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Maternity, Motherhood and Pumping ₀36

First day. first duty:
FIRE HER
p34

Seamless solutions for **PARASITE TALKS** _{D20}



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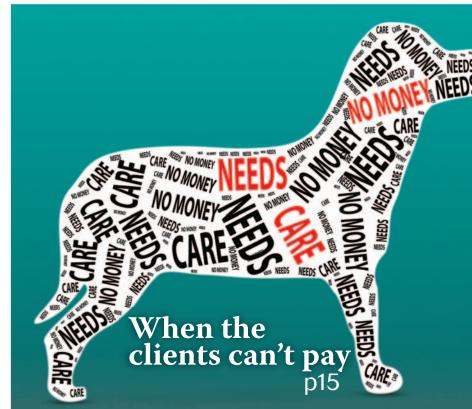


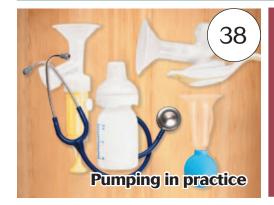
firstline

Healthy team members = healthy pets









Also in this issue:

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- **8** Living with—and loving a cat with FIV
- **11** Mistakes clients with diabetic pets make
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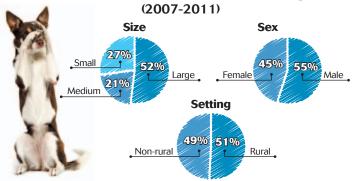
PEARLS

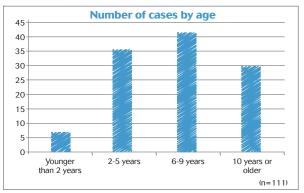
(Lustrously good advice and tips)

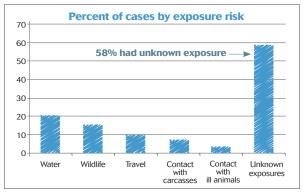
The entire canine population is at risk

The demographic data on canine leptospirosis cases is shifting, says Oregon state public health veterinarian Emilio DeBess, DVM, MPVM. According to case data from Oregon between 2007 and 2011, 55 percent of the infected dogs were male, 51 percent were from rural settings, 52 percent were large, 69 percent were between 2 and 9 years old and 26 percent were 10 years or older. Fifty-eight percent had no known exposure risk. In other words, the entire canine population is at risk. Check out the charts below for a more in-depth look at the numbers.

Canine leptospirosis cases in Oregon







Read opinions on the leptospirosis vaccine on page 12.



>>> Question-mark-tailed cat questions everything.



>>> Pee face kitty smells pee.



>>> Battering ram kitty gives love bumps.



>>> Saucer-eyed kitty sees dead people.

Cat behaviors, 1 Cat be



PEARLS

Get a vacay day for upselling

A smart attendee at CVC Kansas City shared this tip with us. We liked it: "Upselling" sounds bad, but in the veterinary practice, isn't it really a veterinary team member who makes sure a pet owner knows just how important every aspect of preventive care is? We give a paid day off to the employee who upsells the most in a month (parasite preventives, vaccines, toe nail trims, etc.).

—Cathy Murray Manager Anderson Animal Hospital Des Moines, Iowa

Clients testy about heartworm testing?

Pet owners who faithfully give their dogs heartworm preventives every month may scoff at your suggestion of an annual heartworm check, but perhaps they just need one good reason to invest in the test. This printable



handout gives four: protection limitations, testing limitations, resistance and insurance. Visit dvm360.com/hwtest

Low-stress care brings pride and respect to the veterinary team

CVC educator Jonathan Bloom, DVM, has seen the effects of the low-stress practice revolution, and they're not just for the benefit of pets. In this video he explains how his own staff has embraced the ideology and has become a stronger team. dvm360.com/teampride

Take the mess out of drawing doses



Tired of sending messy syringes full of deworming medication home with your clients? Hack the process to make it easier on you, your client and your patient. All you'll need are syringes (sized appropriately, of course) and heavy-duty nail clippers.

Step one: Once you've chosen your appropriately sized syringe, discard the needle. Make sure you keep the cap, though!

Step two: Trim off the top and the bottom of the cap with your handy-dandy pair of heavy duty nail clippers.

Step three: Put the cap back on the syringe, draw up the appropriate dose and discard the messy cap.

Voila! You now have a clean syringe of medication to dispense to your client. Your mess-free clients and patients will thank you.

—Kim Murray, practice manager Seville Animal Hospital, Seville, Ohio

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Got a black belt in management?

Let's cut to the chase. You're the best around, and nothing's gonna ever keep you down. So it's time to stand up and be recognized. (We know you don't like to wax on about how awesome you are, but the prize comes with free CE, including a free registration to a future CVC.) Check out the awesome prizes and enter the 2017 dvm360/VHMA Practice Manager of the Year contest today at dvm360.com/PMOV.

Psst, team members. Nominate your own Hanshi—that's the big dog at your dojo for you newbie martial arts peeps—for Practice Manager of the Year. Visit dvm360.com/PMOy to tell us how your manager kicks some major tail feathers.







Don't throw your Vetrap roll away!

Struggling to keep cephalic IVCs patent due to leg position (especially in those chondrodystrophic patients!) while your patient is anesthetized? Good news! Kat Kerstetter, LVT, of VCA Bellevue Veterinary Hospital in Bellevue, Washington, has found a pretty crafty fix.

Don't throw out your empty Vetrap roll!

Kerstetter says that she has a drawer dedicated to their 2-inch Vetrap tubes, near their dental wet table for easy access.



