and weight loss.

In addition, one dog experienced intermittent head tremors within 1.5 hours of administration of vaccines, an ear cleaning performed by the owner, and its first dose of CREDELIO. The head tremors resolved within 24 hours without treatment. The owner elected to withdraw the dog from the study.

In an Australian field study, one dog with a history of seizures experienced seizure activity (tremors and glazed eyes) six days after receiving CREDELIO. The dog recovered without treatment and completed the study. In the U.S. field study, two dogs with a history of seizures received CREDELIO and experienced no seizures throughout the study.

In three well-controlled European field studies and one U.S. laboratory study, seven dogs experienced episodes of vomiting and four dogs experienced episodes of diarrhea between 6 hours and 3 days after receiving CREDELIO.

To report suspected adverse events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Elanco US, Inc. at 1-888-545-5973. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or http://www.fda.gov/AnimalVeterinary/SafetyHealth.

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

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

In well-controlled laboratory studies, CREDELIO demonstrated > 97% effectiveness against *Amblyomma americanum*, *Dermacentor variabilis*, *Ixodes scapularis* and *Rhipicephalus sanguineus* ticks 48 hours after administration or infestation for 30 days. In a well-controlled European laboratory study, CREDELIO started killing *Ixodes ricinus* ticks within four hours after administration.

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

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

NADA #141-494, Approved by the FDA

Manufactured for:
Elanco US Inc
Greenfield, IN 46140 USA

Credelio.com

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PA209456X_BrS1 P2a

Interceptor™ Plus
(milbemycin oxime/praziquantel)

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

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

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

Dosage and Administration
INTERCEPTOR PLUS should be administered orally, once every month, at the minimum dosage of 0.23 mg/lb (0.5 mg/kg) milbemycin oxime, and 2.28 mg/lb (5 mg/kg) praziquantel. For heartworm prevention, give once monthly for at least 6 months after exposure to mosquitoes (see **EFFECTIVENESS**).

See product insert for complete dosing and administration information.

Contraindications
There are no known contraindications to the use of INTERCEPTOR PLUS.

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

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

Prior to administration of INTERCEPTOR PLUS, dogs should be tested for existing heartworm infections. At the discretion of the veterinarian, infected dogs should be treated to remove adult heartworms. INTERCEPTOR PLUS is not effective against adult *D. immitis*. Mild, transient hypersensitivity reactions, such as labored breathing, vomiting, hypersalivation, and lethargy, have been noted in some dogs treated with milbemycin oxime carrying a high number of circulating microfilariae. These reactions are presumably caused by release of protein from dead or dying microfilariae.

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

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

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

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

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

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

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

Effectiveness
Heartworm Prevention:
In a well-controlled laboratory study, INTERCEPTOR PLUS was 100% effective against induced heartworm infections when administered once monthly for 6 consecutive months. In well-controlled laboratory studies, neither one dose nor two consecutive doses of INTERCEPTOR PLUS provided 100% effectiveness against induced heartworm infections.

Intestinal Nematodes and Cestodes Treatment and Control:
Elimination of the adult stage of hookworm (*Ancylostoma caninum*), roundworm (*Toxocara canis, Toxascaris leonina*), whipworm (*Trichuris vulpis*) and tapeworm (*Echinococcus multilocularis, Echinococcus granulosus, Taenia pisiformis and Dipylidium caninum*) infections in dogs was demonstrated in well-controlled laboratory studies.

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

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

How Supplied
INTERCEPTOR PLUS is available in four strengths, formulated according to the weight of the dog. Each strength is available in color-coded packages of six chewable tablets each. The tablets containing 2.3 mg milbemycin oxime/22.8 mg praziquantel or 5.75 mg milbemycin oxime/57 mg praziquantel are also available in color coded packages of one chewable tablet each.

Manufactured for:
Elanco US Inc.
Greenfield, IN 46140, USA
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PA100648X_BrS1 P1c

We’ve got you COVERED...

Feline emergency: Top 5 procedures

These lifesaving techniques should be in every clinician's practice toolbox

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September 2019 | Volume 50 | Number 9 | dvm360.com

Beyond the suicide hotline

When you or a a fellow veterinary professional is in trouble, there are options other than an anonymous 800 number.

By Hilal Dogan, BVSc, CCTP

When a colleague admits they're entertaining thoughts of suicide, what do you say? Who do you encourage them to reach out to? Is directing them to the National Suicide Prevention Lifeline enough? What if the person hurting is *you*? Do you really want to call an 800 number, stay on hold and then spill your guts to a total stranger?

Don't get me wrong—I'm glad 800-273-TALK exists. However, I've heard countless times that people can be on hold for a long time. One Fetch dvm360 conference attendee told me her daughter was on hold for 45 minutes before she hung up. That's insane. It may make you feel like your situation doesn't matter to anyone else, which could have disastrous consequences.

I personally think the hold button should never be pressed on a suicide hotline or a delay taken with someone who may be suicidal. The risks are too high, and you may only get one chance. Luckily the daughter of the Fetch attendee I talked to did not become another statistic—she was able to get help.

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Chronic pain:

Pharmacologic options for silently suffering patients

Understanding the medications used to manage persistent pain will improve your ability to provide veterinary care. *By Tasha McNerney, BS, CVT, CVPP, VTS (anesthesia and analgesia)*

Pain management has become an important specialty area in veterinary medicine, just as it has in human medicine. There are as many different types of pain as there are ways to treat it.

Chronic pain has traditionally been defined by its duration (pain that persists for weeks to months). Untreated chronic pain can lead to a variety of syndromes. In veterinary medicine, common causes of chronic pain include osteoarthritis (OA), cancer pain and neuropathic pain.

Every animal experiences pain in a unique way. Some common indicators in dogs and cats include decreased social interaction, reluctance to move, loss of appetite, aggression and biting, but the lack of an overtly pain-related behavior does not necessarily mean an animal is not in pain. One major sign of pain in cats is a reluctance to jump onto high surfaces such as windowsills or countertops.

The most important aspect of chronic pain management is to employ a multimodal protocol. Multimodal therapy

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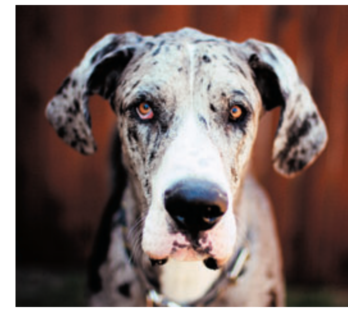
Keep associates on board during a corporate transition page 28



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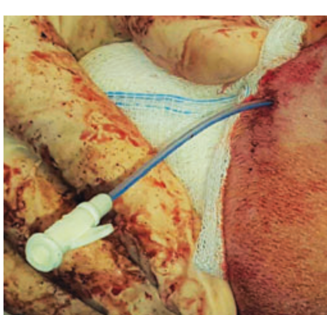

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Storm Sangria: A calming cocktail for noise-phobic dogs page 40

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

For use in dogs only

Antinol®
For use in dogs and cats

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

ANTINOL is a joint health supplement.

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

For more information on products mentioned in this ad, please see full prescribing information on page 4-5.

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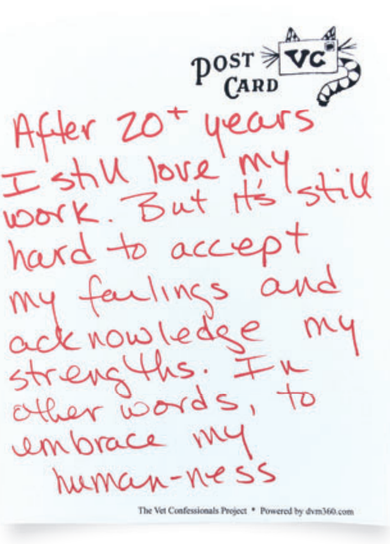
Vet Confessions:

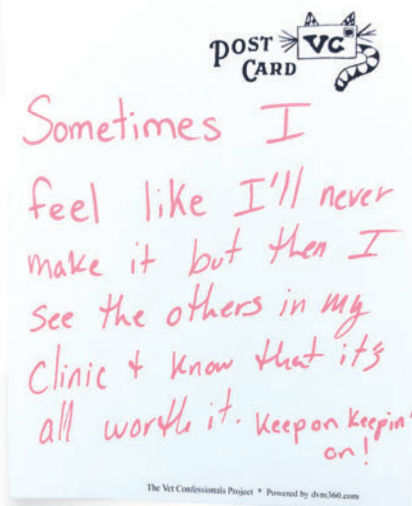
Don't struggle alone—find someone to lean on

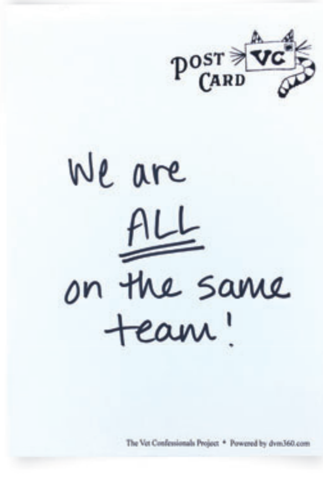
September is National Suicide Prevention Month, and the veterinary profession has its challenges in this area. But these contributors to the Vet Confessionals Project find reason to hope.

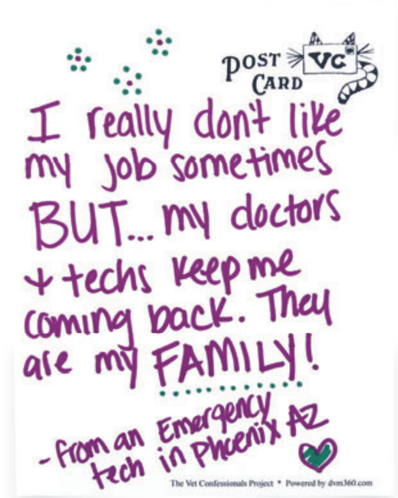


The Veterinary Confessionals Project isn't just a great way for veterinary professionals to share their worries in an anonymous forum. It's also a way to see that other people are going through the same struggles as you are. One of the reasons we put the display up at Fetch dvm360 conference is for that reason—we want to help drive the point home that you're not the only one struggling. And having a tribe to support you can make that struggle a little less painful.

See if you can find some comfort or want to go hug a friend after seeing these. And don't forget, you can share your own anonymous confession at **dvm360.com/vetconfessions**.







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Brief Summary
NADA 141-213, Approved by FDA

Metacam®
(meloxicam oral suspension)
1.5 mg/mL (equivalent to 0.05 mg per drop) /0.5 mg/mL (equivalent to 0.02 mg per drop)
Non-steroidal anti-inflammatory drug for oral use in dogs only

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

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

Description: Meloxicam is a non-steroidal anti-inflammatory drug (NSAID) of the oxicam class. Each milliliter of METACAM Oral Suspension contains meloxicam equivalent to 0.5 or 1.5 milligrams and sodium benzoate (1.5 milligrams) as a preservative. The chemical name for Meloxicam is 4-Hydroxy-2-methyl-N-(5-methyl-2-thiazolyl)-2H-1,2-benzothiazine-3-carboxamide-1, 1-dioxide. The formulation is a yellowish viscous suspension with the odor of honey.

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

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

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

As with any NSAID all dogs should undergo a thorough history and physical examination before the initiation of NSAID therapy. Appropriate laboratory testing to establish hematological and serum biochemical baseline data is recommended prior to and periodically during administration. Owner should be advised to observe their dog for signs of potential drug toxicity and be given a client information sheet about METACAM.

Precautions: The safe use of METACAM Oral Suspension in dogs younger than 6 months of age, dogs used for breeding, or in pregnant or lactating dogs has not been evaluated. Meloxicam is not recommended for use in dogs with bleeding disorders, as safety has not been established in dogs with these disorders. As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Dogs that have experienced adverse reactions from one NSAID may experience adverse reactions from another NSAID. Patients at greatest risk for renal toxicity are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully approached. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such anti-prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Since NSAIDs possess the potential to induce gastrointestinal ulcerations and/or perforations, concomitant use with other anti-inflammatory drugs, such as NSAIDs or corticosteroids, should be avoided. If additional pain medication is needed after administration of the total daily dose of METACAM Oral Suspension, a non-NSAID or non-corticosteroid class of analgesia should be considered. The use of another NSAID is not recommended. Consider appropriate washout times when switching from corticosteroid use or from one NSAID to another in dogs. The use of concomitantly protein-bound drugs with METACAM Oral Suspension has not been studied in dogs. Commonly used protein-bound drugs include cardiac, anticonvulsant and behavioral medications. The influence of concomitant drugs that may inhibit metabolism of METACAM Oral Suspension has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy.

Adverse Reactions: Field safety was evaluated in 306 dogs.[1] Based on the results of two studies, GI abnormalities (vomiting, soft stools, diarrhea, and inappetance) were the most common adverse reactions associated with the administration of meloxicam.

The following adverse events are based on post-approval adverse drug experience reporting. Not all adverse reactions are reported to FDA/CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data. The following adverse events are listed in decreasing order of frequency by body system.

Gastrointestinal: vomiting, anorexia, diarrhea, melena, gastrointestinal ulceration
Urinary: azotemia, elevated creatinine, renal failure
Neurological/Behavioral: lethargy, depression
Hepatic: elevated liver enzymes
Dermatologic: pruritus

Death has been reported as an outcome of the adverse events listed above. **Acute renal failure and death have been associated with use of meloxicam in cats.**

Information for Dog Owners: METACAM, like other drugs of its class, is not free from adverse reactions. 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, dark or tarry stools, increased water consumption, increased urination, pale gums due to anemia, yellowing of gums, skin or white of the eye due to jaundice, lethargy, incoordination, seizure, or behavioral changes. **Serious adverse reactions associated with this drug class can occur without warning and in rare situations result in death (see Adverse Reactions). Owners should be advised to discontinue METACAM and contact their veterinarian immediately if signs of intolerance are observed.** The vast majority of patients with drug related adverse reactions have recovered when the signs are recognized, the drug is withdrawn, and veterinary care, if appropriate, is initiated. Owners should be advised of the importance of periodic follow up for all dogs during administration of any NSAID.

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

Reference: 1. FOI for NADA 141-213 METACAM (meloxicam oral suspension).

Manufactured for:
Boehringer Ingelheim Vetmedica, Inc.
St. Joseph, MO 64506 U.S.A.

METACAM is a registered trademark of Boehringer Ingelheim Vetmedica GmbH, used under license.

601401-08/601413-04/6015161-10/6015268-04
Revised 07/2016

18490
06/2018

Brief Summary
NADA 141-219, Approved by FDA

Metacam®
(meloxicam)
5 mg/mL Solution for Injection
Non-steroidal anti-inflammatory drug for use in dogs and cats only

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

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

Description: Meloxicam is a non-steroidal anti-inflammatory drug (NSAID) of the oxicam class. Each mL of this sterile product for injection contains meloxicam 5.0 mg, alcohol 15%, glycofurol 10%, poloxamer 188 5%, sodium chloride 0.6%, glycine 0.5% and meglumine 0.3%, in water for injection, pH adjusted with sodium hydroxide and hydrochloric acid.

Indications:
Dogs: METACAM (meloxicam) 5 mg/mL Solution for Injection is indicated in dogs for the control of pain and inflammation associated with osteoarthritis.

Contraindications: Dogs with known hypersensitivity to meloxicam should not receive METACAM 5 mg/mL Solution for Injection.

Warnings: Not for use in humans. Keep this and all medications out of reach of children. Consult a physician in case of accidental ingestion by humans. For IV or SQ injectable use in dogs. All dogs should undergo a thorough history and physical examination before administering any NSAID. Appropriate laboratory testing to establish hematological and serum biochemical baseline data is recommended prior to, and periodically during use of any NSAID in dogs.

Owner should be advised to observe their dogs for signs of potential drug toxicity.

Precautions: The safe use of METACAM 5 mg/mL Solution for Injection in dogs younger than 6 months of age, dogs used for breeding, or in pregnant or lactating bitches has not been evaluated. Meloxicam is not recommended for use in dogs with bleeding disorders, as safety has not been established in dogs with these disorders. Safety has not been established for intramuscular (IM) administration in dogs. When administering METACAM 5 mg/mL Solution for Injection, use a syringe of appropriate size to ensure precise dosing. As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Dogs that have experienced adverse reactions from one NSAID may experience adverse reactions from another NSAID. Patients at greatest risk for renal toxicity are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully approached. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such anti-prostaglandin effects may result in clinically significant disease in patients with underlying or preexisting disease that has not been previously diagnosed. Since NSAIDs possess the potential to induce gastrointestinal ulcerations and/or perforations, concomitant use with other anti-inflammatory drugs, such as NSAIDs or corticosteroids, should be avoided. If additional pain medication is needed after the administration of the total daily dose of METACAM Oral Suspension, a non-NSAID or noncorticosteroid class of analgesia should be considered. The use of another NSAID is not recommended. Consider appropriate washout times when switching from corticosteroid use or from one NSAID to another in dogs. The use of concomitantly protein-bound drugs with METACAM 5 mg/mL Solution for Injection has not been studied in dogs. Commonly used protein-bound drugs include cardiac, anticonvulsant and behavioral medications. The influence of concomitant drugs that may inhibit metabolism of METACAM 5 mg/mL Solution for Injection has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy. The effect of cyclo-oxygenase inhibition and the potential for thromboembolic occurrence or a hypercoagulable state has not been studied.

Adverse Reactions:
Dogs: A field study involving 224 dogs was conducted.[1] Based on the results of this study, GI abnormalities (vomiting, soft stools, diarrhea, and inappetence) were the most common adverse reactions associated with the administration of meloxicam.

The following adverse reactions are based on post-approval adverse drug event reporting. The categories are listed in decreasing order of frequency by body system:

Gastrointestinal: *vomiting, diarrhea, melena, gastrointestinal ulceration*
Urinary: *azotemia, elevated creatinine, renal failure*
Neurological/Behavioral: *lethargy, depression*
Hepatic: *elevated liver enzymes*
Dermatologic: *pruritus*

Death has been reported as an outcome of the adverse events listed above. **Acute renal failure and death have been associated with the use of meloxicam in cats.**

Information For Dog Owners: Meloxicam, like other NSAIDs, is not free from adverse reactions. Owners should be advised of the potential for adverse reactions and be informed of the clinical signs associated with NSAID intolerance. Adverse reactions may include vomiting, diarrhea, decreased appetite and behavioral changes. Dog owners should be advised when their pet has received a meloxicam injection. Dog owners should contact their veterinarian immediately if possible adverse reactions are observed, and dog owners should be advised to discontinue METACAM therapy.

Effectiveness:
Dogs: The effectiveness of METACAM 5 mg/mL Solution for Injection was demonstrated in a field study involving a total of 224 dogs representing various breeds, all diagnosed with osteoarthritis.[1] This placebo-controlled, masked study was conducted for 14 days. Dogs received a subcutaneous injection of 0.2 mg/kg METACAM 5 mg/mL Solution for Injection on day 1. The dogs were maintained on 0.1 mg/kg oral meloxicam from days 2 through 14. Variables evaluated by veterinarians included lameness, weight-bearing, pain on palpation, and overall improvement. Variables assessed by owners included mobility, ability to rise, limping, and overall improvement.

In this field study, dogs showed clinical improvement with statistical significance after 14 days of meloxicam treatment for all variables.

Reference: 1. FOI for NADA 141-219 METACAM (meloxicam) 5 mg/mL Solution for Injection.

Manufactured for:
Boehringer Ingelheim Vetmedica, Inc.
St. Joseph, MO 64506 U.S.A.

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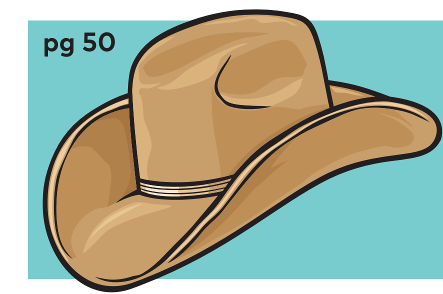
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CHEWABLE TABLETS

Brief Summary: Before using PREVICOX, 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.

Indications: PREVICOX (firocoxib) Chewable Tablets are indicated for the control of pain and inflammation associated with osteoarthritis and for the control of postoperative pain and inflammation associated with soft-tissue and orthopedic surgery in dogs.

Contraindications: Dogs with known hypersensitivity to firocoxib should not receive PREVICOX.

Warnings: Not for use in humans. Keep this and all medications out of the reach of children. Consult a physician in case of accidental ingestion by humans.
For oral use in dogs only. Use of this product at doses above the recommended 2.27 mg/lb (5.0 mg/kg) in puppies less than seven months of age has been associated with serious adverse reactions, including death (see Animal Safety). Due to tablet sizes and scoring, dogs weighing less than 12.5 lb (5.7 kg) cannot be accurately dosed.
All dogs should undergo a thorough history and physical examination before the initiation of NSAID therapy. Appropriate laboratory testing to establish hematological and serum baseline data is recommended prior to and periodically during administration of any NSAID. ***Owners should be advised to observe for signs of potential drug toxicity (see Adverse Reactions and Animal Safety) and be given a Client Information Sheet about PREVICOX Chewable Tablets.***

For technical assistance or to report suspected adverse events, call 1-877-217-3543. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDAVETS or http://www.fda.gov/AnimalVeterinary/SafetyHealth

Precautions: This product cannot be accurately dosed in dogs less than 12.5 pounds in body weight. Consider appropriate washout times when switching from one NSAID to another or when switching from corticosteroid use to NSAID use.

As a class, cyclooxygenase inhibitory NSAIDs may be associated with renal, gastrointestinal and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Dogs that have experienced adverse reactions from one NSAID may experience adverse reactions from another NSAID. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully approached and monitored. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such anti-prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Since NSAIDs possess the potential to produce gastrointestinal ulceration and/or gastrointestinal perforation, concomitant use of PREVICOX Chewable Tablets with other anti-inflammatory drugs, such as NSAIDs or corticosteroids, should be avoided. The concomitant use of protein-bound drugs with PREVICOX Chewable Tablets has not been studied in dogs. Commonly used protein-bound drugs include cardiac, anticonvulsant, and behavioral medications. The influence of concomitant drugs that may inhibit the metabolism of PREVICOX Chewable Tablets has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy. If additional pain medication is needed after the daily dose of PREVICOX, a non-NSAID class of analgesic may be necessary. Appropriate monitoring procedures should be employed during all surgical procedures. Anesthetic drugs may affect renal perfusion, approach concomitant use of anesthetics and NSAIDs cautiously. The use of parenteral fluids during surgery should be considered to decrease potential renal complications when using NSAIDs perioperatively. The safe use of PREVICOX Chewable Tablets in pregnant, lactating or breeding dogs has not been evaluated.

Adverse Reactions:
Osteoarthritis: In controlled field studies, 128 dogs (ages 11 months to 15 years) were evaluated for safety when given PREVICOX Chewable Tablets at a dose of 2.27mg/lb (5.0 mg/kg) orally once daily for 30 days. The following adverse reactions were observed. Dogs may have experienced more than one of the observed adverse reactions during the study.

Adverse Reactions Seen in U. S. Field Studies

Adverse Reactions	*PREVICOX (n=128)*	*Active Control (n=121)*
Vomiting	5	8
Diarrhea	1	10
Decreased Appetite or Anorexia	3	3
Lethargy	1	3
Pain	2	1
Somnolence	1	1
Hyperactivity	1	0

PREVICOX (firocoxib) Chewable Tablets were safely used during field studies concomitantly with other therapies, including vaccines, anthelmintics, and antibiotics.