Taking secure measures



When the patient with a cephalic IVC becomes occluded, place the Vetrap roll in the bend of the patient's elbow, then use the Vetrap material to secure it in place—not too tight, Kerstetter says—just enough to prevent the tube from falling away.

Give a satisfied nod and pat yourself on the back

Kerstetter says that when placed properly, the empty Vetrap roll doesn't block the ECG lead location, and also prevents the patient's leg from bending to the point of occlusion. And now everyone can rest a bit easier.



Ticks And Canine Disease

The rise of ticks in the United States and the risk to your patients.



The Growing Threat

Ticks now pose a greater threat to dogs across the country than ever before. Several species of ticks – and the diseases that they can transmit – are now commonly found in parts of the country where they previously did not exist.

What's to Blame?²⁻⁶

Some potential causes include:

- Reforestation
- Wildlife conservation, relocation and restocking
- Climate changes
- Migratory birds
- Decreased environmental pesticide application
- Increased human involvement in forested areas
- Other

Tick-Borne Diseases



Blacklegged (deer) tick⁸

(Ixodes scapularis)

Associated with:

- Lyme disease
- Anaplasmosis



American dog tick8

(Dermacentor variabilis)

Associated with:

- Rocky Mountain spotted fever
- Tularemia

Brown dog tick⁸

(Rhipicephalus sanguineus)

Associated with:

• Rocky Mountain spotted fever



Lone star tick8

(Amblyomma americanum)

Associated with:

- Ehrlichiosis
- Tularemia

A Year-Round Threat

Ticks are more than just a summer nuisance. These hardy parasites can thrive – and hunt – in temperatures as low as 40 degrees.⁷ The rising populations of ticks across the U.S. have led to an increased risk of exposure for many pets. Given the resilience of ticks, this risk can be high for many months of the year, even year-round in some areas.

Where Ticks Prey

Ticks lurk in many of the places dogs love to go, including:

- Parks
- Wooded areas
- Nature trails
- Campsites

Even in urban areas, ticks can be brought into residential yards by hosts like white-tailed deer, raccoons, wild turkeys, coyotes, and the neighbors' pets.²

Complete Tick Life Cycle = Often Two – Three Years



Blacklegged Tick and Canine Lyme Borreliosis(CLB)

In North America, only one tick genus of veterinary importance has been found to effectively harbor and transmit the bacterial agent of canine Lyme borreliosis (CLB). The genus *Ixodes* includes the blacklegged tick (*Ixodes scapularis*) and the Western blacklegged tick (*Ixodes pacificus*).

I. scapularis is mainly found in the eastern half of the United States, though dryer and hotter microclimates within this zone may not harbor as many ticks.

I. scapularis is a three-host tick, successively feeding on a different mammal during each of its three growth phases. It is mainly a forest dweller, spending most of its life either in the leaf litter – where moisture is high and the risk of drying out is low – or on leafy green vegetation lower than knee-height.⁹

The adult stage of *I. scapularis* prefers to feed on dogs. Adult feeding runs from October through April.¹⁰

Lyme Disease Today

Canine Lyme disease has become a major concern in the United States and Europe over the last 20 years. More recently, the disease has been increasing in parts of the U.S. that previously only had sporadic cases. Practitioners face many challenges when it comes to Lyme disease. The following guidelines and protocols are used to help protect veterinary patients.

- Diagnosis: Verifying a sick dog that is serologically positive actually has Lyme disease.
- 2. **Treatment:** Determine what antibiotic to use, how much and for how long.
- 3. **Monitoring:** Determine when, and how, practitioners should monitor non-clinical dogs for evidence of *Borrelia burgdorferi* infection.
- 4. **Prevention:** Consider how practitioners can prevent Lyme disease from affecting their patients.

Diagnosis: The apparent lack of clinical signs in many dogs with Lyme infection can make the diagnosis of Lyme difficult. In fact, clinical signs, including those below, are observed in just 10% of infected dogs:

- Lameness
- Lethargy
- Joint/limb swelling
- Fever
- Lymphadenopathy

Staying Alert

The key word is vigilance. Even if you do not live in a state that is known to be endemic for CLB, remember that many dogs and their owners routinely travel in and out of areas thick with *lxodes scapularis* ticks carrying or infected with *Borrelia burgdorferi*. Awareness, knowledge of testing, treatment and prevention procedures are important for veterinary staff members, regardless of geographic location.

Areas Inhabited by Blacklegged Ticks



A multipronged approach is important to help protect your patients against Lyme disease and the ticks that transmit it.

- Vaccinate.
- Use tick control.
- Remove ticks daily: It takes at least 48 hours for an infected tick to transmit *Borrelia* to a dog. Pet owners in areas with a heavy tick burden should examine their pet for ticks daily, and carefully remove any tick they find.

The Lone Star Advance

Lone star ticks (*Amblyomma americanum*), once isolated to specific regions, are on the rise in new parts of the country.^{2,11}

Habitat^{2,3,4,11}

Where:

- Woodland habitats with dense underbrush
- Grassy meadows and young forests
- As far north as Michigan, Maine and Ontario, Canada

Seasonality^{2,3}

When:

- Peak activity varies by geographic region
- Can be found on pets 8-9 months of the year
- Larvae found late summer into fall
- Nymphs found March September; generally peaking May - June
- Adults found late February June; may be observed through the fall



Threat

Diseases transmitted^{2,3,4,11,12,13} by the lone star tick include:

- Ehrlichiosis
- Heartland virus
- Southern Tick-Associated Rash Illness a Lyme disease-like infection
- Rocky Mountain spotted fever (Rickettsia rickettsii)
- Tularemia (Francisella tularensis)
- Red meat allergy

Stay Vigilant Against the Growing Threat of Ticks!

"The lone star tick worries me. They've spread from Texas all the way to Michigan, Ontario and several southwestern counties in Maine – and they transmit a wider range of disease than *lxodes scapularis*."

- Dr. Michael Dryden, DVM, MS, PhD, Kansas State University

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- ³ Childs JE, Paddock CD. The ascendancy of Amblyomma americanum as a vector of pathogens affecting humans in the United States. Annu Rev Entomol. 2009;48:307-337.
- ⁴ Paddock CD, Yabsley MJ. Ecological havoc, the rise of white-tailed deer, and the emergence of Amblyomma americanum-associated zoonoses in the United States. In: Childs JE, Mackenzie JS, Richt JA, eds. Wildlife and Emerging Zoonotic Diseases: The Biology, Circumstances and Consequences of Cross-Species Transmission. Berlin Heidelberg New York: Springer Science + Business Media; 2007:290-324.
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- ⁷ Tick Populations To Explode In 2013. Veterinary Practice News website. http://www.veterinarypracticenews. com/March-2013/Tick-Populations-To-Explode-In-2013/. Published March 28, 2013. Accessed June 17, 2016.
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- ⁹ Piesman J, Schwan TG. Ecology of *Borreliae* and Their Arthropod Vectors: In: Samuels DS, Radof JD, eds. *Borrelia, Molecular Biology, Host Interaction and Pathogenesis*. Norfolk, UK: Caister Academic Press; 2010:261-263.
- ¹⁰ Schematic of the seasonal activity of the various life stages of *Ixodes scapularis*.
 Image courtesy of Tick Encounter Resource Center, URI.
- ¹¹ Dryden MW, Payne PA. Biology and control of ticks infesting dogs and cats in North America. Vet Ther. 2004;26:2-16.
- ¹² Savage HM, Godsey MS, Lambert A, et al. First detection of heartland virus (Bunyaviridae: *Phlebovirus*) from field collected arthropods. *Amer J Trop Med Hygiene*. 2013;89(3):445-452.
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If you were Dr. Evil, you'd ask,

"Are those sharks with frickin" laserbeams attached to their heads?"And we'd say no, but these therapeutic lasers are arguably just as cool.

Loving and living with a cat with FIV

Your FIV patients can live full and healthy lives, with a couple of cat-veats.

eline immunodeficiency virus ■ (FIV) can be a scary diagnosis for cat owners, especially if they associate it with the human immunodeficiency virus (HIV) and AIDS. So what you do you do if a cat becomes infected or the owners want to adopt a cat that is already infected? We asked feline practitioner Kelly St. Denis, MS, DVM, DABVP (feline), owner of Charing Cross Cat Clinic in Brantford, Ontario.

Is it advisable to adopt a cat with FIV?

Cats with FIV can live long and healthy lives. In fact, studies over the last 10 vears or so have shown that cats with FIV often live as long as otherwise healthy cats that do not have this virus. Many of these cats age normally and never show signs of FIV-related illness.

FIV-infected cat might develop or carry could be transmitted to humans. For example, cat scratch fever is caused by a bacteria carried by fleas. All cats, including FIV-infected cats, should receive regular flea prevention consistent with the risks in the area they live. This will prevent the presence and transmission of the bacteria known to cause cat scratch fever in humans.

Would there be a risk in other pets in the household?

FIV is transmitted primarily through bite wounds between cats. Other pets such as dogs would not be at risk of infection. If a client has more than one

cat in the household and they do not get along, there is an increased risk that the virus can be transmitted between cats during fighting and biting. Thus, cats that do not get along should not be allowed to interact. A behavioral consultation should be scheduled with the veterinarian in an effort to identify causes of intercat aggression and possibly find a way for the cats to get along. If cats simply will not get along, then they will need to be housed separately, or one of the cats will need to be rehomed. The ability to transmit the virus by bite wound is also the reason that it is important to keep FIV-infected cats indoors. They can have access to an outdoor enclosure, but when they are allowed to roam free outside, they may spread this virus to other cats in the neighborhood.

What precautions would What's the best the owners have to take? way to explain the disease and the FIV is a cat-specific virus—it can only risks to clients?

be transferred between cats, and no FIV is an immune other species can be infected. Since deficiency virus FIV can cause immunosuppression belonging to the same and, in theory, can increase the risk of a cat succumbing to certain infectious diseases, it is important to have the cat receive twice yearly veterinary care. Some

family of viruses that include human immunodeficiency virus (HIV) causing human AIDS. This is not to say that the viruses can cross from cat to human or human to cat,

infectious

diseases

that an





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¹ The same active ingredients for heartworm protection and internal parasite control as the leading competitor, but at a lower price.
2 Please refer to Tri-Heart* Plus Prescribing Information for more detail.
3 Average discounted price of Tri-Heart* Plus compared the Heartgard* Plus. December 2016, 57-69 US Flea and Heartworm Markets, Brakke Consulting and Average price of Tri-Heart* Plus compared to Heartgard* Plus as per Price List, Merial* Brand Pet Products Effective February Ist, 2017.



Chewable Tablets

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

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

PRECAUTIONS: All dogs should be tested for existing heartworm infection before starting treatment with Tri-Heart® Plus chewable tablets. A mild hypersensitivity-type reaction, presumably due to dead or dying microfilariae and particularly involving a transient diarrhea has been observed in clinical trials with ivermectin alone after treatment of some dogs that have circulating microfilariae.