Soft-tissue Surgery: In controlled field studies evaluating soft-tissue postoperative pain and inflammation, 258 dogs (ages 10.5 weeks to 16 years) were evaluated for safety when given PREVICOX Chewable Tablets at a dose of 2.27 mg/lb (5.0 mg/kg) orally approximately 2 hours prior to surgery and once daily thereafter for up to two days. The following adverse reactions were observed. Dogs may have experienced more than one of the observed adverse reactions during the study.

Adverse Reactions Seen in the Soft-tissue Surgery Postoperative Pain Field Studies

Adverse Reactions	*Firocoxib Group (n=127)*	*Control Group* (n=131)*
Vomiting	5	6
Diarrhea	1	1
Bruising at Surgery Site	1	1
Respiratory Arrest	1	0
SQ Crepitus in Rear Leg and Flank	1	0
Swollen Paw	1	0

**Sham-dosed (pilled)*

Orthopedic Surgery: In a controlled field study evaluating orthopedic postoperative pain and inflammation, 226 dogs of various breeds, ranging in age from 1 to 11.9 years in the PREVICOX-treated groups and 0.7 to 17 years in the control group were evaluated for safety. Of the 226 dogs, 118 were given PREVICOX Chewable Tablets at a dose of 2.27 mg/lb (5.0 mg/kg) orally approximately 2 hours prior to surgery and once daily thereafter for a total of three days. The following adverse reactions were observed. Dogs may have experienced more than one of the observed adverse reactions during the study.

Adverse Reactions Seen in the Orthopedic Surgery Postoperative Pain Field Study

Adverse Reactions	*Firocoxib Group (n=118)*	*Control Group* (n=108)*
Vomiting	1	0
Diarrhea	2**	1
Bruising at Surgery Site	2	3
Inappetence/ Decreased Appetite	1	2
Pyrexia	0	1
Incision Swelling, Redness	9	5
Oozing Incision	2	0

A case may be represented in more than one category.
*Sham-dosed (pilled).
**One dog had hemorrhagic gastroenteritis.

Post-Approval Experience (Rev. 2009): The following adverse reactions are based on post-approval adverse drug event reporting. The categories are listed in decreasing order of frequency by body system:

Gastrointestinal: *Vomiting, anorexia, diarrhea, melena, gastrointestinal perforation, hematemesis, hematachezia, weight loss, gastrointestinal ulceration, peritonitis, abdominal pain, hypersalivation, nausea*

Urinary: *Elevated BUN, elevated creatinine, polydypsia, polyuria, hematuria, urinary incontinence, proteinuria, kidney failure, azotemia, urinary tract infection*

Neurological/Behavioral/Special Sense: *Depression/lethargy, ataxia, seizures, nervousness, confusion, weakness, hyperactivity, tremor, paresis, head tilt, nystagmus, mydriasis, aggression, uveitis*

Hepatic: *Elevated ALP, elevated ALT, elevated bilirubin, decreased albumin, elevated AST, icterus, decreased or increased total protein and globulin, pancreatitis, ascites, liver failure, decreased BUN*

Hematological: *Anemia, neutrophilia, thrombocytopenia, neutropenia*

Cardiovascular/Respiratory: *Tachypnea, dyspnea, tachycardia*

Dermatologic/Immunologic: *Pruritis, fever, alopecia, moist dermatitis, autoimmune hemolytic anemia, facial/muzzle edema, urticaria*

In some situations, death has been reported as an outcome of the adverse events listed above.

For a complete listing of adverse reactions for firocoxib reported to the CVM see: http://www.fda.gov/downloads/AnimalVeterinary/SafetyHealth/ProductSafetyInformation/UCM055407.pdf

Information For Dog Owners: PREVICOX, like other drugs of its class, is not free from adverse reactions. 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, dark or tarry stools, increased water consumption, increased urination, pale gums due to anemia, yellowing of gums, skin or white of the eye due to jaundice, lethargy, incoordination, seizure, or behavioral changes. **Serious adverse reactions associated with this drug class can occur without warning and in rare situations result in death (see Adverse Reactions). Owners should be advised to discontinue PREVICOX therapy and contact their veterinarian immediately if signs of intolerance are observed.** The vast majority of patients with drug-related adverse reactions have recovered when the signs are recognized, the drug is withdrawn, and veterinary care, if appropriate, is initiated. Owners should be advised of the importance of periodic follow up for all dogs during administration of any NSAID.

Effectiveness: Two hundred and forty-nine dogs of various breeds, ranging in age from 11 months to 20 years, and weighing 13 to 175 lbs, were randomly administered PREVICOX or an active control drug in two field studies. Dogs were assessed for lameness, pain on manipulation, range of motion, joint swelling, and overall improvement in a non-inferiority evaluation of PREVICOX compared with the active control. At the study's end, 87% of the owners rated PREVICOX-treated dogs as improved. Eighty-eight percent of dogs treated with PREVICOX were also judged improved by the veterinarians. Dogs treated with PREVICOX showed a level of improvement in veterinarian-assessed lameness, pain on palpation, range of motion, and owner-assessed improvement that was comparable to the active control. The level of improvement in PREVICOX-treated dogs in limb weight bearing on the force plate gait analysis assessment was comparable to the active control. In a separate field study, two hundred fifty-eight client-owned dogs of various breeds, ranging in age from 10.5 weeks to 16 years and weighing from 7 to 168 lbs, were randomly administered PREVICOX or a control (sham-dosed-pilled) for the control of postoperative pain and inflammation associated with soft-tissue surgical procedures such as abdominal surgery (e.g., ovariohysterectomy, abdominal cryptorchidectomy, splenectomy, cystotomy) or major external surgeries (e.g., mastectomy, skin tumor removal ≤8 cm). The study demonstrated that PREVICOX-treated dogs had significantly lower need for rescue medication than the control (sham-dosed-pilled) in controlling postoperative pain and inflammation associated with soft-surgery. A multi-center field study with 226 client-owned dogs of various breeds, and ranging in age from 1 to 11.9 years in the PREVICOX-treated groups and 0.7 to 17 years in the control group was conducted. Dogs were randomly assigned to either the PREVICOX or the control (sham-dosed-pilled) group for the control of postoperative pain and inflammation associated with orthopedic surgery. Surgery to repair a ruptured cruciate ligament included the following stabilization procedures: fabellar suture and/or imbrication, fibular head transposition, tibial plateau leveling osteotomy (TPLO), and 'over the top' technique. The study (n = 220 for effectiveness) demonstrated that PREVICOX-treated dogs had significantly lower need for rescue medication than the control (sham-dosed-pilled) in controlling postoperative pain and inflammation associated with orthopedic surgery.

Animal Safety: In a targeted animal safety study, firocoxib was administered orally to healthy adult Beagle dogs (eight dogs per group) at 5, 15, and 25 mg/kg (1, 3, and 5 times the recommended total daily dose) for 180 days. At the indicated dose of 5 mg/kg, there were no treatment-related adverse events. Decreased appetite, vomiting, and diarrhea were seen in dogs in all dose groups, including unmedicated controls, although vomiting and diarrhea were seen more often in dogs in the 5X dose group. One dog in the 3X dose group was diagnosed with juvenile polyarteritis of unknown etiology after exhibiting recurrent episodes of vomiting and diarrhea, lethargy, pain, anorexia, ataxia, proprioceptive deficits, decreased albumin levels, decreased and then elevated platelet counts, increased bleeding times, and elevated liver enzymes. On histopathologic examination, a mild ileal ulcer was found in one 5X dog. This dog also had a decreased serum albumin which returned to normal by study completion. One control and three 5X dogs had focal areas of inflammation in the pylorus or small intestine. Vacuolization without inflammatory cell infiltrates was noted in the thalamic region of the brain in three control, one 3X, and three 5X dogs. Mean ALP was within the normal range for all groups but was greater in the 3X and 5X dose groups than in the control group. Transient decreases in serum albumin were seen in multiple animals in the 3X and 5X dose groups, and in one control animal. In a separate safety study, firocoxib was administered orally to healthy juvenile (10-13 weeks of age) Beagle dogs at 5, 15, and 25 mg/kg (1, 3, and 5 times the recommended total daily dose) for 180 days. At the indicated (1X) dose of 5 mg/kg, on histopathologic examination, three out of six dogs had minimal periportal hepatic fatty change. On histopathologic examination, one control, one 1X, and two 5X dogs had diffuse slight hepatic fatty change. These animals showed no clinical signs and had no liver enzyme elevations. In the 3X dose group, one dog was euthanized because of poor clinical condition (Day 63). This dog also had a mildly decreased serum albumin. At study completion, out of five surviving and clinically normal 3X dogs, three had minimal periportal hepatic fatty change. Of twelve dogs in the 5X dose group, one died (Day 82) and three moribund dogs were euthanized (Days 38, 78, and 79) because of anorexia, poor weight gain, depression, and in one dog, vomiting. One of the euthanized dogs had ingested a rope toy. Two of these 5X dogs had mildly elevated liver enzymes. At necropsy all five of the dogs that died or were euthanized had moderate periportal or severe panzonal hepatic fatty change; two had duodenal ulceration; and two had pancreatic edema. Of two other clinically normal 5X dogs (out of four euthanized as comparators to the clinically affected dogs), one had slight and one had moderate periportal hepatic fatty change. Drug treatment was discontinued for four dogs in the 5X group. These dogs survived the remaining 14 weeks of the study. On average, the dogs in the 3X and 5X dose groups did not gain as much weight as control dogs. Rate of weight gain was measured (instead of weight loss) because these were young growing dogs. Thalamic vacuolation was seen in three of six dogs in the 3X dose group, five of twelve dogs in the 5X dose group, and to a lesser degree in two unmedicated controls. Diarrhea was seen in all dose groups, including unmedicated controls. In a separate dose tolerance safety study involving a total of six dogs (two control dogs and four treated dogs), firocoxib was administered to four healthy adult Beagle dogs at 50 mg/kg (ten times the recommended daily dose) for twenty-two days. All dogs survived to the end of the study. Three of the four treated dogs developed small intestinal erosion or ulceration. Treated dogs that developed small intestinal erosion or ulceration had a higher incidence of vomiting, diarrhea, and decreased food consumption than control dogs. One of these dogs had severe duodenal ulceration, with hepatic fatty change and associated vomiting, diarrhea, anorexia, weight loss, ketonuria, and mild elevations in AST and ALT. All four treated dogs exhibited progressively decreasing serum albumin that, with the exception of one dog that developed hypoalbuminemia, remained within normal range. Mild weight loss also occurred in the treated group. One of the two control dogs and three of the four treated dogs exhibited transient increases in ALP that remained within normal range.

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HSUS **'Horrible Hundred'** list calls out puppy mills

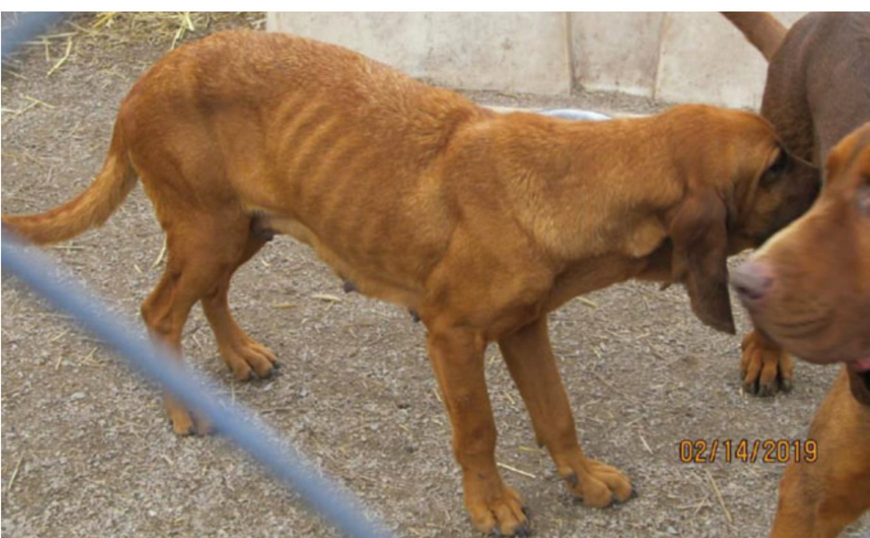
The Humane Society's latest report lists puppy mills and dog sellers consumers should be wary of, calls on government agencies to enforce regulations. *By Kristy Stevenson*

The Humane Society of the United States (HSUS) recently published a list of one hundred problem puppy mills and dog sellers. Dubbed 'The Horrible Hundred,' this report is published annually to warn consumers about common problems associated with puppy mills and to urge government oversight agencies, such as the United States Department of Agriculture (USDA) and some local departments of agriculture, to live up to their enforcement obligations. The USDA is responsible for inspecting dog breeding kennels in every state if they have five or more breeding females and sell sight-unseen, such as through pet stores or online.

The report shows that some of the dealers listed in the 2018 version appear to have closed their doors, while others have been penalized by the state but appear to still be operating. "A few of the dealers listed have been shut down by local authorities or were urged to close voluntarily, due to ongoing and uncorrected violations," says Kitty Block, president and CEO of the HSUS, in an interview with *dvm360*. "A few others have cleaned up their facilities to acceptable levels due to the increased scrutiny."

Violations include dogs found shivering in the cold, dogs with only frozen water buckets available or no water at all, dogs with untreated wounds, sick puppies that had not been treated by a veterinarian and underweight dogs with their ribs and spines showing. Twenty-seven of the dealers in the 2019 report are repeat offenders.

"Private practice veterinary professionals often see the devastating impact of sick puppies brought home by unsuspecting consumers," Block says in the interview. "Many did not know their puppy came from a puppy mill, but they quickly learned the truth when faced with middle-of-the-night emergency veterinary visits and hundreds or even thousands of dollars in veterinary bills. It can put veterinarians in the position of having to explain to an owner that the dog they purchased isn't as healthy as they were told, or, worse, that the dog isn't able to be saved. In a field already fraught with compassion fatigue, circumstances like this only exacerbate the situation."



Cedar Ridge Australians, also known as AussieDoodleWoods, located in Alton, Missouri, is one of several repeat offenders on the Horrible Hundred list. According to the report, state inspectors have repeatedly found underweight or injured dogs at the operation, including a dog with bite wounds.

Missouri has the largest number of puppy mills in the Horrible Hundred for the seventh year in a row, followed by Iowa, Pennsylvania and Ohio. It's important to note, however, that HSUS researchers are unable to get local inspection records from states that don't have kennel inspection laws, so states that have solid kennel inspection programs often have more dealers in the report. States such as Arkansas, Florida, North Carolina and Tennessee don't inspect dog breeding kennels at all and therefore have few to no dealers in the report simply because documentation is scant.

Recently, there appears to have been a steep decline in mill enforcement by the USDA. The *Washington Post* reported in February that USDA inspectors documented 60 percent fewer violations at licensed facilities in 2018 than in 2017. It was also reported last October that the USDA issued only 39 written warnings in the first three quarters of 2018, and it settled only one complaint against a puppy mill operator. In 2017, the agency issued 192 warnings and filed complaints against 23 licensees.

Also of concern to the HSUS is the USDA-launched pilot program that would alert some facilities to inspections in advance, as well as revisions to the written guide that its inspectors use (eliminating requirements related to identifying suffering animals and requiring veterinary examinations for sick animals).

In response, USDA spokesperson Andre Bell submitted this statement in an email release: "We are dedicated to conducting quality inspections and providing assistance to facilities with compliance challenges. In FY 2017, USDA conducted 2,727 inspections of breeding facilities and found that 97 percent of them were in substantial compliance with the Animal Welfare Act (AWA) requirements."

In 2017, the USDA redacted breeder names, kennel names and license numbers from most of the public inspection records available online. The HSUS is currently in an ongoing legislative battle with the USDA to get those redactions removed under Freedom of Information Act requests.

The Humane Society Veterinary Medical Association (HSVMA), a HSUS affiliate, recently submitted a letter to the USDA with 272 signatures from veterinary professionals. The letter supports the proposed USDA rule that could prevent federally licensed pet breeders with conditions that violate basic standards of care, or those who have had their licenses previously revoked, from obtaining a new license. The rule would also require licensed facilities to provide annual hands-on professional veterinary care for each dog, along with continual access to water. The letter noted that the proposed provisions are common sense from a veterinary perspective.

Block says that the letter also urged the USDA to make the rule stronger by banning certain hallmarks of puppy mills—such as stacked cages and wire floors—and requiring dogs to have more space than the tiny cages the USDA currently allows.

"Puppy mills are bad for animals, consumers and veterinarians alike," said Block in the interview. She urges consumers not to buy puppies from pet stores or online, or from any breeder who won't meet you in person and show you the conditions in which a puppy was raised.

Kristy Stevenson is an independent contributing writer and editor based in Wake Forest, North Carolina. Her award-winning work has appeared in Military Officer *and* Geek, *in addition to other publications.*

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*Brunetto MA et al. Effects of nutritional support on hospital outcome in dogs and cats. *J Vet Emerg Crit Care.* 2010; 20: 224–231. Mohr AJ et at. Effect of early enteral nutrition on intestinal permeability, intestinal protein loss, and outcome in dogs with severe parvoviral enteritis. *J Vet Int Med.* 2003; 17: 791–798.

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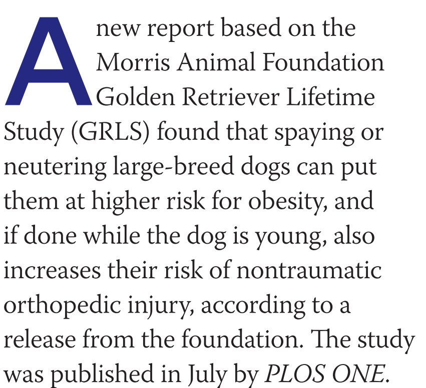
Spaying or neutering dogs **increases risk** of obesity, injury

Results from the Golden Retriever Lifetime Study by the Morris Animal Foundation focus on golden retrievers, but report posits data could apply to other large breeds.



A new report based on the Morris Animal Foundation Golden Retriever Lifetime Study (GRLS) found that spaying or neutering large-breed dogs can put them at higher risk for obesity, and if done while the dog is young, also increases their risk of nontraumatic orthopedic injury, according to a release from the foundation. The study was published in July by *PLOS ONE*.

"For years, we've been taught that spaying or neutering your dog is part of being a responsible pet owner, but there really are advantages and disadvantages to consider when making that decision," says Missy Simpson, DVM, PhD, Morris Animal Foundation epidemiologist and lead author on the report. "Our study results give dog owners and veterinarians new information to consider when deciding on when to spay or neuter their dog."

It's estimated that one-third to one-half of the general population of large-breed dogs are either overweight or obese, the release states. About 2% of the same population suffers nontraumatic orthopedic injuries, such as cruciate ligament rupture.

Dr. Simpson studied the health data from the entire GRLS cohort of more than 3,000 dogs, which was collected over the course of six years. Of those dogs, about one-half had been spayed or neutered.

The data show that spayed or neutered dogs were 50% to 100% more likely to become overweight or obese, and the risk of weight gain was relatively constant regardless of age at the time of spaying or neutering. Age at time of surgery does appear to play a significant role in nontraumatic orthopedic injuries, however, the release notes. Dr. Simpson found that dogs that underwent spay or neuter before 6 months of age had a 300% higher risk of sustaining those injuries.

Though the study and journal article focus on golden retrievers, Dr. Simpson notes that the results can likely be applied to other breeds, particularly large- and giant-breed dogs.

Banfield report: Obesity, osteoarthritis **on the rise**

The ninth annual Banfield State of Pet Health Report focused on two intertwined problems: obesity and joint disease.

According to the State of Pet Health 2019 Report, recently released by Banfield Pet Hospital, dogs and cats are more likely to be affected by osteoarthritis (OA) today than they were 10 years ago. According to a Banfield release, the hospital group has seen a 66% increase of OA in dogs and a 150% increase in cats over the past decade.

What's more, the connection between OA and overweight is undeniable; 52% of the dogs and 41% of the cats with OA cared for in 2018 at Banfield practices were obese. The report makes the point that OA and overweight are part of a vicious cycle that worsens the joint disease: The pet experiences arthritic changes, which lead to reduced mobility, potential weight gain and, ultimately, progressive arthritic changes.

Compiled from data culled from more than 2.5 million dogs and 500,000 cats seen at Banfield Pet Hospitals each year, the annual State of Pet Health Report explores a specific clinical area in depth to provide trends along with prevention and treatment advice for pet owners.

"All of us at Banfield understand [that] diagnosing and treating a complicated and sometimes overlooked disease like osteoarthritis is a joint effort—and that pets can benefit from better management of both pain and excess weight," says Molly McAllister, DVM, MPH, Banfield's chief medical officer, in the release. The goal with this year's report, she said, "is to arm pet owners with the tools they need to spot signs of OA and empower them to have meaningful conversations with their veterinarians to give their pets the best lives possible."

Related findings from the report include:

> 6.1% of dogs and 1.1% of cats are affected by OA.

> About 20% of dogs and 4% of cats with OA were aged 10 years or older.

> Overweight or obese dogs are 2.3 times more likely than average-weight dogs to be diagnosed with OA.

> Dogs with OA are 1.7 times more likely to be overweight or obese than dogs without OA.

> Cats with OA are 1.2 times more likely to be overweight or obese than cats without OA.

More on obesity in pets

If you're looking to dig in on treating obesity, educating clients and related conditions, you find it all at dvm360.com/obesity-pets.

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Chronic pain

> Continued from the cover

involves the combined use of analgesic drugs and physical therapies to target several different points along the pain pathway, enabling more effective pain control with fewer side effects. This article discusses currently available pain medications used in veterinary medicine.

Nonsteroidal anti-inflammatory drugs (NSAIDs) remain the mainstay of analgesic therapy for chronically painful patients, reducing inflammation, pain and fever. The principal mode of action of NSAIDs is to block prostaglandin production by binding and inhibiting cyclooxygenase (COX) enzymes throughout the body. However, only COX-1 produces prostaglandins that support platelets and protect the stomach. Because these prostaglandins also are reduced, NSAIDs can cause stomach and intestinal ulcers and promote bleeding.

Grapiprant (Galliprant) is a first-in-class prostaglandin receptor antagonist, a non–COX-inhibiting NSAID. It specifically targets the EP4 receptor, which is the primary mediator of canine OA pain and inflammation.

Opioids are useful in a variety of chronically painful conditions, although they may have limited effectiveness in managing some forms of neuropathic pain. Opioids are available in oral and transdermal versions. With the current opioid shortage in veterinary medicine, however, it may be advantageous to pursue other methods of analgesia.

N-methyl-D-aspartate (NMDA) receptor antagonists are often used as adjuncts (i.e. in combination with other analgesics) to improve pain control. Intense and/or chronic painful stimuli result in changes in the central nervous system's response to input, leading to an increase in pain intensity. NMDA receptor antagonist drugs help to control and treat this "amplification." Amantadine is the most commonly used oral NMDA receptor antagonist. It was originally developed as an antiviral compound and has also been used to treat Parkinson's disease in humans.

Gabapentin has been used to manage many forms of chronic pain, although its best application may be for neuropathic pain. Gabapentin is an anticonvulsant medication with significant adjunctive anti-hyperalgesic action. It's commonly used in conjunction with opioids for pain relief in post-amputation patients. Regardless of whether gabapentin is being used for neuropathic or chronic pain, it should not be discontinued abruptly. To avoid a rebound pain effect, the dose must be stepped down.