Keep this and all drugs out of the reach of children. In case of ingestion by humans, clients should be advised to contact a physician immediately. Physicians may contact a Poison Control Center for advice concerning cases of ingestion by humans.

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

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

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

Store at controlled room temperature of $59-86^{\circ}$ F ($15-30^{\circ}$ C). Protect product from light.

For Technical Assistance, call Merck Animal Health: 1-800-224-5318

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but merely explains why the medical consequences of FIV in cats can be very similar to those experienced by people with HIV. As with people living with HIV, cats infected with FIV require extra medical care and extra attention to their diet and health. And as with people living with HIV, cats infected with FIV can live long, healthy lives. FIV is not easily transmitted between cats. Therefore, other than ensuring that there is no fighting and biting, most cats with FIV can live happily with one or two other cats and never spread their virus.

What does lifelong care look like for a cat with FIV?

Cats with FIV will need to live in an environment that is relatively stressfree, which may include minimal extra pets in the household. A home with only one cat and no other pets is best, but if there are other cats or dogs, it is best to restrict the numbers and avoid taking in new pets. Resources such as food, water, litter boxes, bedding, scratch posts, safe places to hide and toys should be amply supplied so that the cat never stresses about what is available for use. These cats should be fed a high-quality, commercially prepared diet. Raw food diets can be especially dangerous to FIV-infected cats as they may have suppressed immune systems, making them more likely to get sick from the bacteria in raw food diets.

Cats infected with FIV should receive monthly parasite control, regardless of their status as indoor cats. This includes parasite control for intestinal worms and external parasites such as fleas, mites and ticks. These cats require routine, but more frequent medical care than uninfected cats, and should see their veterinarian every six months. At each veterinary visit, blood should be drawn for clinical chemistry and complete blood count testing.

Cats infected with FIV still need to be vaccinated. Veterinarians should address the vaccination needs based on lifestyle as outlined in the American Association of Feline Practitioners Vaccination Guidelines (2013) and the American Association of Feline Practitioners Retroviral Management Guidelines (2008). If clients notice that an FIV-infected cat is not feeling well, they should not wait to "see what happens," but schedule an appointment with the cat's veterinarian right away.

What else should owners know?

All cats have unique, wonderful personalities. And since FIV-postitive cats are able to live long, healthy lives, there is no reason that they cannot be a part of someone's family. There are some who consider that FIV cats may pose too much of a risk to other cats or that the FIV-positive cat is destined to become ill from the virus. These individuals may suggest euthanasia of a cat that tests positive for FIV. This is an absolutely unnecessary measure. Cats infected with FIV should never be euthanized, unless they are actually experiencing a severe, debilitating illness that cannot be treated (as we would with any other cat).

Don't miss the case of Chloe, the immunocompromised kitty

After Chloe became infected with FIV, her owners worried about her



new indoor-only status and how her diagnosis would affect their other pets Go to **dvm360.com/Chloe** to read how her story turned out.

Get clients on the right page with a pet's diabetes diagnosis

By Lauren E. Demos, BVMS, HonsBSc, resident ABVP (feline)

Help protect pets' health—and preserve the precious bond between pets and family members—by teaching them to avoid these mistakes.



MISTAKE

NO. 1 DIET

For cats, particularly, clients sometimes don't realize the importance of diet changes. Cats eating only canned foods are much more likely (in my experience) to experience clinical remission versus cats that eat only dry food, or a combo of dry and canned. Even simply overfeeding dry treats can have an impact on these cats. So any little adjustment we can make to tailor the diet towards canned food can be helpful.

NO. 2 DOUBLE

Thankfully extra insulin dosing isn't too common, but it's of great concern. When it happens it's often because one person in the household gives the insulin and another person repeats the dose a few hours later, unaware. Either keeping a medication calendar or having the same person dose daily can help to prevent these occurrences.

SLOPPY NO. 3 SYRINGE NO. 3 DISPOSAL

Improper disposal of syringes is another worry. Local ordinances vary, so know what's appropriate for your area and share this information with your clients. Regardless, needles should be disposed of at home via sharps containers, and afterwards according to your local guidelines.

The American Association of Feline Practitioners (AAFP) improves the health and welfare of cats by supporting high standards of practice, continuing education, and scientific investigation. The AAFP has a long-standing reputation and track record in the veterinary community for facilitating high standards of practice and publishes guidelines for practice excellence, which are available to veterinarians at the AAFP website. Over the years, the AAFP has encouraged veterinarians to continuously re-evaluate preconceived notions of practice strategies in an effort to advance the quality of feline medicine practiced. For more information, visit www.catvets.com.

sorry, page not found

Leptospirosis vaccine:

Every dog, every time?

Veterinarians used to have a nuanced view about the need for leptospirosis vaccines for all canine patients. Why give a vaccine for something a dog just wouldn't be exposed to? But circumstances have changed: more exposure, changing climates, better vaccines.

While you likely don't make the decisions about when a vaccine is right in a medical case, you do help educate clients, watch for signs and prepare to talk at least a little about this significant risk and the important vaccine that helps. Here's what two clinicians with different backgrounds say about making the right choice on leptospirosis vaccines for dogs.



"This isn't too nuanced of an answer. This is a contagious and potentially fatal disease prevalent in most parts of this country. We used to hesitate in the past (sometimes) to give this vaccine in small breed dogs, because they seemed to be somewhat reactive to the vaccine. Things have changed over the last five or so years. Leptospirosis is now more prevalent, and vaccines are safer. Bottom line, you always want to vaccinate based on pet lifestyle, but there's no other way than to say this is a core vaccine for just about all dogs."

— Jeff Rothstein, DVM, MBA, at Progressive Pet Animals Hospitals in Michigan

THE SPECIALTY DOCTOR

"My general thoughts are: If your canine patient population is at risk for leptospirosis, then the annual, four-serovar vaccine is recommended. This isn't just for hunting dogs that live in rural areas anymore. With the changing demographics of dogs at risk (e.g., small dogs, inner city, etc.), global warming, and lack of vaccination and protection in many dogs now, we are seeing increased prevalence of leptospirosis. It's really important to discuss the risks with pet owners. As a criticalist, I don't 'do vaccines,' but even my dog is vaccinated for lepto; my dog is high-risk: loves to swim, in Minnesota by the Mississippi River, lives in the city and hikes with me a lot."

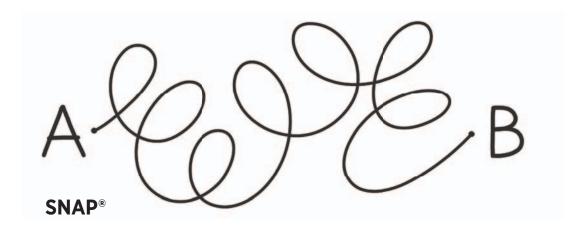
- Justine Lee, DVM, DACVECC, DABT, at Animal Emergency and Referral Center of Minnesota

THE BOTTOM LINE?

UNE C

If you're a receptionist, think twice before downplaying the importance of any vaccine when a client asks you if it's really necessary. We know there's been quite a few years of vaccine skepticism in human medicine, but don't let that cloud your opinion when it comes to other species. Trust the veterinarians on this.

If you're a technician, and you didn't get on the leptospirosis bandwagon (and maybe rolled your eyes or shook your head sadly at an every-dog vaccination protocol), talk to a few experts and see if it's time to change your mind.





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DETECT. PREVENT. TREAT.





When the client says,

"Who cares what's in that food?

How to respond when clients fondly recall "the good old days" when Old Bingo ate whatever they didn't toss out in the trash.

By Kyle Wendy Skultety, LVT, CVT

When the client says: "Isn't all dog food the same? Dogs ate garbage for hundreds of years, so why do I have to get a special brand for Max?"

How would you respond? Check out the right (and wrong) way to handle this client's concerns.

DON'T SAY

"Dog foods are totally all the same! It's just marketing. You can save money by getting the cheapest one out there." DO SAY

"Pets today are enjoying better health because we've learned more about the nutrients they need. Garbage may have kept animals alive, but that doesn't mean they were in the greatest of health. All dog foods aren't the same. The better brands do food trials and incorporate high-quality ingredients to keep Max looking and feeling his best. Some dog foods don't provide a balanced diet, so it's important to read the labels and understand what you're getting. I can give you a handout on a simple way to read a pet food label [Ed's note: Find it at dvm360.com/labelmyths] and explain why the food the veterinarian recommended today is the best choice."

If your clinic sells food, this is your chance to educate the client about which food the veterinarian would recommend. This will increase food sales for your hospital, and you'll know that the patient is eating a high-quality diet.

Kyle Wendy Skultety, LVT, CVT, is technician supervisor at VCA Twin Rivers in East Windsor, New Jersey.

Appetizing client communication



Don't miss nutrition talks at CVC Virginia Beach by Deborah Linder, DVM, DACVN! She'll offer tips to talk nutrition with your clients, plus, give you case-based answers to how a nutritionist approaches the question, "What's the best pet food?" Learn more about the benefits of continuing education at CVC after **page 30**, or visit **thecvc.com/vb**.



CVM865 toolkit

Hey! You missed a dose!

Let's get real:
Veterinary
professionals
know preventive
lapses happen.
But what can
you do to help?
Your guide to
best heartworm
prevention
practices starts
here.
p4

HEARTWORM PREVENTION

March 2017 dvm360.com/toolkit

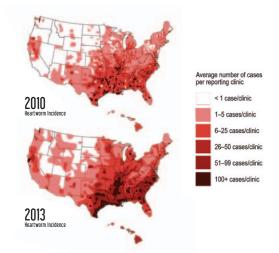
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Heartworm hacks

Fight Both Parasites Involved in the Heartworm Life Cycle

Despite worldwide attention to the dangers of mosquitoes and the consequences of diseases they transmit to humans, there is little awareness that the same mosquitoes are the vectors that transmit heartworms to dogs.

For decades, canine heartworm prevention protocols have not changed. From 2010 to 2013, there was over a 166% increase in reported positive heartworm cases,* and now canine heartworm has been diagnosed in all 50 states.





"At the CDC, mosquito control plays a crucial role in the interruption of mosquito-borne diseases, like malaria and Zika, in humans."

Robert Wirtz, PhD Retired Chief, Centers for Disease Control and Prevention (CDC)

"I think we are missing something in our heartworm prevention program."

John McCall, MS, PhD Professor Emeritus, University of Georgia College of Veterinary Medicine

What is Double Defense?

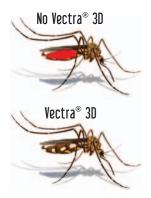
Killing and repelling mosquitoes on the outside with Vectra® 3D for Dogs and killing larvae on the inside with a heartworm preventive.