Gabapentin may also be used as a sedative to help prevent stress. Pre-hospital oral administration of gabapentin in cats may make providing care easier.

Tricyclic antidepressants have been used in humans and animals as adjuncts to other analgesics (especially opioids) for chronic pain. They act to inhibit serotonin and norepinephrine reuptake, although they may have other analgesic effects as well, including possible actions at opioid receptors and on nerve transmission.

Tasha McNerney is an anesthesia nurse at CARES (Center for Animal Referral and Emergency Services) in Langhorne, Pennsylvania, and is the founder of the Anesthesia Nerds Facebook group.

MARY SWIFT/STOCK.ADOBE.COM

Suicide hotline

> Continued from the cover

Help yourself

Laurie Fonken, PhD, a psychotherapist and director of counseling for the College of Veterinary Medicine and Biomedical Sciences at Colorado State, says she encourages people in crisis to go directly to a mental health crisis center. These centers are open 24/7, and Dr. Fonken often accompanies the person to the facility and waits while they check in. If you want to be ready for this situation, do some research on facilities in your area and keep their numbers and addresses in your phone. Start your research with a call to the Treatment Referral Helpline at 877-726-4727.

The internet is another great option. All sorts of social media support groups have popped up lately, such as Not One More Vet (nomv.org). Joining this kind of group and reading about what other people are dealing with may help you find your own solution, or at least realize you're not alone. Facebook and Instagram groups for your specific role—practice manager, owner, relief veterinarian, house-call veterinarian, emergency technician, veterinary receptionist and so on—can also be a source of support. Joining as many groups as possible can help you build a community of support online.

In the veterinary profession, I often get the sense that help for those who are struggling needs to come from within the profession itself. People need to be able to say to each other, "I went through that, too, and it was really awful, but it gets better," or "I have a similar story, and it scarred me for life, but I'm in a better place now." While I don't fully believe that someone outside the profession can't possibly understand, I do realize that some challenges are unique to veterinary medicine—euthanasia and everything surrounding that subject is one example. In the end, what helps people feel like they want to stick around? It's the feeling of being heard, understood and supported.

Help others

Even if you yourself aren't having thoughts of suicide, how can you help your colleagues? I recently posted on the Veterinary Confessionals Instagram page about a program called Q-P-R, or Question-Persuade-Refer, which is a mental health certification that's supposed to be akin to cardiopulmonary resuscitation—a technique anyone can use if faced with someone they think might be suicidal.

Dr. Fonken has taken the Q-P-R modules herself, and she encourages students and faculty to try them as well.

"It gives you the language to use so you can get comfortable saying things like, 'Are you thinking of harming yourself?'" Dr. Fonken says. "Veterinary professionals aren't trained to handle situations such as this," she says. But they might be the first to notice what's happening."

Dr. Fonken also says training can make supporters feel more confident. Not knowing what to do or say in a crisis can provoke anxiety, and someone may avoid a conversation simply because they don't know how to cope. Questions such as, "Would you be willing to work with me?" or "Can I get you some help?" can open the conversation, Dr. Fonken says. Knowing how to refer someone to a compassionate professional can be vital in saving a life. You don't have to treat the person—someone else is qualified to do that. But guiding them to a safe place can be key.

Recently, after I posted the Q-P-R information, someone commented that a suicidal person may hesitate to speak up because they don't want to be "taken away in a straightjacket." In that moment I realized how much stigma around mental illness and suicide still exists today, even though we're talking about it more openly. In the past, people who confessed to suicidal ideation or who attempted suicide indeed got locked up. And I can imagine that the thought of being institutionalized sounds a lot worse than killing yourself—not to mention the fear of it permanently affecting your career. It's evident to me that we still have a lot of work to do breaking down this stigma.

Dr. Fonken agrees: "I think there's a real fear of sharing if you're struggling, because everyone else looks like they're doing so well. We tend to compare how we're feeling on the inside to how others look on the outside. We judge ourselves for this and worry that we may come across as weak if we're vulnerable and ask for help. It's important for people to know that they aren't alone and that they'll be supported."

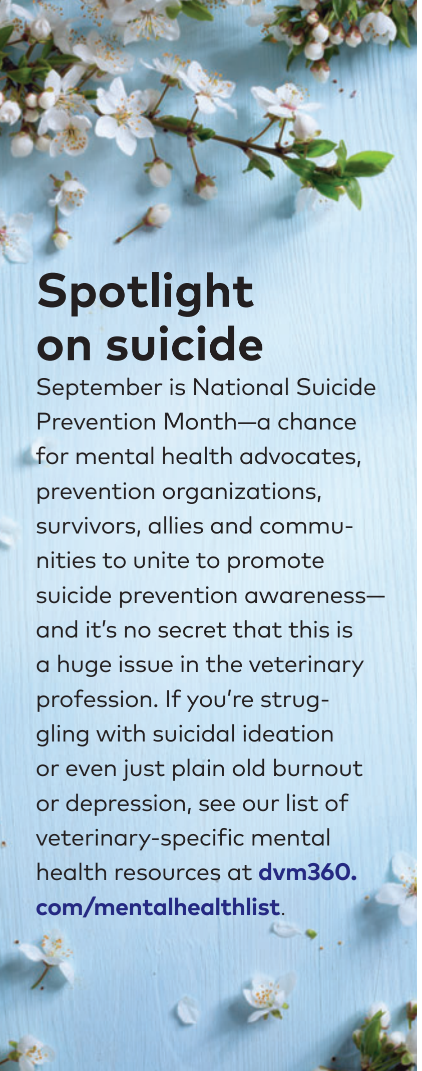
A vital factor in preventing suicide in the veterinary profession is workplace culture, Dr. Fonken says. She urges practice owners and managers to create a culture where people feel safe enough to talk about these things without fear of negative repercussions.

"This example needs to be set by the leaders but carried out by all the staff consistently," she says. "That way others can see it's a supportive environment, and you can ask for help and won't be fired or gossiped about. Because then you'll have an employee who will get help, then come back and be stronger and better. That sets the example for others that it's OK to ask for help."

Anyone can have thoughts of suicide at any moment—it doesn't mean you are forever broken or that something will always be wrong with you. As a doctor, I truly believe getting to the root cause is the only way we will find a cure, and that starts with us wanting to help ourselves first.

In addition, we as a profession need to smash the stigma around mental health problems. We need to demonstrate that suicidal ideation is normal. It's a signal from your brain that, hey, something is wrong here—stop and try and figure out what it is.

If you don't work at a place where you feel safe, or the culture is not supportive of mental health issues, then find someone you trust, even if they're anonymous, and spew your guts out. You will feel better afterward.



Frequent Fetch dvm360 conference speaker Dr. Hilal Dogan practices in Denver, Colorado. She started the Veterinary Confessionals Project as a senior veterinary student at Massey University in New Zealand.

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AVMA Life reduces paid maternity leave

As part of short-term disability coverage, cost proved unsustainable, reports veterinary insurance expert.

By Kristi Reimer Fender

AVMA Trust leadership has confirmed that the maternity coverage included in the AVMA Life Trust short-term disability policy is dropping from three months to one month, generating pushback from women in the veterinary profession and a discussion of harsh financial realities from the decision-makers at the top.

Under the old policy, short-term disability purchased through AVMA Life would "start paying benefits on or before the date of the delivery, and provide benefits for up to three months." The new policy states, "Benefits can be paid for up to 1 month for routine pregnancy/delivery (disabilities resulting from complications from pregnancy are covered as any other illness)."

During the AVMA House of Delegates (HOD) meeting held Aug. 2 in Washington, D.C., one member asked the association to prioritize support for families going forward. "I realize the financial realities behind the decision to reduce maternity coverage," said Amanda Bisol, VMD, alternate delegate from Maine. "But considering that a large percentage of practicing veterinarians are women, I would like the AVMA to discuss ways to support families."

Joe Kinnarney, DVM, MS, is president of the AVMA Trusts. In response to Dr. Bisol's comments, he admitted that communication about the change was not ideal and explained that "cost was not sustainable at the price" for 90-day maternity coverage as previously offered. One of the reasons for this, he said, was that people were purchasing short-term disability coverage, having a baby and then dropping the coverage.

"This is not how the policy was intended to be used," Dr. Kinnarney said. "If more people had kept their short-term disability policies long-term, it would have worked out. As it is, we will still be offering an extended maternity policy—but it will be more expensive."

The women's veterinary website Vet Candy posted a critical piece, stating, "While the U.S. does not have a standard maternity leave length, a study by the Society for Human Resource Management (SHRM) found that 60% of employers give 12 weeks of maternity leave."

> *"While the U.S. does not have a standard maternity leave length, a study by the Society for Human Resource Management found that 60% of employers give 12 weeks of maternity leave.*
> *—Vet Candy, women's veterinary lifestyle website*

A Reddit thread also weighed in, with one commenter declaring, "The AVMA doesn't care about you, me, or any other veterinarian out in practice (clinical or otherwise)."

Another participant in the thread replied, "I think the blame is a little misguided here. … This is because it's too expensive so truly the insurance company is to blame first, then the AVMA for poorly communicating and implementing it quickly. … If you think they don't care get involved and fix it. Tell them how they can be better."

Calif. bill would open cannabis conversations

DVMs would be able to discuss products without fear of sanctions.

By Gabrielle Roman

A bill introduced in the California legislature could make it easier for veterinarians to talk to clients about cannabis in practice. Introduced by Sen. Cathleen Galgiani, a Democrat from Stockton, SB 627 proposes to allow "a qualified veterinarian, as defined, to discuss the use of medicinal cannabis or medicinal cannabis products on an animal patient" without fear of reprisal.

To allow discussions of medical cannabis, the bill would protect DVMs "from being punished, or denied any right or privilege, for having recommended medicinal cannabis or medicinal cannabis products for an animal patient for medical purposes."

Veterinarians would potentially be subject to discipline if they do not follow given restrictions, such as:

- There must be an established relationship between the veterinarian, client and patient to make a recommendation.
- The veterinarian must perform an examination and identify a medical indication before making a recommendation.
- A veterinarian cannot recommend medicinal cannabis if he or she has a financial relationship with a person or entity that dispenses medicinal cannabis.
- Veterinarians cannot advertise that they offer recommendations for medical cannabis, and they cannot dispense or administer cannabis or cannabis products to patients.

San Francisco-based marijuana grower Lovingly and Legally is a sponsor of the bill, as are the American College of Veterinary Botanical Medicine and the American Holistic Veterinary Medical Association, which stated, "Thousands of people are currently using cannabis for their pets with questionable advice from the internet or potentially unreliable advice from budtenders." They need reliable information from veterinarians, says the association.

The Assembly Committee on Business and Professions listed a major concern being the lack of research regarding cannabis and animals. They noted that the Center of Medicinal Cannabis Research in California has done no studies on the efficacy of cannabis in animals. As a result, the committee suggested adding a research requirement—and providing funding for that research—in the bill itself.

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Walk softly and carry a big net: **The global fight against rabies**

In honor of World Rabies Day Sept. 28, here's the story of one group trying to end the disease.

By Hannah Wagle

Few veterinary professionals in the U.S. are haunted by the specter of widespread human rabies deaths in their communities. This is not true the world over.

An estimated 59,000 human deaths occur globally every year, according to the World Health Organization (WHO)—the majority of which occur in Asia and Africa. Of those deaths, 99% result from the bite of a rabid dog. And 40% of them are children.

The mission behind the movement

In light of these findings, WHO has partnered with the Food and Agriculture Organization of the United Nations, the World Organization for Animal Health and the Global Alliance for Rabies Control to create a strategic plan that provides a phased, all-inclusive, intersectional approach to eliminate human deaths from rabies, according to a recent WHO report.

Called the Zero by 30 campaign, this plan aims to end human deaths from dog-mediated rabies by 2030, the report states. To reach the most underserved populations—those that are most impacted by canine-mediated rabies—the campaign will lead and strengthen elimination efforts, including strengthening both human and veterinary health systems globally.

The biggest hotspot for rabies is India, where thousands of people die of the disease and hundreds of thousands of dogs are inhumanely killed for fear of the disease. Mission Rabies, a branch of Worldwide Veterinary Service (WVS), aims to solve this. In 2014, a year after it launched, the charity set its sights on Goa, India. The challenge: to make it a rabies-free state.

In that year, according to the Mission Rabies website, volunteers sterilized 20,400 dogs across Goa in just six months. The next year they delivered 94,753 rabies vaccines across the Indian projects. Today they are working in six different countries.

"With volunteers from across the world getting to the heart of rabies-stricken countries and combating this disease with the combination of vaccination, education, technology, research and lots of hard work," the website states.

Managing and preventing the disease

In the poor, rural communities where rabies is most prevalent, medical care is often lacking.

>>> A volunteer vaccinates a dog in Goa, India

"Most of these patients are managed, at least initially, in peripheral or even village health [centers]," the WHO report states, "where human and material resources for basic wound care and rabies prevention are often extremely limited or absent. There is no effective curative treatment for rabies once clinical signs have appeared. Almost all patients with rabies will die."

What's more, many human rabies patients are turned away from hospitals and receive terminal care only from their families, according to the WHO report.

However, there is much healthcare providers can do to manage rabies victims' care, even with limited access to equipment and drugs, the WHO report says. This means adequate hydration, sedation and care in an appropriate medical facility—or at the very least, a calm, draft-free room with physical and emotional support.

For nonhuman rabies cases, of course, humane euthanasia is the only viable option.

On a brighter note, preventing rabies from spreading is the first step to fighting this deadly disease, and it's much more easily attained. This is where volunteers come in—wielding really, really big nets.

Mission Rabies' prevention operation is threefold: catching, vaccinating (and often also sterilizing), and educating the public about the disease.

"Most of the time, I have been working with one of the catching teams in the Mission Rabies base in Margao," says volunteer Gemma Annetts in a statement on the organization's website. Her team catches dogs "to bring back to the hubs, our Mission Rabies animal hospitals, for vaccination and sterilization, speaking to the local people and educating them as to what we are doing."

Many stray dogs that are already sterilized are vaccinated right there on the spot—the volunteers are trained to do this beforehand, Mission Rabies' website states. Otherwise, they are brought to professionals who will diagnose the disease and spay/neuter if necessary.

For education, Mission Rabies relies on community engagement. "Children are at high risk of dog bites and contracting rabies," the education page states. "The educational sessions are aimed to empower children, their teachers and their families with the knowledge to protect themselves from bites, preventing rabies and [saving] lives."

Today, the Mission Rabies education efforts in India have reached more than 15,000 children, along with hundreds of teachers and community leaders. According to the website, global education efforts have reached millions.

Education revolves around five key messages:

Rabies is serious. Knowing how the rabies virus is transmitted and affects the body is vita

Keep yourself safe. This means understanding canine behavior for safe and friendly interactions—and knowing the warning signs.

First aid. When a dog bite does occur, it's important to know the lifesaving steps to take.

Community protection. Educating the public on how vaccination works and encouraging community action.

Population management. With the help of WVS, this entails promoting humane dog population control and encouraging pet owners and authorities to spay or neuter dogs.

It seems like hard work, and it is, but the results are worth their weight in gold, according to volunteers and organizations alike.

"Rabies is preventable but the process of containment and eradication continues to be a Herculean, volatile and wholly baffling affair," says Mission Rabies volunteer Kaz in an online statement. "I highly recommend you get involved."

Hannah Wagle is a former associate content specialist for dvm360.

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[1]Pereira 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. [2]Beata C, Beaumont-Graff E, Coll V, et al. Effect of alpha-casozepine (Zylkene) on anxiety in cats. *J Vet Behav*. 2007;2(2):40-46. [3]Kruger JM, Lulich JP, MacLeay J, et al. Comparison 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. [4]Lulich 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.* 2013;243(8):1147-1153. Average 27 days in vivo study in urolith forming cats.

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dvm360 and VHMA announce practice manager **contest finalists**

At Fetch dvm360 in Kansas City, these 10 practice managers were announced as finalists in the dvm360/VHMA Practice Manager of the Year competition. *By Brendan Howard*

Certified veterinary practice managers, practice-owning managers, and a woman who keeps a humane society's veterinary team running smoothly are among the finalists for 2019 dvm360/VHMA Practice Manager of the Year. The 10 finalists were announced during Fetch dvm360 in Kansas City on August 23.

These finalists are "enhancing the image of the profession," says Jim Nash, MHA, CVPM, president of the Veterinary Hospital Managers Association (VHMA), the collaborators who help make the contest happen and provide membership perks and educational opportunities to the winner. "They're helping their practices thrive by demonstrating best practices and outstanding problem-solving skills. These managers are ushering in positive changes and deserve to be applauded for their hard work, persistence and professionalism."

The association's executive director, Christine Shupe, CAE, offers congratulations and good luck: "The VHMA is proud to collaborate with dvm360 to identify and recognize the movers and shakers in the field of veterinary practice management. The narratives presented by each finalist reinforce the pivotal role a manager plays in a practice's success."

Without further ado, here are the finalists, with comments that grabbed our attention from their contest entry forms.

Kerry Balding

Practice manager and co-owner at Paw Patch Veterinary Hospital in Indianapolis, Indiana

"In between the initial contact and the final sale of the practice, I was able to share with our hospital's potential buyer what I wanted for the practice: sustainability, pay raises and benefits for staff. I also asked about the possibility for myself and one of our long-term RVTs to buy in to the practice during the sale. I was told they'd done that with associates but never other employees, but it could likely be done.

"The final outcome was that the practice was sold. Our main doctor still owns a percentage, and an associate, an RVT and myself all own a percentage."

Kathy Bell, CVPM

Practice manager at Annville-Cleona Vet Associates in Annville, Pennsylvania

"To address increasing confidence levels in the staff related to client education, I role-play with them to increase knowledge and help them sound more confident when clients ask questions. In doing so, it's given the power back to our employees, and they feel more confident in having the tough conversations with clients in all areas."

Kat Burns, CVPM, CAWA

Interim CEO and director of veterinary services at Humane Society of Boulder Valley in Boulder, Colorado

"I think a good business leader understands when to say 'yes' to a wonderful idea and when to say 'no' when it's clear things aren't going as planned."

Patti Christie, CVT, CVPM

Practice manager at Minnehaha Animal Hospital and Pet Doctors Animal Clinic in Minneapolis, Minnesota

Her team didn't like that she was splitting her time between two hospitals: "I've since worked to train and empower team leads to step in and take care of many issues. I've seen it increase job satisfaction and engagement."

Kelli Geswein, CVPM

Practice manager at Cheat Lake Animal Hospital in Morgantown, West Virginia

"Overall, the transition to paper-lite went smoothly and the processes still work very well today. It's improved our workflow tremendously and saved a few trees in the process."

Rebecca Kuester, LVT

Practice manager at Creekside Animal Hospital in Macomb, Michigan

"We're not going to make our clients come in for a written prescription or charge for one to mail into the online pharmacy of their choice. We educate them on the dangers of counterfeit product and how products bought from us are guaranteed."

Danielle Matise

Practice manager at Garden Oaks Veterinary Clinic in Houston, Texas

Preparing for AAHA accreditation: "I recognized that all of our team members had different interests in the practice, and I invited them to each take ownership for the sections they were passionate about. This allowed us to divide and conquer while also letting team members become experts on their area of the hospital."

Jessica Molina, PHR, CVPM, CCFP

Hospital administrator at Lee Veterinary in Atmore, Alabama

"I developed a Superhero Academy. The staff was brought together to openly share their feelings about the culture and to then go around the room and describe the desirable culture ... [These descriptions] played an instrumental role in the development of our clinic's cultural vision."

Meg Oliver

Practice manager at Cicero Animal Clinic in Brewerton, New York

When looking to implement wellness plans, "lots of good advice poured in from managers all over the country. I spent hours on the phone with several of them, talking about their successes and failures with wellness plans."

Tammy Wages

Practice owner and medical manager at Cat Care of Fayette in Fayetteville, Georgia

Wages purchased her practice last year after 12 years working there. "On busy days, when we're unexpectedly short-staffed, I believe it's vital to step up and hop right into technician/receptionist mode no matter what position you hold in the clinic."

Texas veterinarian accused of rape indicted on drug charges

After accusations of using drugs from his practice to assault minors, Todd Glover has been charged with engaging in criminal activity.

A Galveston County grand jury recently indicted Santa Fe, Texas, veterinarian Todd Glover, DVM, on drug charges after he was accused of raping two teenagers at a Louisiana casino earlier this year, according to ABC13 News in Houston, Texas. He has been charged with engaging in organized criminal activity.

In early January, Dr. Glover was charged with rape and three counts of sexual battery after two 17-year-old girls made allegations of rape to police in December 2018, another ABC13 news story indicates. His license was suspended by the Texas Board of Veterinary Medical Examiners as a result of the accusations. Dr. Glover has denied the allegations and plans on appealing the decision, according to the report. He also faces a civil suit stemming from the incident.

"At this time the Animal Hospital of Santa Fe is business as usual," the hospital's Facebook page reported on its profile, where Dr. Glover is practice owner, after the accusations were made. "Our clients and patients mean a lot to all of the staff, and we don't plan on going anywhere at this time."

Dr. Todd Glover

The clinic also said it was imposing an immediate policy change on prescription refills. "The Animal Hospital of Santa Fe is requiring a 24-hour refill policy on all prescription medications in the clinic," reads a note posted in the clinic and online. "This is to reduce the risk of human error, ensure proper documentation [and] ensure proper approval, and this new policy should also help owners to request refills of their pet's medication prior to pets being out of them."

The charge for organized crime involves false prescriptions for amphetamine drugs, according to the indictment. Victoria Lyn and Justin Tyler Cyr have also been charged.

Many of Dr. Glover's clients are expressing support for him on social media.

"I've read each comment and in each of them, Dr. Glover's been judged and convicted without a trial," Susan Lichenstein-Evans writes in a comment on the hospital's Facebook page. "He's an awesome vet and helped us [through] a very sad time with our Lab, Stone. IF he is guilty, it will truly be a very sad loss for many, but can we all give the JUSTICE system time, [through] a trial and jury to make that decision?"

According to court records, Dr. Glover's bond was set at $200,000. Records show that he posted bond. Dr. Glover is expected to appear in court September 12.

Pet insurance hits $1.42B in premiums

Coverage for cats and dogs in the U.S. and Canada continues to grow, according to the NAPHIA, an industry association.

Pet insurance reached new heights in 2018, according to the North American Pet Health Insurance Association (NAPIA).

By the end of 2018, total premiums reached $1.42 billion in North America, and the number of insured pets in the United States was up 18%, to 2.16 million.

Pet owners continue to choose policies mostly for accident and illness coverage, which makes up 98% of coverage in the United States, but also includes insurance with embedded wellness.

The organization also shared the average accident and illness premiums:

- Dogs: $47/month in the United States, $61/month in Canada
- Cats: $29.50/month in the United States, $33/month in Canada.

NAPHIA is made up of pet insurance organizations in Canada and the United States and has been monitoring trends in its industry since 2013.

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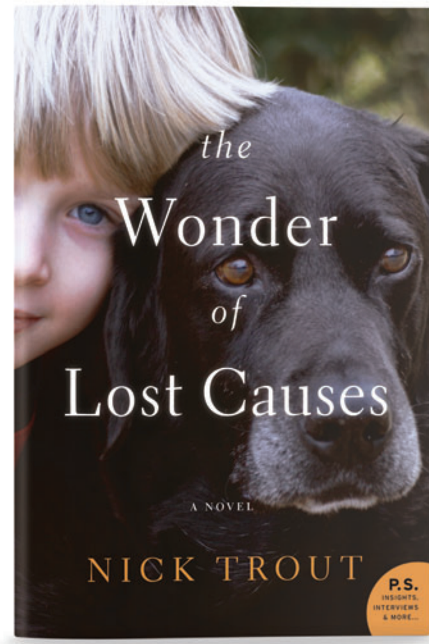

A veterinary way with words

Work and life inform veterinary surgeon Nick Trout's successful side gig: bestselling novelist.

By Don Vaughan

Many veterinary clients of Nick Trout, MA, Vet MB, DACVS, DECVS, are unaware that he is a successful novelist and nonfiction writer with six bestselling books to his credit. Those who are aware often behave in one of two ways, he says. They either grow nervous and ask, "You're not going to write about us, are you?" or they start acting peculiar in the hope of becoming a character in Dr. Trout's next novel.

Quirky clients, slightly altered, do occasionally end up in Dr. Trout's books, but only peripherally. He's more interested in telling a strong, compelling story about pets and their owners, and how that bond can change lives.

Nowhere is this more evident than in Dr. Trout's most recent book, *The Wonder of Lost Causes* (William Morrow). It tells the story of a single mother—who's also an animal shelter veterinarian on Cape Cod—and her chronically ill son and the "unadoptable" mutt that comes into their lives and changes everything for the better. The story is personal for the author because the 11-year-old protagonist has cystic fibrosis, as does Dr. Trout's daughter, Emily.

> *"I was brought up on the works of James Herriot, but that's not modern veterinary medicine, and I wanted the reader to see all that is new and exciting as well as the challenges faced by veterinarians today."*
> *—Dr. Nick Trout*

Inspired by work

Experience from decades of practice as staff surgeon at Angell Animal Medical Center in Boston, Massachusetts, drove Dr. Trout to try his hand at writing in the early 2000s. "Veterinary medicine provides us with endless amounts of fantastic material for a writer," he said in an interview with *dvm360*. "There are always elements of mystery, intrigue and drama as well as pathos and humor. It's all there."

Dr. Trout's first book, *Tell Me Where It Hurts*, was an account of memorable patients and unusual cases. It was rejected many times before finding a publisher and surprised Dr. Trout by becoming a *New York Times* bestseller. "That success was further inspiration to keep going," Dr. Trout notes.

After a couple more nonfiction books, Dr. Trout was encouraged by his agent and editor to try fiction.

"Fiction, for me, is much harder, because I have to create the plot as well as characters that will stand up and are believable and have distinct voices and make sense," Dr. Trout explains. "But the advantage of fiction is that I can cherry-pick certain aspects of a [real-life] story or a case that appealed to me or struck me as strange or interesting, and intersperse that component with other animals and characters."

A different voice

Dr. Trout tried a different narrative approach with *The Wonder of Lost Causes* by writing it in the first person from the perspectives of both the mother and son. "People ask me, 'Why did you write as a woman?'" Dr. Trout says. "I did it because I wanted the challenge and because, for the most part, the caregivers of chronically ill children are their mothers. I wanted to give them a voice, and I am thrilled by the positive feedback I have received from single mothers and mothers of children with chronic illnesses. They love the fact that I get it, because to some extent I've lived it."

As a surgeon attached to a busy practice, one of Dr. Trout's greatest challenges is finding time to write. He snags creative moments where he can—early in the morning, on the commute to work, on a family trip.

"One of the nice things about not being contracted to a writing deadline is, you can work on a project on your schedule, and it gets done when it gets done," Dr. Trout says. "It was harder when I was writing and the publisher would say, 'We need your next book in 18 months,' and I hadn't even thought about what it was going to be."

Dr. Trout works closely with his agent, Jeff Kleinman, during the early stages of each novel. They typically start with a general idea, then go back and forth until they have a solid outline, which Trout divides into chapters. Then he starts writing.

Veterinary medicine today

Though his primary goal is to entertain, Dr. Trout likes to use his fiction to inform readers about what a contemporary veterinarian's life is really like. "I was brought up on the works of James Herriot," he says. "That was a wonderfully romantic era in England, but that's not modern veterinary medicine, and I wanted the reader to see all that is new and exciting as well as the challenges faced by veterinarians today. I'm always trying to raise awareness of the challenges and the changing face of our profession."

Writing has allowed Dr. Trout to view himself and his work from a different perspective. For example, he says it's made him much more observant, particularly of the human-animal bond. "I'm looking for touching relationships, challenging relationships," he notes. "I'm looking at dynamics in the exam room in ways I didn't before."

Dr. Trout encourages colleagues with a dream to write to give it a try. "You'll face a lot of failure," he says, "but if you stick with it and get it done, there is a contentment and finality that goes with that. It's a very personal sense of accomplishment."

Donald Vaughan is a freelance writer based in Raleigh, North Carolina.

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3 things associates want in their next job

My unscientific survey reveals new and future veterinarians' wants and needs. *By Kyle Palmer, CVT*

Those of you in the know have already adjusted to the fact that today's new veterinarians have different expectations of their jobs than veterinarians did a few decades ago. But some practice owners and managers are having a difficult time figuring out how to accommodate the changing needs of the new generation.

I recently conducted a poll of newly graduated veterinarians, those graduating this year and current third-year students, and the results turned up responses that characterize this group's changing needs. Of those surveyed, 70% were practicing (or planned to practice) companion animal medicine, 25% fell into mixed-animal practice and 5% were planning on equine-only practice.

Respondents were given a list of 15 "employment amenities" and asked to weigh them individually. Here's what they say are their top three needs.

No. 1: Mentorship

The appropriately evolved employer has long recognized that mentorship is extremely valuable to new veterinarians and, more importantly, that the word "mentorship" means something very different than it did for practitioners 20 years ago.

Back in the day, mentorship was what most of us would actually call "orientation," and some doctors think the need for anything more is a sign of weakness. After all, they learned the "hard way"—a few bad outcomes were all they needed to prepare for the career ahead. What's changed, however, is the state of the human-animal bond. The stakes are high for the new veterinarian to be the "other family doctor" right out of the gate, and it doesn't happen without a network of support. It's no longer good enough to go into each day armed only with the *5 Minute Veterinary Consult* and an old version of Plumb's for reference. This need isn't driven by the new employee—it's a client expectation.

But what about equine? While companion animal practice seems well-designed for mentorship, with the norm being a team of support staff and practicing alongside one's peers, equine and mixed practice are far less so. Here, employers must commit to being there for their associates—answering the phone when they call, scheduling weekly doctor meetings to discuss cases and so on. In my 25 years of experience in equine mixed practice, I saw how damaging lack of mentorship was. Many associates hired to share in the equine workload shifted their focus away from that part of practice, and all but one ended up a small-animal-exclusive veterinarian.

No. 2: Great culture

The idea of workplace culture is a moving target: Is it rooted in the mission statement of a practice, helping to direct staff toward priorities in delivering veterinary care on a daily basis, or is it the way the team interacts with each other? Is it simply "professionalism" as traditionally defined, or is it how managers and employees treat each other during their daily routine?

This area is by far the most difficult for an employer to assess, address and evolve. In the survey responses, one young veterinarian wrote, "Quality of workplace interactions and coworker relationships is paramount. It seems more or less clear to me that mine is a 'work to live' generation and not the reverse. There is no appeal to working a high paying job if the workplace is not an enjoyable place to be."

But what about equine? Workplace culture may be more difficult to change for equine employers. There may not be much of a "workplace" at all if you're strictly ambulatory and the opportunities for large team involvement are few. Fortunately, culture can also include the way you define your relationships with clients, and this is an area where equine practices can focus. Shrink or eliminate the gap between how you practice and treat your clients and how your new associates do.

No. 3: Flexibility

While it may be true that veterinary medicine (and specifically equine practice) used to be defined by long hours, that simply isn't good enough anymore. Equine practices are the ones most likely to still be providing on-call emergency services, but that doesn't mean doctors should always work hours later than their companion animal peers. Today, associates—and frankly all employees—want to know they can be home at a reasonably predictable time to enjoy personal lives. It's not a ridiculous request, and it doesn't matter anymore that you worked until 8 p.m. every day for years because it was expected of you.

A 2019 DVM candidate wrote that "veterinary medicine is who I am, but I am also a partner, a parent and a friend. I need to have those other areas fulfilled to be an excellent, empathetic veterinarian for my clients."

Explore a four-day workweek, consider flexible start and finish times if it works better on a specific day, and let your associates schedule around the important events in their lives.

They've got big plans

Perhaps most interesting to potential employers is the fact that more than 35% of respondents said that, regardless of their satisfaction with a particular practice, they plan to gain a variety of experiences. Almost the same number said their ideal tenure at a particular practice is one to three years, suggesting that less than two-thirds of hired associates are even open to sticking around. That could make you cynical, but it should really make you think about ways you can prove that your practice is way better than the greener grass on the other side.

What was most surprising to me was that almost 50% of respondents said they wanted to eventually own a practice. I was under the impression that associates no longer had an interest in the time-honored system of partnership, but this could be a bright spot for many employers who are struggling to identify an exit plan.

As employers, most of you are facing a workforce that values things you couldn't have dreamt of early in your careers. You must be willing to see things through your employees' eyes.

Long-time dvm360 *magazine and* Firstline *contributor Kyle Palmer, CVT, is hospital manager for VCA Salem in Salem, Oregon, as well as a practice management consultant for a number of other hospitals.*

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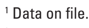

[1] Data on file.
[2] Data on file.
[3] Data on file.

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Most readers think saving Burpy was the **right call**

The tale of a veterinary associate who performed surgery when the client couldn't pay elicits strong opinions.

I own my small-town mixed practice in Wyoming. I deal with a lot of owners who do not have up-front cash. I took an oath and have strong compassion for the welfare of the animals I help. I tend to treat now to relieve the pain and suffering and worry about the money later. Yes, I do get shafted somewhat regularly, but I couldn't look at myself in the mirror if I euthanized an otherwise healthy animal over money. Most people do make regular payments on their bill. I understand "no credit" policies for vet hospitals; I just can't do it myself.

—Dr. W.D. (Buck) Root
Riverbend Veterinary Hospital
Douglas, Wyoming

This was a young dog and an old client who always paid her bills eventually. What else could Dr. Seasoned do? Be callous and euthanize a young dog?

I am a practice owner and I let the circumstances dictate what I will or will not risk regarding treatment and extending credit. Of course I have sometimes been burned. But the satisfaction of helping a client and their pet in need is priceless. I will also give good clients on limited income a break. One more reason to stay out of the corporate scenario, where it all seems to be about the money.

—Sophia Kaluzniacki, DVM
Green Valley, Arizona

Where it all started

These passionate notes about Burpy are in response to a recent "Old School, New School" column by Jeremy Campfield, DVM: "A Great Dane dilemma." Read it at dvm360.com/dane-dilemma.

GALLIPRANT® (grapiprant tablets)

For oral use in dogs only
20 mg, 60 mg and 100 mg flavored tablets
A prostaglandin E_2 (PGE_2) 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 Galliprant, 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. Only the 20 mg and 60 mg tablets of GALLIPRANT are scored. The dosage should be calculated in half tablet increments. Dogs less than 8 lbs. (3.6 kgs) cannot be accurately dosed. **The 100 mg tablet is not scored and should not be broken in half. 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:

Table 1. Adverse reactions reported in the field study.

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 to 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.[7] A statistically significant difference in the proportion of treatment successes in the GALLIPRANT group (63/131 or 48.1%) was observed compared to the vehicle control group (41/131 or 31.3%). GALLIPRANT demonstrated statistically significant differences in owner assessed pain and function. The results of the field study demonstrate that GALLIPRANT, administered at 2 mg/kg (0.9 mg/pound) once daily for 28 days, was effective for the control of pain and inflammation associated with osteoarthritis.

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November 2018
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Indication

Galliprant is an NSAID 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 to the left for prescribing information.

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Dr. Seasoned absolutely did the right thing. The business equation that's lacking in Mrs. Sterns' decision-making toolkit is one that assesses risk of:

> Not being paid
> A negative medical outcome
> Negative word of mouth that trashes the practice's reputation

versus …

> A successful medical outcome
> Getting paid for services
> Positive word of mouth that creates corporate reputational capital.

What (risk-averse) Mrs. Stern does not appreciate is that clients frequently still pay their bills and gush praise about a veterinary practice that does everything possible to save a pet—even when the effort is unsuccessful.

Nice job, Dr. Seasoned.

—Suzanne Parsel-Dew, DVM, MBA
Little Rock, Arkansas

Of course Dr. Seasoned did the right thing to think of her patient as an animal with feelings rather than a moneymaking widget. I am certain that most if not all "old school" veterinarians would have done the same thing and have performed similar services multiple times in their practice careers.

The current state of our once great, respected and compassionate profession truly sickens me! The No. 1 focus of the majority of today's practices is to increase the financial bottom line.

My suggestion to all new graduates is to take a step back in time and reflect on why they originally wanted to become a veterinarian. Most likely it was because they wanted to help animals. If that was their feeling then, they need to question what happened to those feelings now. So many pets today go untreated or are euthanized because owners cannot afford today's prices.

Practicing the "old school" way has given me great financial rewards, but it has also enabled me to reap benefits far more important and satisfying than any financial compensation.

—John C. Harroff, DVM
Concord, North Carolina

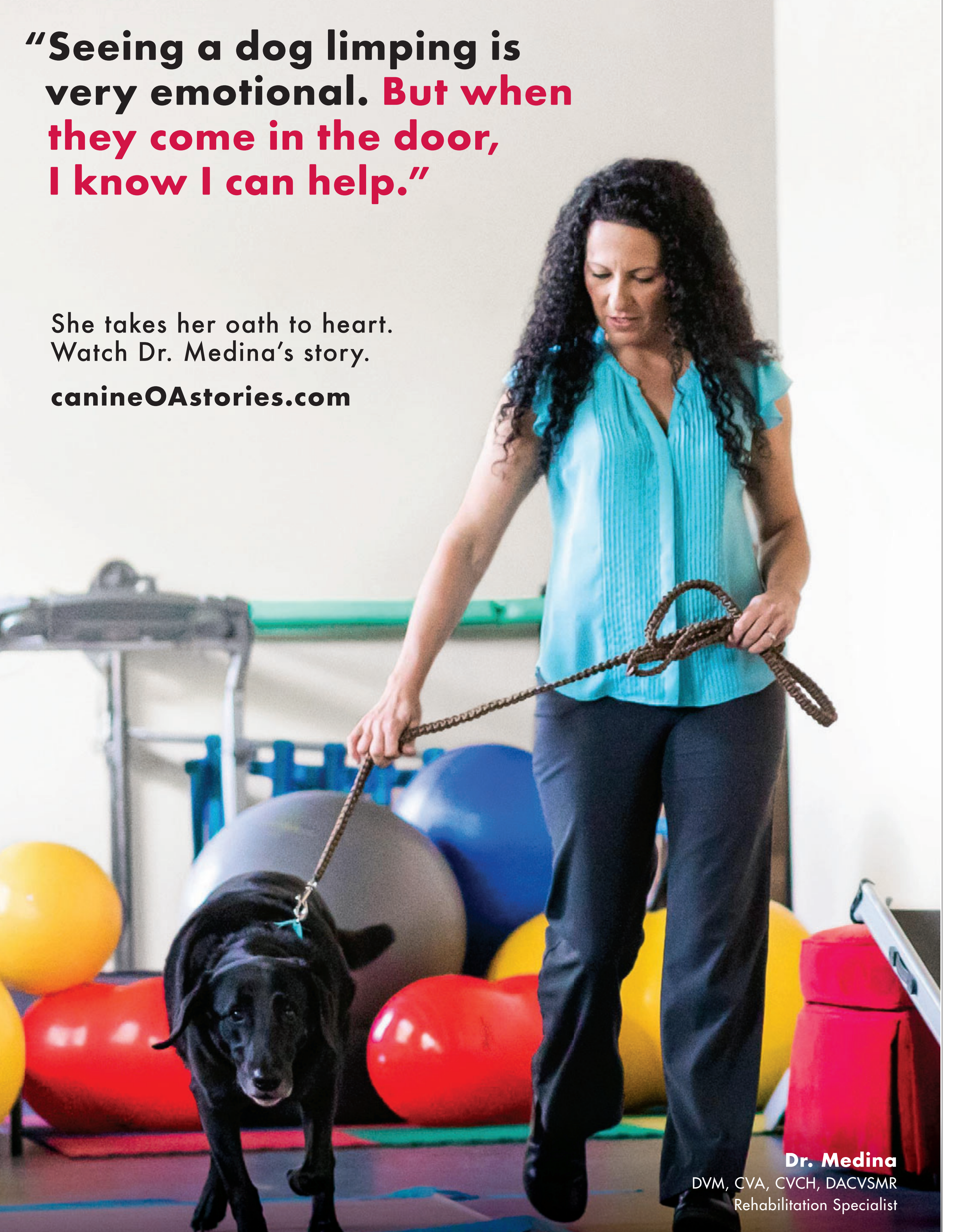
This story is the reason I left corporate practice. They try to use "good medicine" to bolster their bottom line, charging for unnecessary items or services. We were always understaffed and had a leaking roof and old broken equipment. All of our profits left our practice to pay the shareholders rather than being reinvested into the clinic.

I understand the need to be paid for services (I own my own practice), but with a longstanding good client, exceptions need to be considered. Otherwise this could lead to burnout or suicide, a growing concern in our profession.

—Name withheld

In my opinion Dr. Seasoned was being reckless. She does not own the practice; she does not have the right to decide the dog is going to surgery without the practice being paid. Certainly she should encourage Mrs. Giant to find, beg, borrow or steal the money—use CareCredit; use all resources—but ultimately, if she gets denied, why would I give her credit at our practice? I think this borders on stealing money on Dr. Seasoned's part.

—Dale Paley, DVM
Spartanburg, North Carolina



Editor's note
These edited letters to *dvm360* include discussion of suicide and mental health issues. If you're experiencing feelings of depression or suicidal ideation, please call the National Suicide Prevention Lifeline (800-273-TALK; 800-273-8255; suicidepreventionlifeline.org), or access our list of veterinary-specific mental health resources at **dvm360.com/mentalhealthlist**.

'4 eyes' is a misguided solution to suicide crisis

These *dvm360* readers say Dr. Andy Roark's suggestion to help prevent suicide by restricting access to certain drugs fails to address the "why?"

We are a collection of un-famous, regular veterinarians, and some of us have counseled colleagues through the darkest of times, helping friends escape suicide. Some of us have experienced the darkest of times, having escaped suicide. And we believe that while Dr. Andy Roark has done wonderful things to advance our profession, his recent piece advocating a "four eyes system" misses the mark. (*Editor's note: See* **dvm360.com/roark4eyes** *for our coverage and a link to the original article on drandyroark.com.*) We read Dr. Roark's list of contributing factors to the problem of suicide within our ranks—low pay, high debt, compassion fatigue, long work hours, work overload and poor work-life balance—and continued reading as he suggested the next step is restricted access to controlled drugs. What?

His suggestion fails to address the "why?" that motivates the veterinarian to use controlled drugs in the first place. It aims at the periphery of the problem without actually addressing root causes. It has, as its foundation, emotional anecdotes and unscientific surveys.

Because we are expected to take Dr. Roark's anecdotes as truth, we submit our own experiences as truth as well, including the fact that a mere one of the suicides within our collective circle of colleagues involved the individual using drugs obtained from work. This was carefully planned and no amount of "four eyes" would have stopped it.

Dr. Roark could work to compile data to show how expanding class sizes and increasing tuition at a rate dramatically outpacing inflation is setting up graduates for neither a prospect at debt-free life nor any semblance of work-life balance. Or he could participate with us as we formulate ways for colleges to more strategically select from their candidates. Or he could participate in brainstorming about combating the stigma associated with therapy or hospitalization for mental health dysfunction. Or he could challenge AVMA PLIT to defend members with a history of mental health hospitalization or alcohol/drug rehabilitation. Or he could suggest to our representative associations that they advocate for us by combating cyberbullying and demonstrating the value of a sound, scientific veterinarian to the broader public. Any of these, and certainly more, will go much further in addressing the factors Dr. Roark listed than "four eyes" on the lock box.

—Suzanne Cosentino, DVM, Missouri; Valerie Fournier, DVM, California; Ryan Gates, DVM, Ohio; Harold Jones, DVM, Florida; Richard McAroy, DVM, New Hampshire; Brenda Motsco, DVM, Ohio; Michael New, DVM, Alaska; Grace Shook, DVM, Florida; Scott Vaughan, DVM, North Carolina

Better drug control helps

Another viewpoint is that making access to dangerous drugs more difficult is a short-term—but important—part of the overall solution.

As someone who's had conversations with dozens of suicidal veterinarians, I can tell you: Controlled drugs are often the plan. This statistic was borne out in the Centers for Disease Control and Prevention's recent analysis of veterinary suicide as well as literature from other countries. The sobering truth is that self-poisoning by euthanasia solution is either the first- or second-most-common method of suicide in veterinarians, depending on the study you read.[1-3]

No single program will be the solution, and that's absolutely true here. But you can't solve the problem if someone is dead.

Sure, reducing access to means does not fix why the person is suicidal. It doesn't handle the circumstances that led them to suicidal thoughts and plans. But it does give us time to address what's happening. The road to recovery is often long, and we need to keep a person physically safe while we address the reasons they got to that dark place to begin with.

That's why I think programs like "4 eyes" are so important. In this program, Dr. Andy Roark and his team campaign for us all to restrict access to controlled drugs unless two people are present. This isn't the whole solution, but it's part of it. This is a basic safety measure that many of us can put in place to help keep our colleagues safe while we seek to address some of the very real problems we face as a profession. No single program will be the solution, and that's absolutely true here. But you can't solve the problem if someone is dead.

I understand criticism of the campaign. This solution does nothing to reduce the suffering of someone with suicidal ideation, and it adds inconvenience to our already difficult and taxing jobs. Dr. Roark's solution doesn't address moral stress or overwork or cyberbullying or dozens of other things. It doesn't provide mental health care. But it does give us time to work on those things. And I want to assure you that there are many of us working on those other problems.

We shouldn't view the "4-eyes" campaign as a single solution, but rather a tool in a growing toolbox of programs that aim to address this crisis.

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—Carrie Jurney, DVM, DACVIM (neurology), CCFP; vice president, Not One More Vet

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Keep DVMs **aboard ship** during a corporate buyout

To secure the best price from a consolidator, sellers need associates who will stay on after the transition.

Corporate veterinary hospital consolidators know that job one in any practice sale is to lock down commitments from the practice doctors. The veterinarians are the revenue-generating power plants of target clinic acquisitions, and, as such, their future employment status must quickly be ascertained and, if possible, controlled. If a corporate buyer can't get sufficiently stout commitments from existing associates, it likely will steer away from the acquisition entirely. Here's what a consolidator does to manage this at various stages of a practice sale:

Tactic No. 1: Motivate the seller to add more associates

It's widely recognized that most corporate buyers are looking for hospitals with top-line revenue at or above seven figures—the higher, the better. But they're not just avoiding smaller clinics. There's a less obvious reason consolidators prefer larger hospitals.

They know that if a hospital is earning $1 million because the DVM who owns it is an efficient and high-producing one-man show, that efficiency isn't going to be much help when the owner leaves after the mandatory two-to-four-year "golden handcuffs" transition phase. Without another doctor in the mix, there will be no face recognition by clients when the seller finally leaves and someone new takes over. Knowing that, a typical consolidator will require that a selling owner hire a second DVM, even if that step causes bottom-line profit to drop.