Why Double the Defense?

Research has revealed:1,2

Double Defense protects dogs from heartworms better than using a heartworm preventive alone. In fact, dogs protected with Double Defense protocol had no adult heartworms even using the JYD-34 strain of Dirofilaria immitis (one of the most resistant strains known).

Groups (8 dogs per group)	Anti-Feeding Efficacy	Avg # L3 Transmitted Per Dog	# of Dogs with Adult Heartworms	Avg # of Adult Heartworms Per Dog
Control	N/A	76	8	41
Vectra® 3D Only	98.1%	2	3	1.5
Milbemycin Only	N/A	78	8	17.1
Double Defense*	99.1%	1	0	0



Beyond Prevention

The anti-feeding and insecticidal activity of Vectra® 3D was over 99% effective in blocking the development of infective larvae in mosquitoes.

"We've really neglected the other parasite that's involved in the heartworm life cycle, and that's the mosquito."

Susan E. Little, DVM, PhD Regent's Professor of Parasitology, Oklahoma State University

In the studies using the Double Defense approach, there were:

- Fewer mosquito bites¹
- Fewer infected mosquitoes¹
- Fewer infected dogs²
- Fewer L3 transmitted²
- No adult heartworms in dogs²



"The research is compelling, and we are not asking owners to change what they are doing. We are just adding the fact that we want owners to reach for a product that has repellency and is mosquitocidal."

Nancy Soares, VMD AAHA Past President, Macungie Animal Hospital

When discussing regular heartworm prevention protocol with your patients, recommend they add Vectra® 3D to protect dogs from mosquito bites.

*Companion Animal Parasite Council

1. McCall, J.W., Hodgkins, E., Varloud, M., Mansour, A., DiCosty, U. (2015, July). Inhibition of the transmission of Dirofilaria immitis to mosquitoes by weekly exposure to microfilaremic dogs treated topically with dinotefuran-permethrin-pyriproxyfen. Abstract presented at the meeting of the American Association of Veterinary Parasitologists, Boston, MA.

2. McCall, J.W., Hodgkins, E., Varloud, M., Mansour, A., DiCosty, U., McCall, S., Carmichael, J., Carson, B., Carter, J. (2016, August). Blocking of the transmission of Dirofilaria immitis L3 (JYD-34 ML resistant strain) from infected mosquitoes to dogs and prevention of infection in dogs treated topically with dinotefuran-permethrin-pyriproxyfen and orally with milbemycin oxime alone or in combination. Abstract presented at the meeting of the American Association of Veterinary Parasitologists, San Antonio, TX.



While heartworm
preventives are
highly effective
and convenient for
clients to give,
compliance
persists as a
problem in
veterinary
practices. Even the
most conscientious
client can miss a dose
now and then, while
other clients have
much longer lapses.

Unfortunately, there's no one-size-fits-all answer to this question. Instead, veterinarians should consider the following questions:

- ? What is the prevalence of heartworm in your client's geographic region?
- ? Has the pet traveled with the owner? If so, what is the prevalence of heartworm in the area they visited?
- **?** What preventive is being used?
- ? When and where did the lapse occur?
- ? How many doses of preventive were missed?

The reason for these questions is that time and place have a great impact on heartworm risk. The risk, for instance, is much less when a monthly preventive is missed one time in Ohio in February

than when a three-month lapse occurs at that same location in the summer. Likewise, just a two-week lapse in summer can result in infection in the Mississippi Delta.

Macrocyclic lactones provide a safety net known as "reachback" or "retroactive efficacy," when given continuously for at least 12 months. The length of the reach-back varies by product, with all products proven to be about 95% efficacious against nonresistant strains in the laboratory when given for at least 12 consecutive months after lapse. This protective benefit can be useful but should not be relied upon as part of routine heartworm prevention.

Another important compound is doxycycline, which can be administered as monotherapy at 10 mg/kg twice daily for 30 days to kill L3 and L4 larvae—it even kills immature adults that have escaped or will escape macrocyclic lactone prevention.¹

Recommendations for treatment lapses

If the lapse is one month or less, reinstitute the preventive and conduct a heartworm test at the next scheduled visit if the visit occurs more than seven months from the current date. In highly

endemic areas, consider adding doxycycline therapy for one month. If a dog is receiving imidacloprid-moxidectin, a one-month lapse will likely not be problematic, provided the preventive had been given for at least four months continuously before the lapse.

If the lapse is two months or longer, reinstitute the preventive immediately and consider adding doxycycline for one month.

If the lapse is more than seven months, perform an antigen test and consider adding doxycycline to the macrocyclic lactone therapy for one month. For such protracted lapses, imidacloprid-moxidectin has been shown to have superior reach-back efficacy with doxycycline, when given continuously for 13 months post-lapse.²

In all instances, preventive therapy should be administered on a year-round basis, both for the animal's protection and to help ensure improved compliance in the future.

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1. McCall JW, Kramer L, Genchi C, et al. Effects of doxycycline on early infections of *Dirofilaria immitis* in dogs. *Vet Parasitol* 2011;176:361-367.

2. Chandrashekar R, Beall MJ, Saucier J, et al. Experimental *Dirofilaria immitis* infection in dogs: effects of doxycycline and Advantage Multi administration on immature adult parasites. *Vet Parasitol* 2014:206:93-98.