Additionally, corporate buyers will require that the existing practice owner negotiate a robust noncompete commitment to be included in that second DVM's contract. The practice owner's juicy buyout offer will be contingent on (1) lining up a second doctor and (2) getting that doctor to sign an assignable (transferrable-to-the-corporation) noncompete.

Tactic No. 2: Get the seller to 'buy' associates' continued employment

As I mentioned, corporate "roll-ups" (Wall Street's term for consolidators like this) frequently dangle before sellers an excellent purchase price for their hospitals, but only after they get X number of associates to enter into employment contracts with the new owner/consolidator with bulletproof noncompete terms.

I've seen many associate DVMs involved in a corporate transition agree to stay on with the new owner simply because it's easier not to change jobs. Others remain because they're already subject to transferrable noncompete agreements they don't want to challenge. Others agree to work for the new corporate owner because they know other doctors who've worked for the same consolidator and had acceptable, or even excellent, experiences doing so.

However, a significant number of associates have successfully parlayed their skills and experience into cash rewards in exchange for their commitment to continue working for the new owner looking to buy out their old boss. This arrangement can work a couple different ways:

Scenario 1: Retention bonus. The old owner tells one or more of the top-producing doctors they can get a retention bonus if they sign up to work for the new corporate owner for one, two or three years after the practice sale closes. I've seen general practitioners offered more than a year's salary to stay on. It depends on how badly the seller wants the deal and how much of the sale price he or she will fork over, in the form of bonuses, to associates to make that happen.

Obviously, the seller can't handcuff the associate who receives such a windfall to the operating table or

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exam room door handle. Instead, the seller offers a cash down payment (maybe a third of the total money) plus a written contract stating that the associate will receive the balance at the end of the promised employment term. Frequently, the seller's attorney will hold the balance of the funds in an escrow account for release at the end of the employment commitment.

Scenario 2: Associate buy-in. A veterinary consolidator can also engender loyalty by offering an associate partial ownership in the clinic about to be purchased. The ownership offer is almost always a minority position, and it invariably comes with a number of caveats and contingencies that need to be considered carefully (preferably with professional legal and accounting guidance) before being accepted. The strings attached to these associate ownership agreements can include:

- An offer to become a "junior partner" that involves an up-front cash commitment by the associate.
- A consolidator retaining all voting rights, making any partnership strictly a financial one, with the associate having no say over operations.
- A price for shares or equity in the clinic that's unjustifiably expensive, particularly if cash or salary reduction is required to participate.
- A "mandatory sell-back" provision that requires the associate to sell back his or her equity upon leaving the clinic—often at an unjustifiably low price.
- A stipulation that the corporate buyer may end up selling out to another, larger roll-up. This might be profitable to the associate holding equity, but it might not. If Corporation No. 1 fails to operate the clinic efficiently, a stock-holding associate may get hammered should the selling price to Corporation No. 2 be substantially lower than what the associate anticipated—or what Corporation No. 1 guesstimated when it was selling the idea of participation to the associate in the first place.

Employee beware

In the final analysis, it's always wise for veterinary associates to evaluate every aspect of the potential marketability of any clinic they work for, as well as the skills and experience they bring to the table, when accepting a position at an independently owned veterinary clinic that could eventually be sold. There may be nothing to prevent your employer from selling at a moment's notice—it could be a phenomenal price, a health crisis or just a sudden decision to shift careers.

If associates keep these possibilities in mind, they can maximize their own potential career and financial benefits suddenly arising from such a sale. They'll need to figure out the best way to handle the old boss as well as how to negotiate with the potential new one—especially when the sale is about to close and the whole deal balances on whether the buyer can keep the old DVM engines in place and running on all cylinders.

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

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Insurance won't cover a **DCM diagnosis**?

Things get complicated when a pet insurance company won't cover an asymptomatic patient eating a grain-free diet and at risk for dilated cardiomyopathy. It's a tough line to draw, but is this where to draw it?

Our tale of grain-free diets, dilated cardiomyopathy and ultrasounds all starts with pet owner Lisa Connor coming in for an appointment with Dr. Esther Stone to examine Brutus, her 150-pound Great Dane. Lisa lives alone with Brutus, but she works from home, which allows her to shower affection on her canine housemate. Her limited income hasn't stopped her from providing Brutus with a comfortable lifestyle: He sees the veterinarian on a regular basis, has pet health insurance and eats a high-quality dog food … or so she thought.

Five years ago, when Brutus came into her life, Lisa researched the best of everything for her new pet. She familiarized herself with the positive attributes of grain-free, high-quality dog food. At the time, grain-free, vegetable-laden diets were well respected, healthy and growing in popularity. Recently, Lisa has read about the newly recognized relationship between grain-free dog food and the serious heart abnormality of dilated cardiomyopathy (DCM). Once the FDA publicized the link between these diets and heart disease, she decided she needed to bring Brutus into the clinic for an exam.

Diagnosing without clear signs

Brutus has eaten a grain-free dog food exclusively for five years. Dr. Stone examines the dog and finds him to have a normal gross physical exam, but Dr. Stone explains that a cardiac condition can't be detected with a conventional physical exam. In fact, listening to the dog's heart and even taking chest radiographs may not reveal the presence of DCM. The diagnosis requires a cardiac ultrasound examination, Dr. Stone explains. That would produce definitive results, but it's costly. Lisa confidently explains that her pet health insurance should help pay for it.

However, when Dr. Stone contacts Lisa's pet insurance company on her behalf, she's told that a cardiac ultrasound won't be covered because Brutus presented with no signs of potential cardiac disease. Dr. Stone explains her patient's risk factors and that not screening a large-breed dog on a six-year diet of exclusively grain-free dog food via ultrasonography would be negligent care. The insurance company representative doesn't disagree but insists they can't provide coverage for asymptomatic patients.

Judging on pet-owner-reported signs

Lisa is understandably angry and frustrated, as she doesn't have the money for the ultrasound. Dr. Stone tells her to stop feeding the grain-free food immediately and shares with her signs to watch for that would require Brutus to get further medical assistance. Lisa takes Brutus home, writes a passionate letter to the pet insurance company and follows Dr. Stone's direction to change the dog's food.

Two weeks later, Brutus shows up again in Dr. Stone's office. Lisa tells her that Brutus has started coughing and seems to have decreased stamina. Dr. Stone examines the patient and accepts the pet owner's description of the dog's signs as credible. She orders a cardiac ultrasound, which is now covered by pet insurance. Results show some minor age-related heart enlargement but no other abnormalities. Lisa is relieved that her dog has no signs of grain-free-food–related DCM.

So, do you suspect Lisa fudged the signs? Did she manipulate her veterinarian into ordering a cardiac ultrasound by fraudulent means? Should Dr. Stone have seen the sudden onset of reported cardiac symptoms by the owner as a sham to get around the pet insurance company's first refusal to cover the ultrasound? Let us know at **dvm360news@mmhgroup.com**.

Dr. Rosenberg's response

It's unfortunate that grain-free-food–related DCM can only be definitively diagnosed by costly cardiac ultrasonography. Hopefully, the specific shortcomings in these diets can be corrected so the problem disappears and the insurance coverage, or lack of it, becomes a moot point.

That said, this is a real-time problem that must be dealt with immediately. When unique medical conditions arise, the pet owner, veterinarian and pet insurance company must work together to assist the patient. It's true that many medical conditions are declined coverage when a patient is asymptomatic and only has the potential to develop a disease. This, however, is a unique situation involving fatal consequences when not addressed.

I personally feel that pet insurance companies should cover the ultrasound procedure in these cases and make the necessary actuarial adjustments in their premiums to minimize any losses. The last thing that anybody wants is a pet owner or veterinarian feeling that they have to skirt the truth to get the care a pet needs.

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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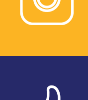

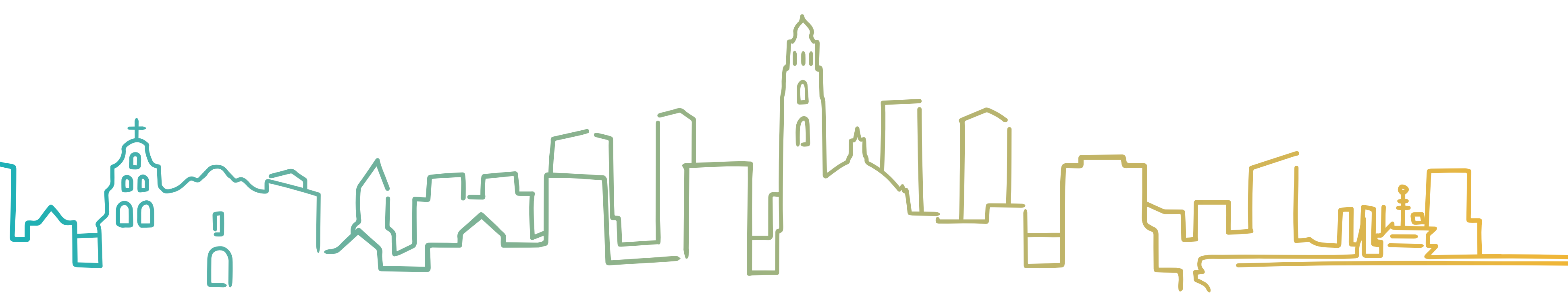

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AVMA task force targets **technicians**

The group seeks to improve technician utilization in practices.

Technicians are vital to a veterinary practice, and to improve how their efforts are utilized, a task forced convened by the AVMA Board of Directors will seek to develop a plan, according to a recent release. As part of this initiative, the group will take into account the importance of financial and career stability, effective task delegation and the wellbeing of both veterinary technicians and practices. They have until Dec. 31 to provide a report to the board, the release states.

There will be 10 voting task force members, according to the release. Those members will include a credentialed veterinary technician, a technician member of the NAVTA Committee on Veterinary Technician Specialties, a NAVTA Executive Board member, a veterinarian and veterinary technician member of the AVMA Committee on Veterinary Technician Education and Activities, a nominee from the American Association of Veterinary State Boards' Veterinary Technician National Exam Committee, and an at-large veterinary practitioner, among others.

In addition, two nonvoting liaisons will be a member of the AVMA Board of Directors and a member of the AVMA House of Delegates (HOD), according to the release. Members were to be selected mid-May.

During its regular winter session at the beginning of this year, the HOD discussed the topic of technician utilization in veterinary practice, the release states. The topic sparked discussion on how to encourage the consistent use of credentialed veterinary technicians as part of a healthcare team, the lack of recognition for technicians, and the differences between employees trained on the job and credentialed technicians, along with high turnover rates, low job satisfaction and low wages for technicians. The conversation led to the recommendation that the Board of Directors consider a task force, and that a report be shared with the HOD within a year.

According to the release, the task force will provide ideas by the end of the year on actions to be taken to enhance the use of veterinary technicians as part of the veterinary healthcare team. Prior to its 2020 meeting, the plan is to distribute the report to the HOD.

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All dogs should undergo a thorough history and physical examination before the initiation of NSAID therapy. Appropriate laboratory tests to establish hematological and serum biochemical baseline data prior to, and periodically during, administration of any NSAID is recommended. **Owners should be advised to observe for signs of potential drug toxicity (See Adverse Reactions, Animal Safety and Post-Approval Experience) and be given an "Information for Dog Owners" Sheet.**
PRECAUTIONS: Dogs needing a dose of less than 12.5 mg can only be accurately dosed through the use of the 12 mg tablet, which can be broken in half to provide 6 mg. Do not attempt to accurately dose smaller dogs through the use of breaking larger tablets. **Inaccurate dosing may result in adverse drug events (See Adverse Reactions, Animal Safety, and Post-Approval Experience)**.
Since NSAIDs possess the potential to produce gastrointestinal ulceration and/or perforation, concomitment use of DOXIDYL™ tablets with other anti-inflammatory drugs, such as NSAIDs or corticosteroids, should be avoided.
As a class, NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. The following collective group of clinical signs has been reported with some serious gastrointestinal events, in decreasing order of reported frequency: anorexia, tachycardia, tachypnea, pyrexia, ascites, pale mucous membranes, dyspnea. In some cases, circulatory shock, collapse and cardiac arrest have also been reported. Sensitivity to drug-associated adverse events varies with the individual patient. Dogs that have experienced adverse reactions from one NSAID may experience adverse reactions from another NSAID. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular and/or hepatic dysfunction. Plasma levels of deracoxib may increase in a greater than dose-proportional fashion above 8 mg/kg/day. Deracoxib tablets have been safely used during field studies in conjunction with other common medications, including heartworm preventatives, anthelmintics, anesthetics, pre-anesthetic medications, and antibiotics. If additional pain medication is needed after a daily dose of DOXIDYL tablets, a non-NSAID/non-corticosteroid class of analgesic may be necessary. It is not known whether dogs with a history of hypersensitivity to sulfonamide drugs will exhibit hypersensitivity to DOXIDYL tablets.
The safe use of deracoxib tablets in dogs younger than 4 months of age, dogs used for breeding, or in pregnant or lactating dogs has not been evaluated.
NSAIDS may inhibit the prostaglandins which maintain normal homeostatic function. Such anti-prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Appropriate monitoring procedures should be employed during all surgical procedures. The use of parenteral fluids during surgery should be considered to decrease potential renal complications when using NSAIDs perioperatively. Concurrent administration of potentially nephrotoxic drugs should be carefully approached.
The use of concomitantly protein-bound drugs with deracoxib tablets has not been studied in dogs. Commonly used protein-bound drugs including cardiac, anticonvulsant and behavioral medications. The influence of concomitant drugs that may inhibit metabolism of deracoxib tablets has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy. Consider appropriate washout times when switching from one NSAID to another or when switching from corticosteroid use to NSAID use.
Effectiveness: Deracoxib tablets were evaluated in masked, placebo-controlled multi-site field studies involving client-owned animals to determine effectiveness.
Osteoarthritis Pain and Inflammation Field Study: Two hundred and nine (209) client-owned dogs with clinical and radiographic signs of osteoarthritis of at least one appendicular joint were enrolled in this study. A total of 194 dogs were included in the safety evaluation and a total of 181 dogs were included in the effectiveness evaluation.
The effectiveness of deracoxib tablets in the control of pain and inflammation associated with osteoarthritis was demonstrated in a placebo-controlled, masked study evaluating the anti-inflammatory and analgesic effects of deracoxib tablets. Tablets were administered by the owner at approximately 1-2 mg/kg/day for forty-three (43) consecutive days.
In general, statistically significant ($p<0.05$) differences in favor of deracoxib were seen force plate parameters (vertical impulse area, peak vertical force) and owner evaluations (quality of life, lameness and overall level of activity).
The results of this field study demonstrate that deracoxib tablets, when administered at 1-2 mg/kg/day for 43 days are effective for the control of pain and inflammation associated with osteoarthritis.
ADVERSE REACTIONS: Deracoxib was well tolerated and the incidence of clinical adverse reactions was comparable in deracoxib and placebo treated animals. A total of 209 dogs of 41 breeds, 1-14 years old, weighing 17-177 lbs were included in the field safety analysis. The following table shows the number of dogs displaying each adverse reaction.

Abnormal Findings in The Osteoarthritis Field Study[1]		
Clinical Observation	**Deracoxib Tablets (N=105)**	**Placebo (N=104)**
Vomiting	3	4
Diarrhea/Soft Stool	3	2
Weight Loss	1	0
Abdominal Pain (Splinting)	0	1
Seizure	1	0
Lethargy	0	1
Pyoderma/Dermatitis	2	0
Unilateral Conjunctivitis	1	0
Scleral injection	0	1
Hematuria/UTI	1	0
Splenomegaly*	1	0
Grade II Murmur Systolic	1	0

[1]Dogs may have experienced more than one adverse reaction during the study.
*This dog was less active and eating less on enrollment, with elevated WBC, amylase, and AST and died 1 month after exiting the study. The dog was withdrawn from the study on Day 17 with anorexia, lethargy and a suspicion of diarrhea. Follow-up laboratory analyses revealed hypoalbuminemia, hyperphosphatemia, elevated AST and decreased BUN. Follow-up treatment included other anti-inflammatories and antibiotics.
Complete blood count, serum chemistry, and buccal bleeding time analysis were conducted at the beginning and end of the trial. Mean values of all CBC and chemistry results for both deracoxib and placebo-treated dogs were within normal limits. There was no statistically significant difference in the buccal bleeding time between deracoxib and placebo-treated dogs before or after the study, and all results remained within normal limits (less than 5 minutes).
The results of this field study demonstrate that deracoxib is safe and effective for the control of pain and inflammation associated with osteoarthritis in dogs.
During this trial, dogs were safely treated with a variety of commonly used medications, including antibiotics, anti-parasiticides, topical flea adulticides and thyroid supplements.
The results of this field study demonstrate that deracoxib tablets are well-tolerated when administered at 1-2 mg/kg/day for up to 43 days for the control of pain and inflammation associated with osteoarthritis.
Postoperative Orthopedic Pain and Inflammation Field Study: In this study, 207 dogs admitted to veterinary hospitals for repair of cranial cruciate injury were randomly administered deracoxib tablets or a placebo. Drug administration started the evening before surgery and continued once daily for 6 days postoperatively. Effectiveness was evaluated in 119 dogs and safety was evaluated in 207 dogs. Statistically significant differences in favor of deracoxib tablets were found for lameness at walk and trot, and pain on palpation values at all post-surgical time points. The results of this field study demonstrate that deracoxib tablets, when administered daily for 7 days are effective for the control of postoperative pain and inflammation associated with orthopedic surgery.
Adverse Reactions: A total of 207 dogs of forty-three (43) different breeds, 1-15 years old, weighing 7-141 lbs were included in the field safety analysis. The following table shows the number of dogs displaying each adverse reaction.

Abnormal Health Findings in The Postoperative Orthopedic Pain Field Study[1]		
Clinical Observation	**Deracoxib Tablets (N=105)**	**Placebo (N=102)**
Vomiting	11	6
Diarrhea	6	7
Hematochezia	4	0
Melena	0	1
Anorexia	0	4
Incision Site Lesion (drainage, oozing)	11	6
Non-Incision Site Lesions (moist dermatitis, pyoderma)	2	0
Otitis Externa	2	0
Positive Joint Culture	1	0
Phlebitis	1	0
Hematuria	2	0
Conjunctivitis	1	2
Splenomegaly	1	0
Hepatomegaly	1	0
Death	0	1

[1]Dogs may have experienced more than one adverse reaction during the study.
This table does not include one dog that was dosed at 16.92 mg/kg/day for the study duration. Beginning on the last day of treatment, this dog experienced vomiting, diarrhea, increased water intake and decreased appetite. Hematology and clinical chemistry values were unremarkable. The dog recovered uneventfully within 3 days of cessation of dosing.
Incisional drainage was most prevalent in dogs enrolled at a single study site. There were no statistically significant changes in the mean values for hepatic or renal clinical pathology indices between deracoxib tablet- and placebo-treated dogs. Four deracoxib tablet-treated dogs and two placebo-treated dogs exhibited elevated bilirubin during the dosing phase. One deracoxib tablet-treated dog exhibited elevated ALT, BUN and total bilirubin and a single vomiting event. None of the changes in clinical pathology values were considered clinically significant.
The results of this clinical study demonstrate that deracoxib tablets, when administered daily for 7 days to control postoperative pain and inflammation in dogs, are well tolerated.
Postoperative Dental Pain and Inflammation Field Study: In this study, 62 dogs admitted to veterinary hospitals for dental extractions were randomly administered deracoxib tablets or a placebo. Drug administration started approximately 1 hour before surgery and continued once daily for 2 days postoperatively. Effectiveness was evaluated in 57 dogs and safety was evaluated in 62 dogs. There was a statistically significant reduction ($p=0.0338$) in the proportion of dogs that required rescue therapy to control post-surgical pain in the deracoxib treated group compared to the placebo control group. Pain assessors used a modification of the Glasgow Composite Pain Scale (mGCPS) to assess pain.[3] A dog was rescued if it scored >4 on the combined mGCPS variables of Posture/Activity, Demeanor, Response to Touch, and Vocalization, or if the investigator determined at any time that pain intervention was needed.
The results of this field study demonstrate that deracoxib, when administered once daily for 3 days, is effective for the control of postoperative pain and inflammation associated with dental surgery.
Adverse Reactions: A total of 62 male and female dogs of various breeds, 1.5-16 years old, were included in the field safety analysis. The following table shows the number of dogs displaying each adverse reaction. Digestive tract disorders (diarrhea and vomiting) and systemic disorders (abnormal clinical chemistry results) were the most frequently reported findings. There were no distinct breed, age or sex predilections for adverse reactions that were reported. No dogs were withdrawn from the study due to the occurrence of an adverse reaction.

Abnormal Health Findings in The Dental Pain Field Study[1]		
Clinical Observation	**Deracoxib Tablets (N=31)**	**Placebo (N=31)**
Vomiting	4	1
Diarrhea/soft stool	3	1
Regurgitation	0	2
Increased AST[2]	3	0
Increased ALT[2]	1	0
Hematuria	1	0
Leukocytosis	1	1
Neutrophilia	1	1
Lameness	1	0
Facial Swelling	0	1
Tachycardia	0	1

[1]Dogs may have experienced more than one adverse reaction during the study.
[2]Included animals with results over 2x the high normal.
Post-Approval Experience (Rev. 2010): The following adverse events are based on post-approval drug experience reporting. Not all adverse reactions are reported to the FDA CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using this data. The following adverse events are listed in decreasing order of reporting frequency.
Gastrointestinal: vomiting, diarrhea, hypoalbuminemia, melena, hematochezia, elevated amylase/lipase, hematemesis, abdominal pain, peritonitis, decreased or increased total protein and globulin, gastrointestinal perforation, gastrointestinal ulceration, hypersalivation.
General: anorexia, depression/lethargy, weight loss, weakness, fever, dehydration.
Hepatic: elevated liver enzymes, hyperbilirubinemia, icterus, ascites, decreased BUN.
Hematologic: anemia, leukocytosis, leukocytopenia, thrombocytopenia.
Neurologic: seizures, ataxia, recumbency, trembling, confusion, collapse, hind limb paresis, nystagmus, proprioceptive disorder, vestibular signs.
Behavioral: nervousness, hyperactivity, aggression, apprehension.
Urologic: elevated BUN/creatinine, polydipsia, polyuria, hyperphosphatemia, hematuria, low urine specific gravity, urinary incontinence, renal failure, urinary tract infection.
Dermatologic: pruritus, erythema, urticaria, moist dermatitis, facial/muzzle edema, dermal ulceration/necrosis.
Respiratory: panting, dyspnea, epistaxis, coughing.
Cardiovascular: tachycardia, heart murmur, bradycardia, arrest.
Sensory: vestibular signs, glazed eyes, uveitis.
Ophthalmic: blindness, mydriasis, conjunctivitis, keratoconjunctivitis sicca, uveitis.
In some cases, death has been reported as an outcome of the adverse events listed above.

[3] Holton, L., Reid, J., Scott, E.M., Pawson, P. and Nolan, A. (2001). Development of a behaviour-based scale to measure acute pain in dogs. Veterinary Record, 148, 525-53.

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MEDICINE | Feline medicine

Have you mastered these five **feline emergency** procedures?

No matter the practice, you must feel comfortable taking certain lifesaving steps. Here are the emergency procedures every practitioner who treats cats should know. *Karen Todd-Jenkins, VMD*

When a critically ill patient needs a lifesaving procedure, your skills can make all the difference. According to critical care specialist Justine Lee, DVM, DACVECC, DABT, there are five important procedures that every veterinarian should learn to perform in cats. In a presentation at Fetch dvm360 conference in Baltimore, Dr. Lee explained why these procedures are critical and offered tips for improving your skills.