Heartworm prevention The questionable zero mosquito factor

Even areas with fewer mosquitos can be hotbeds of heartworm infection. *By Matthew Miller, DVM, MS, DACVIM (cardiology)*

eterinarians often refer to their locales as being "endemic" or "nonendemic" for heartworm. For those in many of the Western and Mountain states, the assumption is that if heartworm historically hasn't been a problem in the region, there's no reason to recommend yearly testing or heartworm prevention now. I moved to Phoenix—which is in a supposedly nonendemic region—less than 18 months ago. During that time, I've performed several surgeries for heartworm caval syndrome on dogs that had never left the Phoenix area.

Radiating factors

It is true that the incidence of heartworm is lower in this and other parts of the country than others, but it is clear that heartworm is very much a threat. In my experience, where incidence of a disease is thought to be lower, so is vigilance. When many unprotected pets live in such an area, just one heartwormpositive animal can have a large impact. To understand why, we first need to examine the

factors that cause heartworm to spread.

** Reservoir of infection. To

be a reservoir, the heartwormpositive animal needs to have
circulating microfilariae. The
culprit could be the dog next
door or a feral animal, such
as a coyote or fox. Here in
Phoenix, as in many urban
areas, we have a high coyote
population, and coyotes are an
important potential reservoir
for heartworm. Infected
animals brought in from other
parts of the country are another
important reservoir.

6 March 2017 I dvm360.com/toolkit

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* Mosquito vectors.

Mosquitoes that feed on a host animal with microfilariae are soon in a position to transmit infective larvae to an unprotected animal. Most mosquitoes don't travel long distances; instead they spend most of their lives in a 400-meter circle. But a lot can happen within that circle. If an owner has a reservoir in the form of an infected neighborhood dog, or if the owner lives near a golf course where coyotes hang out in the evening or even sleep behind the house, all it takes is the presence of mosquitoes attracted by standing water on the property to put mosquitoes in proximity to infected host animals.

mosquitoes need access to unprotected pets. Unless a dog is receiving a heartworm preventive, there's risk. Whether the dog only goes outside for brief bathroom

breaks or enjoys long daily hikes, it is exposed to mosquitoes. Taking precautions that limit mosquito exposure certainly helps, but these precautions can't completely eliminate the risk of heartworm transmission.

→ Protection. As noted, the above factors can be almost completely nullified if pets receive year-round prevention. The American Heartworm Society (AHS) guidelines also recommend 12-month prevention to control other pathogenic or zoonotic parasites and to enhance compliance.

One small step for canine kind

As veterinarians, our sphere of control is really our practice area, but within that area, we have several important responsibilities. First, we need to recommend year-round use of preventives. Second, when we do diagnose an infected dog

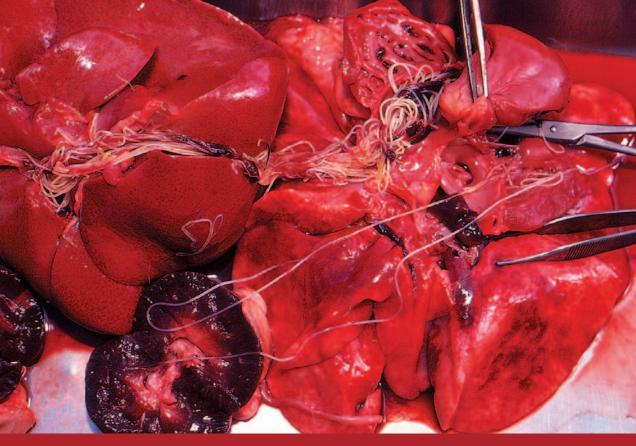
with circulating microfilariae, we need to take prompt action to treat it. By eliminating the microfilariae, we decrease the risk that that dog will serve as a source of heartworm infection to other dogs.

We may not be able to do everything to reduce risk—we can't give preventives to coyotes or prevent infected dogs from moving into a neighborhood. But each time we work with a client to reduce the risk of heartworm transmission in a 400-meter circle where an infected mosquito might live, we're making a positive difference for the pets in our practice area.

7 facts about mosquitoes

Arm your clients with the handouts on **pages 20** and 21. And don't miss the discussion of mosquito repellant and environmental control measures on **pages 12 and 13**.





The reminder quagmire

Forgetting that monthly preventive—it's so easy to do, even for veterinarians and their own pets (you know you've forgotten a time or two!). Here's why and how to not let clients skip a dose again. By Tom Nelson, DVM

hile the American Heartworm Society (AHS) recommends that pets be protected from heartworms year-round, spring is the season when heartworm checks tend to be top of mind for both veterinarians and pet owners. It follows that spring is also when troubling questions about heartworm come up.

So, do heartworm reminders matter?

Years ago when the six-month injectable heartworm preventive was introduced, I created an automatic reminder system for owners to bring

their dogs in for injections. That prompted one of my technicians to ask a very good question: Why don't we have a reminder system for clients who give monthly preventives? So we created one for those clients, too.

When I give talks to veterinarians and ask them how many send reminders for heartworm tests, more than 80 percent raise their hands. But when I ask how many send reminders about giving preventives, only 20 to 25 percent do so. If we consider what a challenge heartworm compliance presents for our clients, it's clear this needs to change.

ISSUE 1

Getting a preventive on board in the first place

Studies have consistently borne out that less than half of owners whose dogs receive veterinary care give preventives. In the south and southeast, where heartworm disease is very common, percentages range from 42 to 45 percent. In the far west, only 18 percent of owners give preventives, in spite of the fact that roundworm incidence is actually much higher in the west than the southeast—and most heartworm preventives protect against roundworms as well as heartworms. The midwest and northeast fall somewhere in between. with roughly 38 percent of owners giving preventives.¹ My practice in Alabama is no exception. In spite of my conviction that heartworm prevention is vital, more than half of the dogs in my practice leave the veterinary office without their owners' purchasing heartworm preventives.