If you don't have as much confidence as you'd like, practice, Dr. Lee advised. "For almost any procedure, the more prepared you are and the more you set up ahead of time, the easier the procedure will go," she said. "Also, if you perform one of these procedures in a critically ill patient that's dying in front of you, and you haven't done [the procedure] before, the likelihood of a successful outcome is poor unless you've practiced. When in doubt, try to practice on a deceased patient so you're proficient."

1. Gaining venous access

Dr. Lee described alternative venous access options for critical patients, beginning with a quick method for doing a jugular cutdown. The procedure begins with a surgical prep over the jugular vein. Next, pull the skin slightly lateral and use a scalpel (preferably a No. 11 blade) to make a small incision parallel to (not over) the jugular vein. Use the "window" to visualize the jugular vein and place a peripheral intravenous catheter. Once the catheter is in place, place a small dab of surgical glue or a few simple interrupted sutures to close the skin incision.

In kittens, Dr. Lee recommended using a 23-gauge butterfly catheter instead of a jugular catheter. "Most of us can get a 23-gauge butterfly into the jugular," she said. "I'll aggressively volume-resuscitate these kittens to increase their blood pressure. Then, I can easily get a cephalic catheter in."

Central lines are another option, but they're often overlooked because

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DERMATOLOGY M4
6 questions every practitioner should ask before treating otitis externa

DENTISTRY M6
The ABCs of veterinary dentistry: 'S' is for supernumerary teeth

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people think they're complicated or unnecessary. However, Dr. Lee noted that they're helpful for maintaining hydration in critically ill patients, facilitating phlebotomy or administering drugs that can cause perivascular irritation. She noted that if you have the skill to place a jugular catheter, you can place a central line.

2. Thoracentesis and abdominocentesis

When faced with a dyspneic cat, it's hard to resist jumping to aggressive diagnostics and treatments to get answers and stabilize the patient quickly. Dr. Lee recommends a more conservative initial approach. "When it comes to a dyspneic cat, a hands-off approach is best," she advised. "These cats are already stressed, so don't manhandle them to get an intravenous catheter in or take an x-ray."

Dr. Lee noted that she might give these patients something intramuscular to calm them, do a very brief exam, and put them on flow-by oxygen or place them in an oxygen cage. She also prefers to administer drugs via inhalation to dyspneic cats when possible, as these drugs have limited systemic effects and are delivered directly into the lungs. "I think every practice should have a fluticasone inhaler and an albuterol inhaler," she said. When using an AeroKat device, she recommended filling the chamber first (i.e. with three puffs of inhalant) and then placing the chamber directly to the cat's face, as most cats resent the mist being sprayed into the device while it's on their face.

"When it comes to a dyspneic cat, a hands-off approach is best. These cats are already stressed, so don't manhandle them to get an intravenous catheter in or take an x-ray."

—Dr. Justine Lee

Dr. Lee reminded the audience that pleural effusion is the number one cause of dyspnea in cats, and congestive heart failure and cancer are the two most likely differentials. Other potential causes include pyothorax, chylothorax and asthma, she said. The supplies needed for thoracentesis are readily available at most practices: a 12- to 20-ml syringe, a three-way stopcock, a 22-gauge needle (possibly 1.5 inches long, depending on the cat) or butterfly catheter, an extension set and tubes for collecting fluid samples. Dr. Lee suggested that some cats may need light sedation for the procedure.

The preferred location for thoracentesis is the seventh to ninth intercostal space and cranial to the rib to reduce the likelihood of hitting a blood vessel. "If the cat is obese and you can't feel the ribs, find the xiphoid and draw an imaginary line up [the side of the chest]. That's usually the eighth intercostal space," Dr. Lee said. Administering flow-by oxygen during the procedure is recommended, as is having an assistant on hand to lightly restrain the cat.

Abdominocentesis may be needed in cases of peritonitis or ascites. Dr. Lee recommended performing a sterile prep and using the umbilicus as a central focus. Then, you can tap in four quadrants.

She also recommended examining thoracentesis and abdominocentesis fluid samples in house, so you get a faster diagnosis. If fluid samples are sent to the lab, she advised keeping additional samples for in-house analysis.

3. FAST and TFAST ultrasound

FAST, or focused assessment with sonography for trauma, refers to a very brief ultrasound study to identify whether fluid is present in the abdominal cavity. Dr. Lee advised, "If you have ultrasound equipment, it's good to be able to do a FAST evaluation." Four quadrants are assessed: cranial to the bladder, caudal to the xiphoid, and left and right dependent flanks. FAST ultrasound is much more sensitive than ballottement for detecting ascites, especially when there isn't much fluid, she said.

TFAST, or thoracic focused assessment with sonography for trauma, involves a brief study of the thorax to detect pleural effusion, pericardial effusion or occult pneumothorax.

4. Placing a nasogastric or nasoesophageal tube

Dr. Lee noted, "We don't normally sedate cats for this. We just use a local (proparacaine)." She added that the procedure is simple; at her practice, well-trained technicians normally do it instead of doctors.

A major concern might be that the tube will accidentally enter the trachea, but Dr. Lee said the likelihood of that complication is very low. She added, however, that you can aspirate the tube to check for negative pressure. She also suggested confirming tube placement radiographically before instilling feeding solution.

5. Placing a chest tube

Dr. Lee described a revised procedure for placing a chest tube. Following sedation and a surgical prep, the traditional procedure involves using a scalpel blade to make a stab incision over the eighth intercostal space. Then, mosquito hemostats are used to dissect down to the intercostal muscles and introduce the chest tube into the pleural space.

Dr. Lee described a faster technique that involves feeding a jugular catheter through the eighth intercostal space and into the pleural space (as with a thoracentesis). Initially, remove the stylet and feed the sterile wire a few inches into the pleural space. Once the wire is in, remove the catheter from the pleural space, feed the dilator over the wire and into the pleural space, and feed the chest tube directly over the wire and into the pleural space. Then, remove the wire, suture the chest tube in place like normal, and place a transparent film dressing on top of the area to protect it.

Whichever procedure is used, Dr. Lee advised taking dorsoventral and lateral chest radiographs to ensure correct tube placement.

Dr. Karen Todd-Jenkins received her VMD degree from the University of Pennsylvania School of Veterinary Medicine. She is a medical writer and has remained in clinical practice for over 20 years. She is a member of the American Medical Writers Association and One Health Initiative.

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6 questions to ask before treating otitis externa

No, there isn't one universally effective therapeutic plan for otitis in your veterinary caseload, but asking these six questions will help you zero in on the best path.

Your veterinary team has performed an examination and evaluated cytology slides for the poodle in exam room 3. Just as you suspected, it's a clear-cut case of otitis externa. And now it's treatment time.

How do you narrow down the choices and plan your next steps?

You're in luck. Darin Dell, DVM, DACVD, dvm360 contributor and Fetch dvm360 conference speaker, has developed six questions every practitioner should ask after identifying the cause of otitis externa but before moving forward with treatment.

1. Does the dog have an allergy, and are you treating it now?

You may not treat allergy at the first visit for otitis externa, but you should at least start the conversation about allergy. Allergic diseases are reported as the most common cause of otitis, especially chronic otitis, responsible for 43% of cases.

2. How much debris is in the ear canal?

Knowing this will help you decide what type of cleaner to use and how often. Thick, sticky wax typically calls for a micellar solution or one with squalene. For mucoid exudate, you will probably want to use a TrizEDTA product with chlorhexidine.

3. What is the conformation of the ear canal?

Is it constricted? Cobblestoned? This information also will help you decide what type of ear wash to use and whether to use a topical medication in gel, ointment or liquid form. A more constricted canal requires a wash that is better at dissolving cerumen. Ointments are less likely to travel deep into a constricted or cobblestoned ear canal, so you'll probably want a liquid medication.

4. What type of infection is present?

This will help you pick a topical treatment, with one caveat: You must know what drugs are in the products on your shelf. Infection with rod-shaped bacteria will encourage you to use an ear wash with TrizEDTA. Most rod-shaped bacteria are gram-negative. TrizEDTA damages the gram-negative membrane and forms channels that allow antimicrobials to reach the bacteria.

5. How much edema and erythema are present?

This will tell you what strength of steroid to use. Topical steroid therapy may be sufficient, or you might need oral steroid therapy as well. If the ear canals are completely constricted, then you will definitely need help from an oral steroid. Again, you have to know what ingredients are in the products on your shelf! Common steroid ingredients in otic medications, in order of potency, are prednisolone, betamethasone and mometazone.

6. How much pain and anxiety are present?

This will tell you whether you need to prescribe an additional short-term pain relief/anti-anxiety medication such as tramadol, a nonsteroidal anti-inflammatory drug (e.g. carprofen) or a benzodiazepine (alprazolam). Don't underestimate the pain or anxiety related to ear infection! How many clients have told you their dog runs away when he sees the ear wash bottle or tube of ear ointment? These short-term medications can really help both the dog and the owner.

From Dr. Dell's perspective, unless the patient is aggressive or dangerous, you should try your best to see every tympanic membrane that enters your exam room. And while it might not be easy, anything your veterinary team can do to relieve dogs' itchy, painful ears is a plus.

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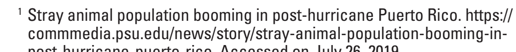

[1] Stray animal population booming in post-hurricane Puerto Rico. https://commmedia.psu.edu/news/story/stray-animal-population-booming-in-post-hurricane-puerto-rico. Accessed on July 26, 2019.

[2] Data on file.

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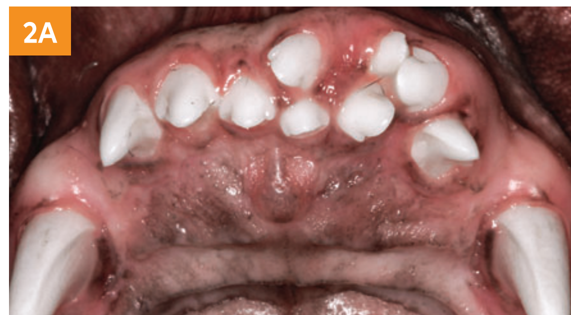
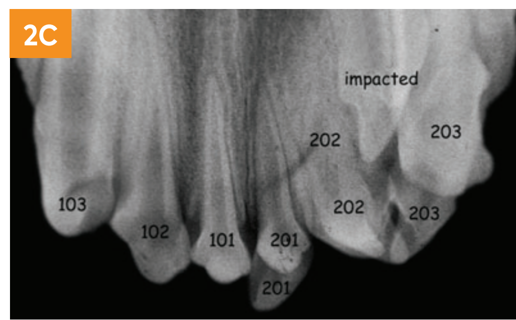
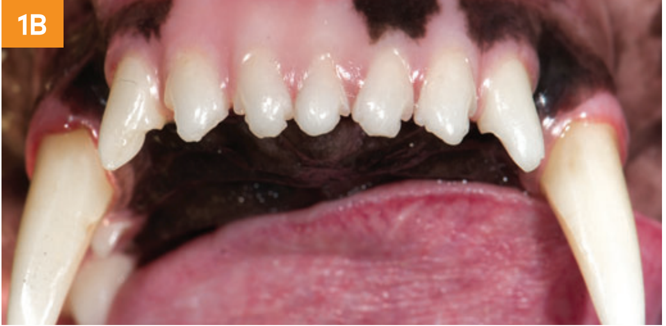
A feline patient with two left maxillary second premolars. No treatment was necessary at the time the photo was taken.



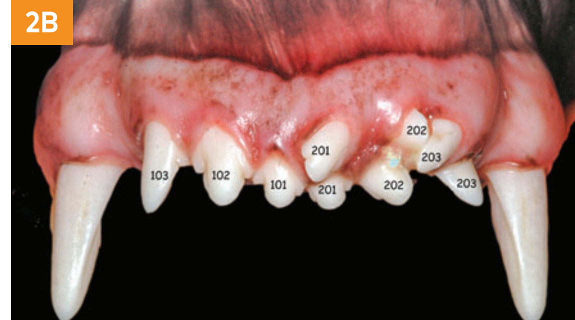
A patient with supernumerary left maxillary first, second and third incisors.



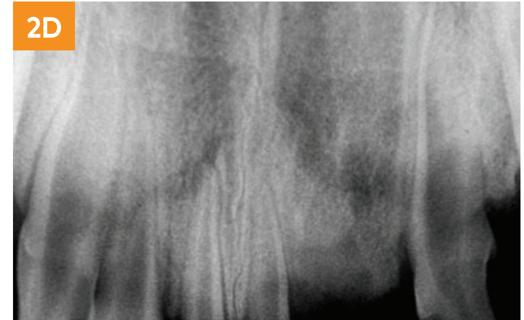
A radiograph of the patient from Figure 2A revealing an impacted incisor due to mechanical obstruction in addition to the supernumerary teeth.



A canine patient's rostral maxilla accommodating seven incisors without excessive crowding.



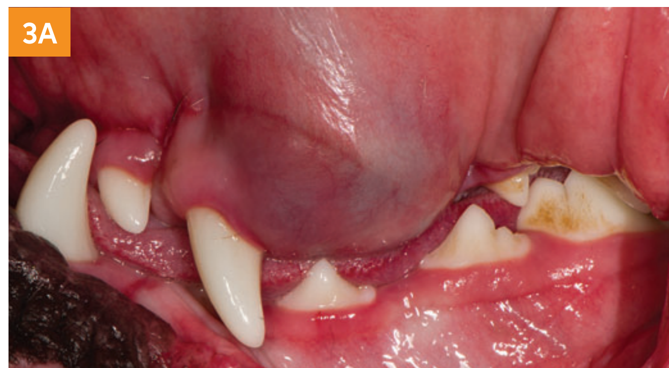
Rostral view of the patient from Figure 2A with supernumerary left maxillary first, second and third incisors.



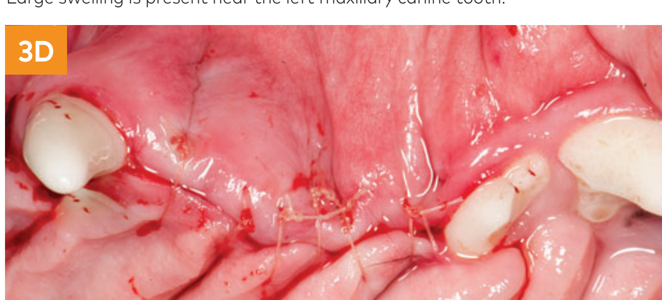
A postoperative radiograph of the patient from Figure 2A after the extraction of the supernumerary and impacted teeth.

The **ABCs** of veterinary dentistry: **'S'** is for **supernumerary** teeth

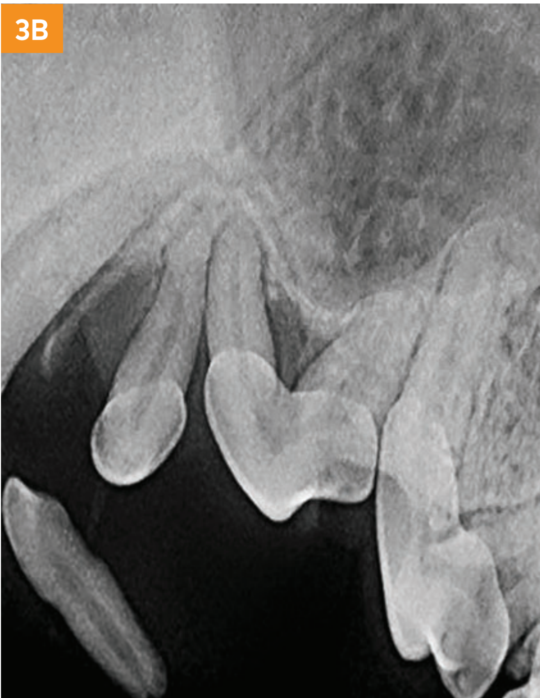
Extra! Extra! Read all about how when it comes to excess teeth, more isn't always merrier for your veterinary patients. *By Jan Bellows, DVM, DAVDC, DABVP, FAVD*



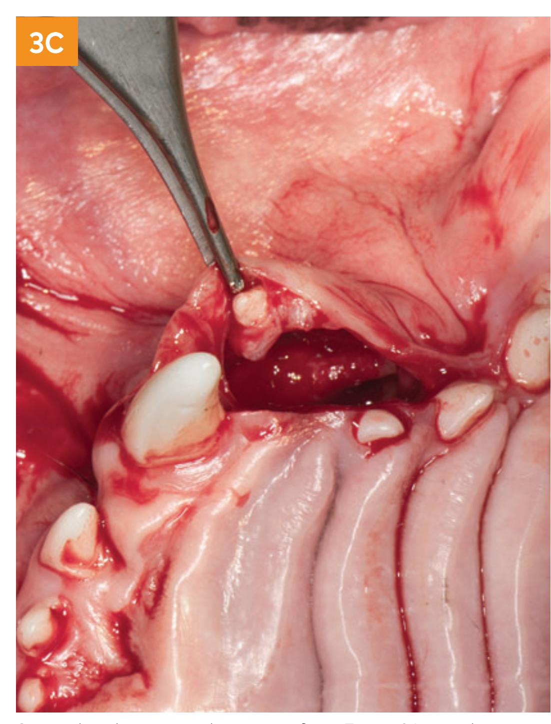
Large swelling is present near the left maxillary canine tooth.



Closure of the cyst in the patient from Figure 3A.

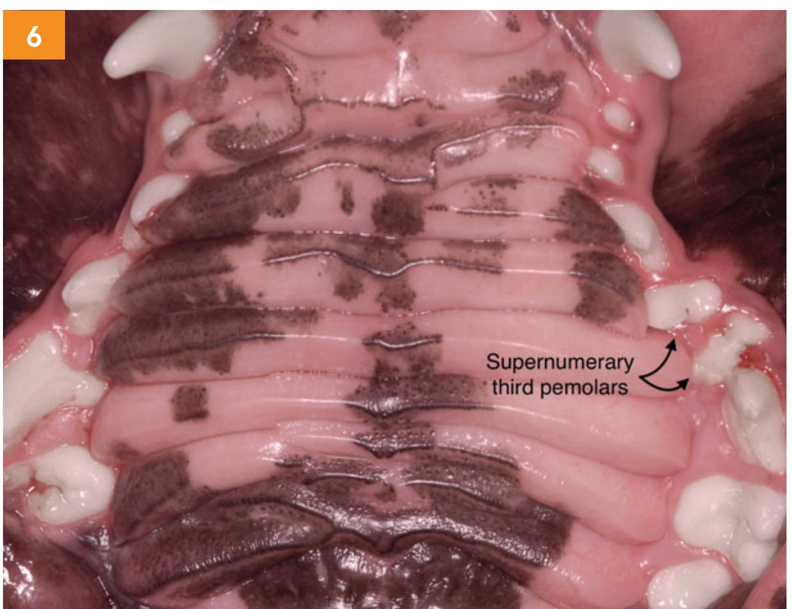


An intraoral radiograph of the patient from Figure 3A revealing a large cyst and an unerupted first premolar.



Surgical exploration in the patient from Figure 3A revealing an unerupted supernumerary first premolar and dentigerous cyst.

PHOTOS COURTESY OF DR. JAN BELLOWS



Two left maxillary supernumerary third premolars in an English bulldog.

I had no idea what "supernumerary" meant (much less how to spell it) when I first heard the term some 30 years ago. But time and experience have taught me the importance of paying attention to this dental condition that often needs immediate care.

Both extra and supernumerary teeth refer to the same medical condition—hyperdontia—which describes when teeth or odontogenic structures are formed from tooth germs in excess of the usual number for any given region of the dental arch. It's thought that these teeth develop from either a cleaved tooth bud caused by hyperactivity of dental lamina near the regular tooth bud or from splitting the regular tooth bud itself. Heredity may also play a role in this anomaly, as supernumeraries often occur in littermates of affected dogs and cats.

Supernumerary teeth may be single or multiple, unilateral or bilateral, and erupted or impacted. The condition is less common in deciduous (baby) teeth than in permanent teeth.

Why more isn't always merrier

Not all dogs and cats with supernumerary teeth are in trouble. Some are able to accommodate extra teeth in the arch without adverse effects. In such cases, pay close attention to these teeth during follow-up clinical and intraoral radiograph examinations for the life of the patient (Figures 1A and 1B).

However, supernumerary teeth can cause several problems, as described below:

Eruption failure. The presence of a supernumerary tooth may cause a mechanical blockage of the eruption pathway that prevents a permanent tooth from erupting normally, leading to either partial or complete eruption failure (Figures 2A-2D). The resulting unerupted tooth is predisposed to dentigerous cyst formation, with an enlarged follicular sac often noted clinically and on radiographic examination (Figures 3A-3D).

Crowding. Erupted supernumerary teeth most often cause crowding (Figure 6). The decreased space between the affected teeth may result in advanced periodontal disease. Crowding may be resolved by extracting the most displaced or deformed tooth to stop food from becoming entrapped.

In cats predisposed to plaque-induced inflammation (gingivostomatitis), supernumerary teeth create plaque-retentive surfaces for stomatitis to proliferate (Figures 7A-7C). Extraction of the supernumerary teeth and teeth affected by periodontal disease is usually curative (Figure 7D).

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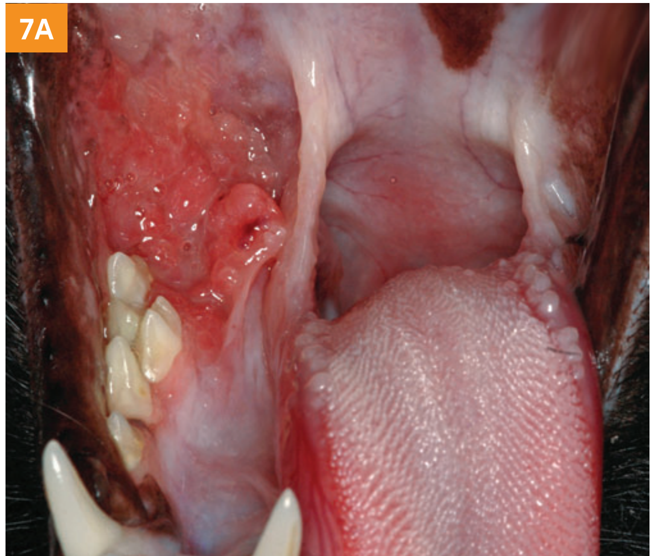
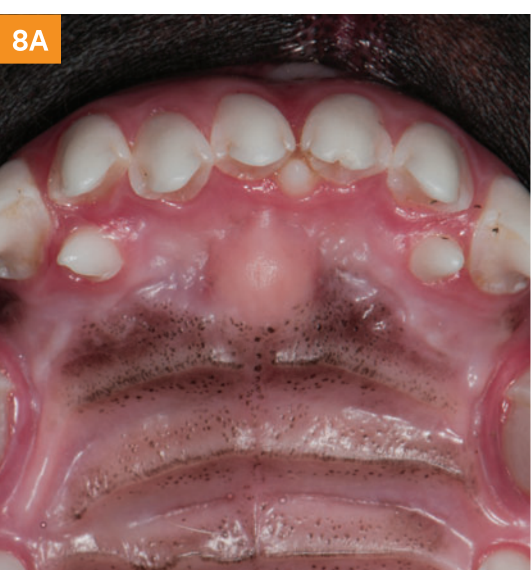
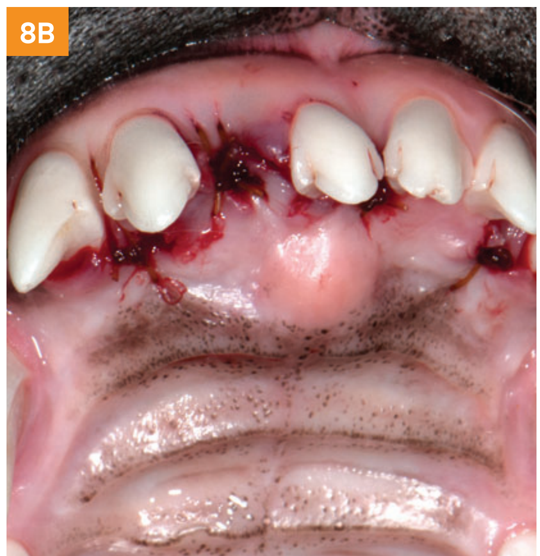


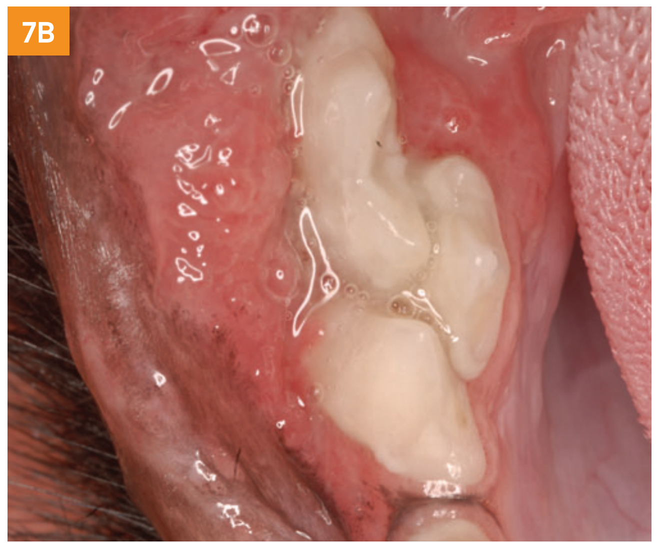
An inflamed caudal oral cavity on the right side of the patient's mouth.



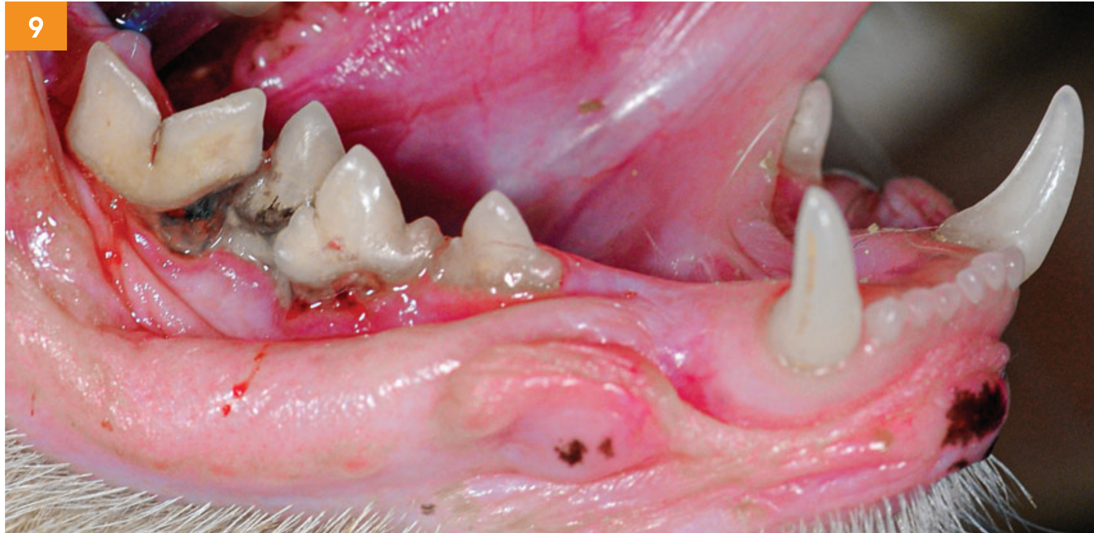
A patient with supernumerary maxillary third incisors.



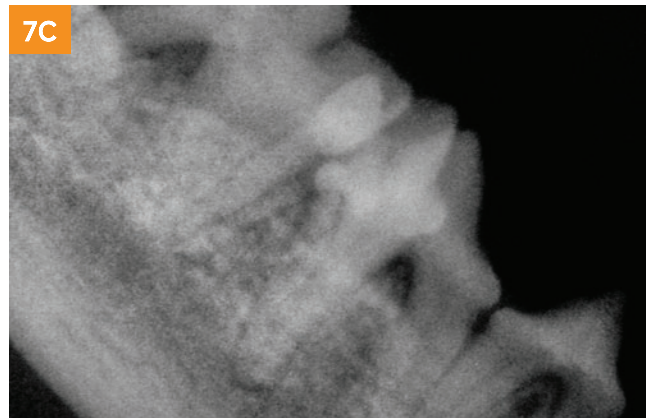
The supernumerary teeth in the patient from Figure 8A were preemptively extracted before pathology could occur.



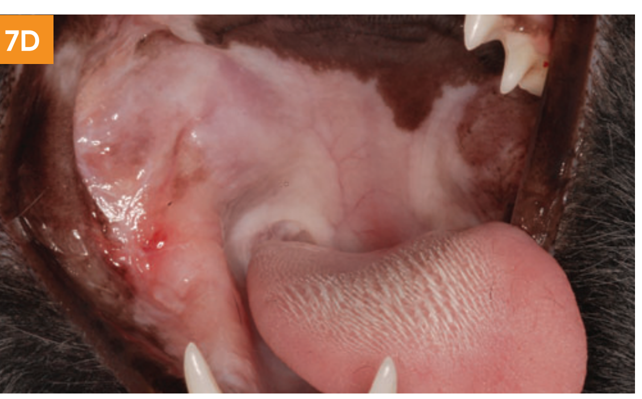
A close-up image of the patient from Figure 7A revealing inflammation surrounding the right supernumerary mandibular fourth premolar.



A right mandibular supernumerary fourth premolar in a cat. This created an environment for advanced periodontal disease to develop, thereby necessitating the extraction of all the right mandibular cheek teeth.



A radiograph of the patient from Figure 7A confirming a supernumerary third premolar.



Resolution of inflammation in the patient from Figure 7A three weeks after extracting the right mandibular cheek teeth.

What to do when there are too many teeth

The management of a supernumerary tooth should form part of a comprehensive treatment plan and should not be considered in isolation. Treatment depends on the type and position of the supernumerary tooth (Is it erupted or nonerupted? What is the stage of the crown and root development?), as well as its effect or potential effect on adjacent teeth (What is the distance between the supernumerary tooth and the roots of adjacent teeth? What is the condition of the dentition? Is there malocclusion or crowding?).

When to extract the extras

Supernumerary tooth extraction is recommended when there is:

- Associated pathology (dentigerous cyst) or tooth support loss (periodontal disease)
- Crowding that compromises the normal self-cleaning process (Figures 8A, 8B and 9).

However, if a patient's supernumerary teeth don't appear to cause adverse effects on adjacent soft tissues or teeth (e.g. adjacent teeth are able to erupt satisfactorily and there is no associated pathology), it's reasonable to decline or delay surgical intervention and regularly monitor them instead.

Looks aren't everything

As with many veterinary dental conditions, it's important for your clients to understand that your concern is for the patient's health—not cosmetics. Educate yourself on the complications that can arise from supernumerary teeth so you're ready to pass on the knowledge to your clients if and when the time comes to benefit your patients.

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

Equine West Nile virus: We can't be **complacent**

Despite the existence of highly effective vaccines, cases of this vector-borne disease are on the rise.

By Kate L. Hepworth-Warren, DVM, DACVIM

West Nile virus became a major equine health concern after it was first identified in the United States in 1999, infecting at least 1,000 horses every year through 2006. Since then, the development of effective vaccines has decreased the number of cases significantly. In 2011, only 87 cases were recorded by the USDA.[1]

However, the number of cases reported since then has rebounded, fluctuating between 141 and 627 annually. In 2018, nearly 500 cases were reported, which is the highest number since 2012. The only states in which West Nile Virus was not reported in horses in 2018 were Alaska, Arizona, Hawaii, Mississippi, Nevada, New Hampshire and South Dakota. Montana, Ohio and Pennsylvania all had more than 25 cases.[1] Of course, it's likely that the actual number of cases is higher, because reporting isn't easily mandated and cases without a definitive diagnosis may go unrecorded.

So why are we seeing this resurgence? One possibility is that horse owners may have become less concerned since the number of cases dropped so quickly after the vaccines were introduced. If they think the disease no longer poses a significant threat, they may be less likely to vaccinate their horses against it. Our job as practitioners is to educate clients that West Nile virus is still present in the bird and mosquito population—and thus still poses a very real threat to horses.

Horses and humans are dead-end hosts for West Nile virus. Infection occurs when horses are bitten by an infected mosquito, most commonly Culex species. After the initial exposure, the virus replicates in lymph nodes, and viremia occurs three to five days after inoculation, lasting up to 72 hours. Infection spreads to the central nervous system four to six days after initial inoculation, and clinical signs of neurologic disease become evident at seven to 10 days. The peak season for infection is late September to October, but it can occur any time mosquitoes are present.[2]

Diagnosis

Although mild, subclinical infections may occur, the "classic" signs associated with West Nile virus infection include, in order of frequency, ataxia, abnormal gait, muscle fasciculations, depression and recumbency. The gait associated with West Nile can be misconstrued as lameness or laminitis in some horses. A mild to moderate fever (101.5 F to 104 F) may be present, but disease should not be ruled out solely on the absence of fever. While not pathognomonic for West Nile, fasciculations of the muzzle are frequently noted.[2,3]

Diagnosis of West Nile Virus is fairly straightforward and generally does not require collection of cerebrospinal fluid (CSF). An ELISA that measures serum IgM antibody against the virus is the most sensitive and specific test available, at 92% and 98%, respectively. There is close to 100% agreement between serum and CSF antibody levels, thus there is little reason to collect CSF for diagnosis of West Nile virus.[3]

However, West Nile virus infection can present similarly to other viral encephalitides in horses—such as eastern and western equine encephalitis—so collection of CSF and evaluation of a complete blood count (CBC) and serum chemistry profile may be warranted to rule out other differential diagnoses. Analysis of CSF with West Nile virus may reveal normal or mildly increased mononuclear cell counts with normal or increased protein. CBC is generally unremarkable, but mild lymphopenia may be present. The serum chemistry profile may also be normal, although elevations in muscle enzyme activity and hyponatremia have been noted.[2]

Treatment

Unfortunately, at this time there is no specific antiviral treatment available that is effective against West Nile virus infection in horses, so treatment is largely the provision of supportive care. Hyperimmune West Nile virus plasma is commercially available, although it is not approved by the FDA and its efficacy in horses has not been proven. In humans and animal models, it was shown to be efficacious even when administered three to five days after infection.[4]

Supportive care includes fluid and nutritional support, depending on the horse's ability to eat and drink. Anti-inflammatories, both nonsteroidal drugs and corticosteroids (flunixin meglumine and dexamethasone, respectively) are both used with some frequency. Reported mortality rates for horses with West Nile virus infection range from 28% to 33% and are relatively low when compared with other viral encephalitides. Patients that remain standing and ambulatory have a far better prognosis than those that become recumbent, which are nearly 80 times as likely to die or be euthanized.[2,3]

Prevention

There are several vaccines available for the prevention of West Nile virus, including two whole virus inactivated vaccines (West Nile-Innovator—Zoetis; Vetera WNV—Boehringer Ingelheim) and an inactivated flavivirus chimera vaccine (Prestige WNV—Merck). Previously, a recombinant canary pox vaccine was available but at the time of publication was no longer on the market. These are all offered alone or in combination with other vaccinations considered to be core by the American Association of Equine Practitioners.

The suggested administration interval of these vaccines is 12 months, although animals at higher risk can, and often are, vaccinated more frequently. In warmer regions of the country, where mosquitoes are present year-round, some recommendations suggest vaccinating up to three times annually for West Nile virus. Mosquito control and elimination of standing water are also key factors in minimizing the chance of West Nile virus transmission.[5]

Despite a significant reduction in the number of cases of West Nile virus in horses over the past two decades, it's still endemic in much of the United States and should be considered a differential diagnosis for horses that present with acute onset of ataxia, depressed mentation and potentially a fever. Highly effective vaccines are available, and it has been shown that unvaccinated animals are twice as likely to die as those that have been vaccinated even once.[3] West Nile virus is reportable in most states, thus practitioners should reference their individual states' regulations to ensure appropriate disease reporting.

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A guide to placing **wound soaker catheters** in dogs

Veterinary surgeons: Not familiar with wound soaker catheters? You'll want to be. They are easy to place and remove and can simplify your local pain control regimen for some surgical patients. *By Marc Hirshenson, DVM, DACVS; American College of Veterinary Surgeons*

There's no doubt that the implementation of appropriate analgesic protocols is a vital component of both routine and specialized veterinary surgical care. And yet, systemic analgesics—opioids and nonsteroidal anti-inflammatory medications—while frequently used in the perioperative and postoperative period, can result in unwanted side effects, such as sedation, nausea, vomiting, decreased appetite or urinary retention. Traditional nerve blocks with local anesthetics are beneficial in decreasing systemic analgesic requirements but require technical expertise; additionally, these medications have relatively short durations of action.

Enter wound infusion catheters (also known as wound soaker or diffusion catheters), which deliver local analgesia to or around a surgical site by using repeated or continuous

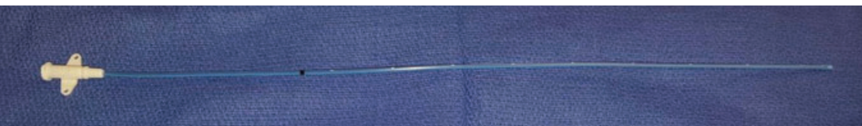

Figure 1: This commercially made wound soaker catheter consists of a closed distal tip, small openings along the catheter length, and a butterfly at the proximal tip.

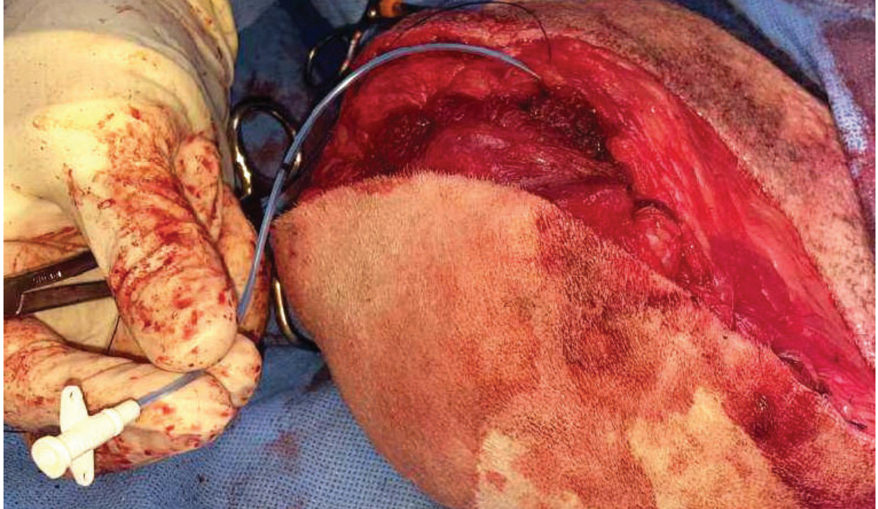

Figure 2: During wound closure, place the distal tip of the catheter at the deepest layer of closure or desired layer of local anesthetic administration.

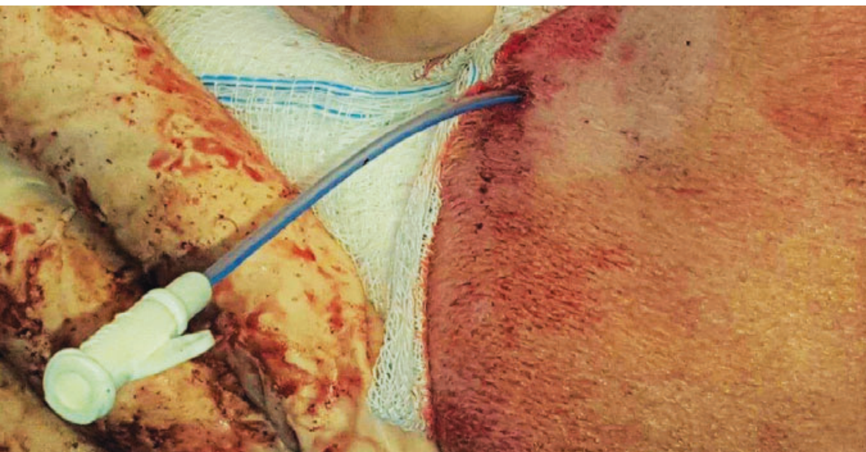

Figure 3: Close around the catheter, ensuring that all slits are below the skin surface.

infusion. The use of these catheters in veterinary medicine has increased with better understanding of and focus on pain management in our patients. Wound soaker catheters are easily placed during surgery, assist in providing local analgesia for a prolonged period, and potentially decrease the need for systemic medications.

Instrumentation

In its simplest form, a wound soaker catheter is a pliable (often polyurethane) catheter that consists of a closed distal tip with small openings along the catheter length, allowing for diffusion of medication along a wound bed (Figure 1). An injection cap or intravenous (IV) administration set can be attached to the proximal end for drug administration.

You can make wound soaker catheters from red rubber or other types of polyurethane catheters, but other options are commercially available. Commercially available catheters are calibrated, allowing veterinary surgeons to know the volume of fluid retained within the catheter. Commercial wound soaker catheters are available in different lengths, allowing for placement in variably sized wound beds.

Indications

In my experience, wound soaker catheters are used most commonly during forelimb and hindlimb amputations. However, other procedures in which wound soaker catheters are used include thoracotomies, large mass removals and total ear canal ablation.[1]

Placement

Step 1: Insert the catheter during wound closure (Figure 2). Place the distal tip of the catheter at the deepest layer of closure or desired layer of local anesthetic administration.

Step 2: Continue to close around the catheter, ensuring that all slits are below the skin surface (Figure 3). Pay attention not to suture the catheter to deeper layers.

Step 3: Secure the catheter using a purse string suture and finger trap suture pattern. Commercially available wound soaker catheters have a butterfly at the proximal tip to allow for suturing to the skin and additional support.

Step 4: Cover the exit site with an adherent bandage or soft padded bandage, depending on the placement site.

Step 5: Place an injection port to allow for easy administration of medication. Administer a priming and filtering volume at the time of placement (per specifications supplied with each manufactured catheter).

Step 6: Place an Elizabethan collar on the dog.

Analgesia administration

Local anesthetics can be administered through intermittent (bolus) injection or constant-rate infusion. I prefer intermittent injection with bupivacaine, but lidocaine can be given as a constant-rate infusion (approximately 2 mg/kg/hr).

I recommend approximately 1 to 1.5 mg/kg bupivacaine every four to six hours for dogs. That dose can then be diluted to 0.25% with saline or sterile water to allow for increased volume. Small patients may require additional dilution of drug to ensure all medication exits the catheter or covers the entire wound bed. Limb amputations typically require dilution to ensure adequate dispersion across the wound bed, while thoracotomy procedures may require minimal dilution. Local analgesic can be administered through the catheter for at least 24 hours or longer as indicated.

Note: Wound soaker catheters can be placed in cats. I recommend giving 0.5 mg/kg bupivacaine intermittently for feline patients.

Removal

Removing a wound soaker catheter is simple. Just cut the skin sutures and apply gentle traction.

Complications

Potential complications of wound soaker catheters include seroma, edema, local anesthetic toxicosis, infection or accidental premature removal. One study found no increase in incisional infections in patients receiving wound soaker catheters.[2]

Conclusion

Wound soaker catheters may provide an additional means of analgesia for surgical patients. They can be placed easily with minimal additional surgical time, while potentially lowering the need for systemic analgesics.

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Wellness vs. illness diagnostics: Test now or test later?

The veterinary world has its own chicken-and-egg debate on when to run tests and why—and at what value. *By Michael Nappier, DVM, DABVP*

Which came first—the chicken or the egg? Since the beginning of time, human beings have pondered that classic philosophical question.

And so it is with veterinary medicine that we ponder our own version of this question: Which should come first, the illness or the diagnostics? Some argue that diagnostics come first, so we can find problems earlier and thus provide more effective care. Others argue that illness comes first, because if we run diagnostics to screen all the time, there will be no resources left when we actually find a problem. Let's spend a little time and examine our veterinary chicken-and-egg dilemma.

Some argue that diagnostics come first, so we can find problems earlier. Others argue that illness comes first, because if we screen all the time, there will be no resources left when we actually find a problem.

Illness first

The "chicken first" camp argues that we should conserve our resources until we actually have a chicken in sight. Going on an egg hunt of endless diagnostics will simply exhaust our patience and attention to detail while draining our clients' financial resources and frustrating them with long strings of normal diagnostics. This can fracture the bond between the veterinarian and the client, leaving everyone in a weakened state when it comes time fight an actual "chicken" (illness).

A further subset of the illness-first camp—hereafter referred to as the "rubber chicken cadre"—will also argue that the idea of wellness testing is simply a vast lab company conspiracy to wrench money from the pet-owning populace and veterinarians by recommending an endless series of tests that just result in more tests.

Diagnostics first

The "egg first" consortium feels that it is far better to find an illness before it hatches, as it's better for our patients to fight disease in its infancy before it becomes a giant chicken monster. Waiting until a problem declares itself is like waiting for Godzilla to hatch and grow up before taking him on.

Regular wellness testing prevents this by detecting early signs of disease when they're more easily treatable. This gives patients the best quality of life possible and reinforces the human-animal and veterinarian-client bonds. Even normal test results are celebrated, as they give us as veterinarians and our pet owners peace of mind knowing that all is well with their pet.

Illness-first veterinarians deride diagnostic-firsters as quaint or old-fashioned. There is a small group of egg-firsters who believe that no test should be spared in looking for potential problems—"vomiting," if you will, tests all over their patients in an effort to adhere to the mythical yolk (gold) standard.

The verdict

While both camps have worthy goals and sound logic, I prefer to make my own way. I call it the path of the chicken omelet. I don't care which came first, because I'd rather have my chicken and eat the egg, too. I prefer to find problems early, because that prevents bigger issues down the road. It's better for my patients because they get to be healthier, and it's better for my clients because small problems are cheaper to fix than big ones.

I also prefer to offer wellness plans or packages for clients, because that helps pet owners budget wellness care into their regular financial plan while still allowing for unexpected illness problems. This also makes the illnesses easier to deal with, as the expense isn't seen as being an either-wellness-or-illness proposition.

That said, not every test is worth running and not every animal needs every test. We've seen a number of tests in the veterinary profession come and go—tests that initially seemed exciting, but wound up being a never-ending cycle of checking and rechecking the same test with no change in treatment or outcome. The rubber chickens have a point that the No. 1 goal of a lab company is to sell lab tests.

In short, I believe we don't need to be in one camp or another. Regular wellness testing and respecting our clients' finances are both worthy objectives. Offering well-thought-out wellness options with testing catered to our patients' needs—instead of just running every test in the book—is good medicine. Giving clients financial options to better budget for their desired pet care is respectful to them without falling into the trap of "X-raying their pocketbooks," which veterinarians are so good at. Now, let's go out and make a chicken omelet.

Dr. Michael Nappier is assistant professor of community practice in the Department of Small Animal Clinical Sciences at the Virginia-Maryland College of Veterinary Medicine in Blacksburg, Virginia.

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Storm Sangria: A calming cocktail for noise-phobic dogs

An intervention that includes both appropriate medications and safe-room training can help your anxious veterinary patients experience a measure of peace during thunderstorms, fireworks and other noisy events. *By Sally J. Foote, DVM, CABC-IAABC, LSHC-S*

We are at the height of thunderstorm season here in the Midwest, and phone calls about storm-fearful dogs fill our days. Storm phobia is the most common subtype of noise phobias in dogs.[1] The behavioral response may vary from mild pacing and panting to severe trembling to digging at the door—even breaking teeth and nails to escape.

Triggers may include falling barometric pressure, wind, rain, cloud cover and thunder.[2] Many of these triggers are present hours before the storm develops, which explains why dogs can suddenly start acting fearful on a calm, sunny day. When the thunder and lightning do occur, the dog often escalates into panic. The physical impact can include fractured canine teeth, aggravation of congestive heart disease or severe lacerations from attempts to escape the home or confinement during a storm.

Fortunately, there is a myriad of options for intervention—including pheromones, supplements and medications—to help reduce anxiety associated with noise phobia. But medication alone is not enough. The dog also needs to learn to go to a safe room to be calm and protected during a storm.

Introducing the Storm Sangria

The Storm Sangria is a cocktail created to help pets that are fearful of thunderstorms. It can also be used for the Fourth of July or other noisy events. I developed this cocktail based on lectures I attended about storm phobia discussing medications and safe-room plans, and it's also based on my 35 years of clinical experience living in rural central Illinois. The Storm Sangria represents my go-to choice of medications. It is designed to last eight to 12 hours, since clients often must be away at work all day, and storms can erupt without warning and last hours.

This plan is not a behavior consult. It's an intervention to reduce panic and help the dog learn to self-calm in a safe, sheltered place during a noise event. Think of this plan like a glass of sangria—a combination of medication (like the wine and brandy) with an easy-to-follow behavior modification plan (like the juice, fruit and seltzer). You need both parts to create the refreshing drink—or in this case the total plan. This plan will decrease noise fear and prevent further escalation. There may be underlying anxiety problems that require a more complete consultation, but for big noise events, this plan prevents panic and self-injury.

But first, let's review

Before we get into the details of the Storm Sangria, here are some key points about storm and noise phobia to keep in mind:

- A plan that includes appropriate fear-reducing medications and safe-room training is the key to improving behavior. When you have this plan in place, many dogs can reduce fear significantly in the first season and need less medication in subsequent seasons.
- Some previously non-noise-phobic dogs may suddenly become fearful due to an intense storm event. They will not "get over it." Every storm or noise event will solidify their fear, and it will increase over time.
- Recognizing the early signs of anxiety and implementing the plan immediately is imperative. Medications take an hour or two to reach therapeutic levels and are less effective when the animal is already highly anxious.
- Brain aging, arthritis and other health issues can aggravate noise phobia.[3] Be sure to ask your clients with older pets about fear of noises.

Mixing the perfect cocktail

Without further ado, here's how to mix a Storm Sangria:

1. Screen for the level of panic using a storm fear scorecard. In my general practice, I found it helpful to use a storm report card to screen patients for their level of fear (find a link at **dvm360.com/stormsangria**). This tool allowed me to quickly provide the medication or supplement needed and implement a simple safety plan to reduce storm fear.

2. Determine the medication plan. This is based on the fear-screening score:

- *Levels 2 to 4:* Adaptil collar worn 24/7. The Adaptil pheromone collar provides calming at any time of the day or night, which helps prevent fear escalation, especially when a surprise storm or noise pops up.
- *Levels 3 and 4:* Propranolol at 5 mg/15 kg up to 20 mg maximum. Propranolol decreases the physical signs of increasing anxiety, which helps a dog move to the safe room.
- *Level 4:* Diazepam at 2 to 5 mg/dog. Diazepam provides mild sedation and anxiety reduction for dogs that would injure themselves in escape attempts.

There are other medications that can work well, so the Storm Sangria is customizable based on your preferences. But the ease of administration, duration of action and reduction of physical signs to aid in getting to the safe room are why I kept most of my patients on this specific cocktail.

3. Teach the dog to happily hang out in a safe room. This can be a bathroom, basement or closet. Clients

More cocktails will be served ...

In general practice, clients often ask veterinarians and staff members about behavior problems, and veterinary professionals with training in Low Stress Handling, Fear Free practice or other programs may recognize these problems even when clients don't.

A behavior intervention plan can nip problems in the bud or prevent escalation. I have found that providing not only a drug but a simple, easy-to-follow behavior modification plan prevented problems from getting worse, and at times was a solution.

Blending a medication and a behavior plan is like a mixing a cocktail. The medication is like the alcohol, and the behavior plan is like the fruit juice or soda. Both parts are required to create an enjoyable, easy-to-consume product that creates a calming experience.

This article is the first in a series of cocktail "recipes"—following this we'll discuss the Litterbox Lemon Drop, the Anxiety Appletini, the Killer Kanine Kamikaze and more. In the meantime, you can head to lowstresshandling.com to find the Behavior Cocktails webinar for an hour of RACE-approved CE.

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can teach their dog to go to the bathroom or basement readily by using the "learn to earn" game. They'll reward the dog as it approaches the bathroom or basement, then quickly toss food in the room to make it fun to stay in there. I have a video on my YouTube channel, "Get in the Bathroom," that demonstrates this process (find the link at **dvm360.com/stormsangria**).

4. Place a frozen Kong food puzzle in the safe room. A frozen food puzzle lasts for hours. Clients can have these ready by stocking the freezer with a few ahead of time. When it's time to set up the safe room, they toss in the Kong and they're all set.

5. Play music that's heavy on the bass. I've found that rhythmic rock works best. In my personal and clinical experience, the heavy beat of rock music calms dogs better than classical. I've asked clients to tell me what specific songs helped their dogs be calm, and my own dog Butterscotch liked North African drumming music. From this client input I created the Butterscotch playlist (see **dvm360.com/stormsangria**). Use this list to help your clients create their own calming safe-room music list.

A note about older dogs

Geriatric dogs can be worse or better with storms. For dogs over 10 that experience storm fear, mix a Senior Storm Sangria. This cocktail consists of an Adaptil collar worn 24/7 as well as a daily milk protein supplement (Zylkene—Vetoquinol), an omega-3 fatty acid supplement and your nonsteroidal anti-inflammatory drug of choice for reducing any arthritis pain. Then implement the safe-room plan, the music and a food puzzle. Often, other sedating and anxiety-reducing medications are not needed when addressing age-related health problems, although a carpet runner may be needed to help the older dog walk to the safe room.

Last call

Storm and noise fears can seriously affect both dog and owner. Sleepless nights, damage to the home and expensive veterinary bills can break the bond. Prevent problems by advising all dog owners to create a safe room for their pets and send them there during storms or other noisy events. This intervention provides a sense of calm and safety—something both dogs and their owners will appreciate.

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Dr. Sally J. Foote is a certified animal behavior consultant with expertise in Low Stress Handling. She has practiced in general medicine for over 30 years, including ownership of Okaw Veterinary Clinic in Tuscola, Illinois, one of the first Low Stress Handling Certified Clinics in the United States, where she developed a medical record system for recording the positive reinforcers for the veterinary exam. Dr. Foote is also past president of the American Veterinary Society of Animal Behavior and executive director of Cattle Dog Publishing, the legacy of Dr. Sophia Yin.

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The Oxygen Therapy Door from Mason Co. features a stainless steel outer frame and tempered glass window. It also includes an oxygen regulator and humidifier bottle, plus a temperature and humidity meter. The frame is more rigid than the previous version, while tempered glass makes the window more scratch-resistant. The updated doors are now an option on Mason's Quiet Cottages, part of Fear Free's Preferred Product Program. The Oxygen Therapy Door is available on Mason's 28-, 30- and 36-in-wide units to further speed recovery.
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The Impressa IP60 Digital Photo Printer is a professional-grade color printer that can be used in veterinary hospitals. The printer can produce a 4-by-6-in photo in seven seconds and creates high-resolution images of up to 1,200 by 4,800 dpi on a wide range of paper surface options, including gloss, luster, linen, repositionable adhesives, magnetic and postcards. The printer provides the ability to create print lengths of up to 24 in using either dye or pigment inks.
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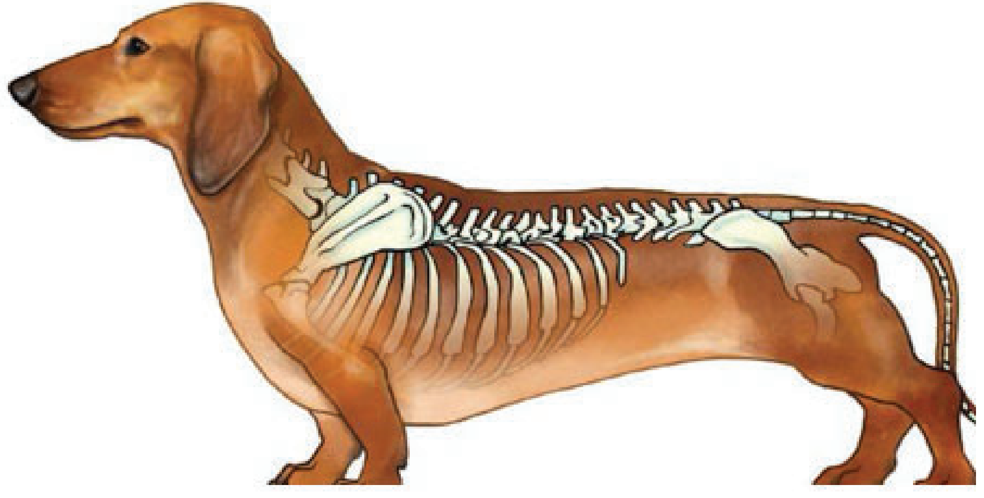

Orivet

Chondrodystrophy and IVDD genetic test

Orivet has announced a new test available to detect a genetic variant linked with chondrodystrophy and intervertebral disk disease (IVDD) in dogs. Chondrodystrophy is defined by dysplastic, shortened long bones and premature degeneration and calcification of intervertebral discs, so it's more common in short-legged breeds such as dachshunds, basset hounds and corgis, while dachshunds account for 45% to 70% of all IVDD cases in dogs. The single assay test from Orivet detects a variant in gene FGF4 linked with these diseases, helping veterinarians and pet owners take proactive measures to protect musculoskeletal health.
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PetSmart looking to open non-Banfield clinics in stores

In an effort to provide pet care to more pet owners, PetSmart has opened its doors to independent veterinary operators (IVOs), according to company representatives.

"PetSmart's current veterinarian presence with Banfield is vast but does not reach all of the locations where the company seeks to provide care to its customers," a statement from PetSmart reads.

The company is looking for independent veterinarians or veterinary groups that currently consist of fewer than 50 locations and want to grow through operating full-service clinics inside PetSmart retail locations.

"An IVO should have a strong sense of community, customer engagement and dynamic collaboration skills, and focus on driving detailed veterinarian services," the company states. More information is available by emailing ivo@petsmart.com. The first IVO within PetSmart was opened in Las Vegas last year.

Trupanion wants to save 6 acres of trees

Pet insurance is slowly growing in this country, and Trupanion hopes that one less thing that will be growing is paper waste.

You know those certificates the company sends you for 30 days of coverage at no upfront cost for patients who've just had a physical exam? The company wants to inspire you to get off the paper (saving 2.5 million pieces—that adds up to six acres of trees—as part of its "Better World Initiative") and switch to Trupanion Express and an online certificate available through the desktop app. A company representative says Trupanion will make a donation to the Arbor Day Foundation if veterinary professionals take time to hear more about the paperless program.

It's official: Elanco to purchase Bayer's animal health division

The $7.6 billion deal will double Elanco's companion animal business, making it the second-largest global player in the veterinary pharmaceutical industry, companies announce.

Elanco Animal Health has entered into a definitive agreement to acquire Bayer Animal Health, the companies announced separately on August 20.

The transaction is valued at $7.6 billion, including $5.3 billion to be paid in cash and $2.3 billion in equity. Subject to regulatory approval and other customary closing conditions, the deal is expected to be finalized in mid-2020, according to the releases.

With its Advantage and Seresto parasiticides, among other products, Bayer Animal Health has been a longtime global leader in the veterinary industry, with sales of $1.8 billion worldwide in fiscal year 2018. The marriage of these companies will give rise to the second-largest animal health company in the world (behind Zoetis), improving Elanco's product portfolio and paving the way for research and innovation, according to the Bayer press release.

"Our Animal Health business is among the pioneers of this sector, having built up an attractive portfolio and secured well-established market positions in the companion and farm animal segments," said Werner Baumann, chairman of the board of management of Bayer AG, in the Elanco press release. "And now, the combination with Elanco will give rise to a leading competitor in the animal health industry, benefiting customers, employees and shareholders alike."

Jeffrey N. Simmons, president and CEO of Elanco, agrees. "Combining Elanco's strong relationship with veterinarians and Bayer's leadership in retail and e-commerce will ultimately benefit all our customers," he said in the Bayer release. "We look forward to joining our complementary portfolios and capabilities to build a fully focused animal health company, providing a sustained flow of innovation for farmers, veterinarians and pet owners."

The purchase agreement guarantees all Bayer Animal Health employees will retain a position within Elanco for at least one year.

Zoetis acquires Platinum Performance

Zoetis has entered into an agreement to acquire Platinum Performance, a privately held, nutrition-focused animal heath company. Platinum's nutritional product formulas focus on scientific wellness for horses, dogs and cats. With the acquisition of Platinum's nutritional formulas, Zoetis enters this space for horses, building on the company's existing nutritional portfolio for dogs and cats. The expansion in nutritionals aligns with Zoetis' increasing focus on health and wellness as part of the continuum of animal care, according to a company release.

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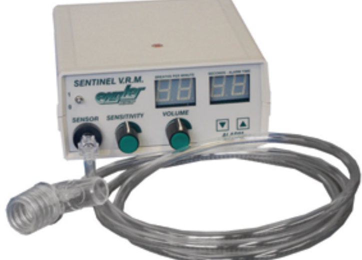

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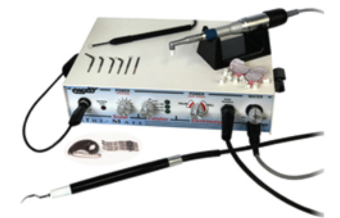

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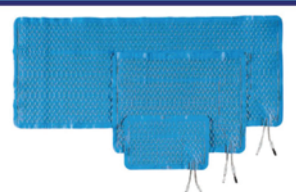

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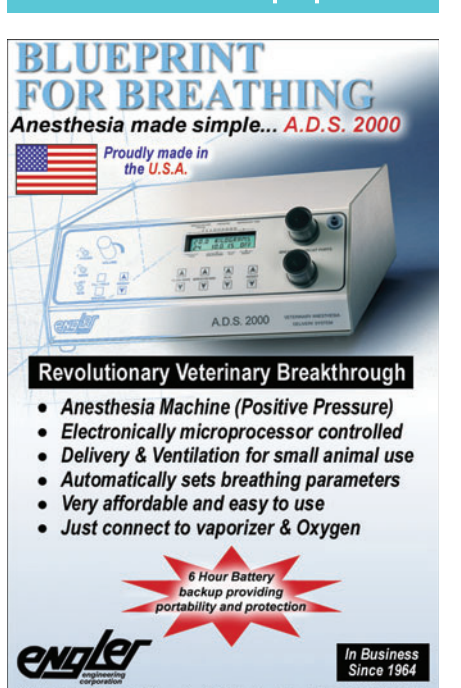

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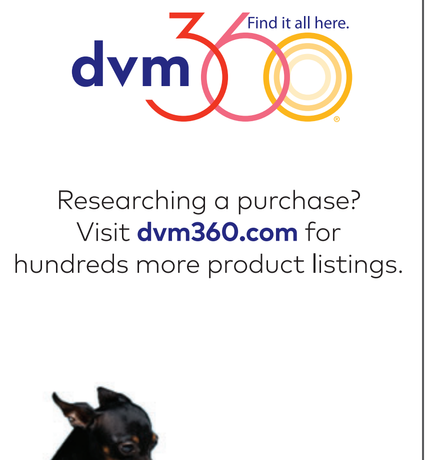

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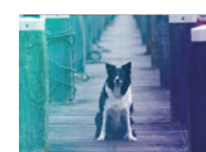

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ahvma.org

September 8-10
Pet Loss & Grief Companioning Certification Course
Boston, MA
(317) 966-0096
twoheartspetlosscenter.com

September 12-15
Colorado VMA Convention 2019
Denver, CO
(303) 318-0447
colovma.org

September 21-22
San Diego County VMA Fall Conference
San Diego, CA
(619) 640-9583
sdcvma.org

September 22
It's What's Up Front That Counts!
Portland, OR
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vmc-inc.com

September 25-26
119th Penn Annual Conference
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vet.upenn.edu/education

September 26-29
Southwest Veterinary Symposium 2019
San Antonio, TX
(972) 664-9800
swvs.org

September 27-29
Pacific Northwest Veterinary Conference
Tacoma, WA
(800) 399-7862
wsvma.org

September 28
Canine Geriatric Medicine Course
Raleigh, NC
(919) 513-6259
cvm.ncsu.edu/event

September 28-October 4
American Association of Zoo Veterinarians 51st Annual Conference
St. Louis, MO
aazv.org

October 4-6
Alaska State VMA Annual Symposium
Anchorage, AK
akvma.org

October 4-6
2019 New York State Veterinary Conference
Ithaca, NY
cvent.me/xaxKg

October 5-6
Breed-Specific Medicine: Using Genetics to Elevate Quality of Care
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lonestarvetacademy.com

October 10-13
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abvp.com

October 12-13
Colorado VMA CE Southwest
Durango, CO
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October 14-17
Atlantic Coast Veterinary Conference
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acvc.org

October 17-19
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(301) 916-0200
acvssurgerysummit.org

October 17-19
Updates in Endocrinology and Cardiology
Asheville, NC
(888) 488-3882
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October 31-November 3
2019 AAFP 5th World Feline Veterinary Conference
San Francisco, CA
(908) 359-9351
catvets.com/education

November 3
Veterinary Forensics Seminar & Autopsy Lab
Madison, WI
(608) 265-5206
apps.vetmed.wisc.edu/cereg

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isvma.org/isvma-convention

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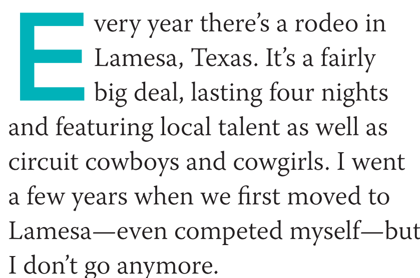
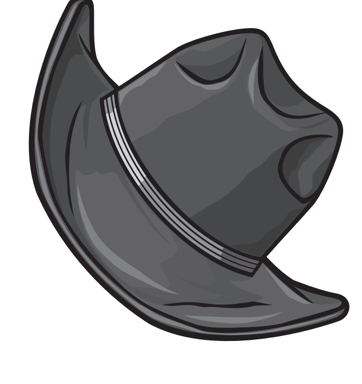
STAMPEDE | Bo Brock, DVM

Human medicine **ain't my rodeo**

As a performance animal veterinarian, I've learned that if you get thrown from a bull, you have to get up and get back on—unless that bull decides to land on you.





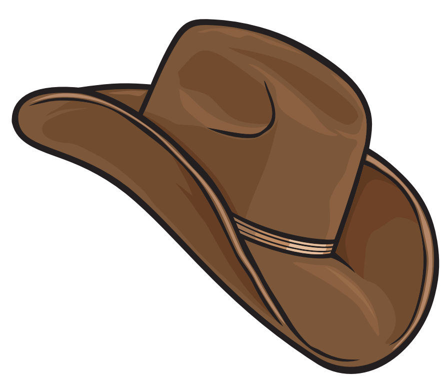
Every year there's a rodeo in Lamesa, Texas. It's a fairly big deal, lasting four nights and featuring local talent as well as circuit cowboys and cowgirls. I went a few years when we first moved to Lamesa—even competed myself—but I don't go anymore.

Every time I go to a rodeo, swarms of people pull me over and want to tell me a story about something wrong with their horse or how something I did to their horse 15 years ago didn't work. I guess I sound like an old bitter vet, but believe me when I say it can go too far.

The magical power of waving hats

This particular year, the announcer called out, "Dr. Brock to the area behind the bucking chutes, please."

I ambled my way around the arena until I was met by an official with an anxious look on his face: "We have two things that desperately need your attention," he told me. "First thing is that one of the bucking horses has a long laceration across its chest that needs to be sewn up. The second is that the last bull rider got stepped on pretty bad, and we need you to have a look at him—he's just rolling around over there and says he won't go to the hospital."



I immediately told him I don't work on people. But this official wouldn't take no for an answer and herded me over to the injured bull rider—a short guy with a big cowboy hat pulled down low, rolling around on the ground with his arms crossed in front of his stomach and a look of agony written across his face. I'd seen the bull step on him and was amazed he'd gotten up and run off like he did. There was an ambulance parked not 100 feet away … and yet, these people call a vet.

I looked at him and immediately said, "This guy needs the ambulance, not a horse doctor. There's one parked just right over there; I'll go get 'em."

"Wait, doc, Bubba is afraid of regular doctors—we done some CPR on him, and he ain't gettin' no better, but he still keeps hollering when we tell him we're gonna get the ambulance," said the official. "Can you convince him he needs more doctoring than we can give with our CPR, please?!"

I asked what kind of CPR they'd done, and I got a detailed explanation of how a person who gets stepped on by a bull gets the "wind" knocked out of him and just needs a little air. So the other bull riders circle around him and fan his face with their cowboy hats until he has his air back.

Four bull riders were still performing "CPR" on Bubba, fanning their hats so fast and hard that it was blowing dust up all around Bubba's face.

I started in on them: "I am not a human doctor, and Bubba may have had some serious internal damage from that bull. I am going over to get the ambulance and if you like Bubba, you'll help me before he gets worse!"

The paramedics hustled over and left me free to consider the cut horse.

The magical power of male bravado

When I arrived at the pen holding the mare, things weren't much better. She had a 20-inch slice across her chest with a huge flap of skin hanging down.

But that wasn't the worst part. The worst part was that she wasn't even halter-broke and appeared to have smoke coming out of each nostril like a dragon waiting to devastate a village. There were cowboys circling the pen she was in.

"How are we even gonna catch her to sedate her, much less sew it up?" I said.

To that, one fella piped up: "No worries. I'll catch her for you—I do it all the time." The cowboy grabbed a halter and leapt over the fence. I watched in amazement as he jogged toward the mare and patterned out the halter in his hands to slip onto her like he was approaching a 24-year-old kid horse. I couldn't see this turning out well. I was about to holler at him to just forget it and I would—then she struck. She laid both ears back and took off like a shot, straight at him. She bounced him all over that pen. Someone finally got a rope on her and got him off. Immediately, five men jumped over the fence and started waving their hats in front of his face—you know, CPR.

It's a good thing there were two paramedics in that ambulance.

I got the mare sutured up after several doses of sedation and about four hours of work. And I decided I wasn't going to the rodeo anymore.

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

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