ISSUE 2

Giving a preventive reliably and year-round

When you make reminder calls to pet owners about refills, what do they usually say? "I still have medication left." Giving preventives on time, every time, isn't happening enough of the time. Sadly, I've been guilty of this myself. In the 1980s, when we only had daily heartworm preventives, I was extremely compliant with my two Labradors—each had their pill every morning when I fed them. However, a year after I switched to a monthly medication in the late 90s, my own dog turned up positive for heartworm disease. I couldn't believe it. But when I looked at the medication I had been using, I had only given nine of the 12 pills. Unfortunately, this is what happens with our clients, too.

Just jog their memory

As veterinarians, we tend to be sensitive about making recommendations that cost our clients money. However, research on heartworm compliance tells us that cost is not the barrier—it's simple forgetfulness. That's why communication is key. Back in 2001, when my

practice started sending routine reminders about monthly preventives, we saw a 33 percent increase in our monthly preventive sales. Refill reminders work because they can help overcome the obstacle of forgetfulness.

Fortunately, reminding clients to give heartworm preventives has never been easier. It's not like the old days when we had to send handwritten postcards—we can readily set up email or text reminders, and both veterinary companies and associations have programs to help us. So take the time, and help your clients be compliant. Heartworms are easy to prevent, but difficult to treat.

Reference

1. Data on file, Zoetis. Vetinsite Analytics, 9/2013.

Tools from the American Heartworm Society

Use these video tools to bring your team up to speed on your heartworm disease knowledge and prevention education.

How to stop breeding resistant heartworms

Clarke Atkins, DVM, DACVIM, professor emeritus at North Carolina State University, says it's the right drug at the right time with the right testing that will help reduce heartworm resistance to medication.



"Veterinarians need to realize that the use of macrocyclic lactones is imperative," Atkins says. "They need to be used year-round, and we need to test [patients] yearly." The problem, veterinarians know, is in the gap—when a dog misses a heartworm preventive dose and is infected.

"In areas in which the exposure potential is massive, like the Deep South where there are lots of mosquitoes and a very high mosquito infectivity rate, it's even more important," he says. "I believe under those circumstances that small errors are compounded. So a five-day lapse lin administering heartworm preventivel in North Carolina is not tolerable in Baton Rouge at certain times of the year."

What's the trick? Testing and the right antibiotic before a new heartworm preventive dose.

"To prevent drug resistance,



we need to make sure that dogs that are infected that go on a macrocyclic lactone have clearance of the microfilariae," Atkins counsels. "I believe really strongly in doxycycline for this. It gets rid of the microfilariae and renders them noninfectious. You can protect the dog with a macrocyclic lactone and not have to worry about producing greater resistance."

Suspicious for heartworm preventive resistance? Put it to the test

In this video, Ray Kaplan, DVM, PhD, DEVPC, DACVM (parasitology), outlines the plan he and Andrew Moorhead, DVM, PhD, both in the Department of Infectious Disease at University of Georgia's College of Veterinary Medicine, derived to



help veterinarians diagnose a case of true heartworm resistance to preventives.

In essence, the protocol

involves determining the amount of microfilariae in the blood. "If a dog presents with a history of compliance and a proper testing history and it's microfilaremic, right

from the start that's going to be suspicious," says Dr. Kaplan. Run this test:

Obtain a blood sample, and perform a Knott's test to determine the number of microfilariae present per milliter of blood.

Treat the dog with a microfilaricidal dose of a macrocyclic lactone.

Test another blood sample one week later to determine the number of microfilariae now present.

"We would expect to see greater than 75% reduction," says Dr. Kaplan. If it's less than that, it's time to suspect resistance.

Arm yourself against mosquito vectors

When making recommendations to pet owners about heartworm prevention, do you use a hardfacts approach? If you want to arm yourself with information about the range of vector-transmitting mosquitoes, there are two sources that Tanja McKay,



PhD, professor of entomology at Arkansas State University, recommends. The Centers for Disease Control and

Prevention maintains geographical distribution maps of two species of mosquitoes, Aedes albopictus and Aedes aegypti, based on more than 20 years of research, though McKay notes that maps of the other species of mosquitoes are also needed.

McKay urges participation of all knowledgeable stakeholders to update and gather more information about where the mosquitoes are occurring and which are most positive for heartworm to help veterinarians and pet owners make better decisions about how to handle heartworm transmission in the future.



New research cited in support of change to heartworm protocol

Study examines effects of topical repellentinsecticide plus oral heartworm preventive on development of heartworm disease.

ew research conducted by John McCall, MS, PhD, professor emeritus at the University of Georgia College of Veterinary Medicine, shows that topical application of dinotefuran-permethrin-pyriproxyfen (DPP), the active ingredients in Ceva Animal Health's Vectra 3D, can help block the transmission of *Dirofilaria* immitis from mosquitoes to dogs. The research was presented during a press conference organized by Ceva promoting a multimodal approach to canine heartworm prevention during the American Veterinary Medical Association (AVMA) Convention in 2016

McCall's research was the second phase of a study that, according to Ceva, supports a "double defense" protocol that protects dogs against the heartworm vector—the mosquito—as well as the heartworm itself. This protocol involves use of a topical repellent-insecticide product (DPP, which is indicated for prevention of flea and tick infestations) plus an oral heartworm preventive such as milbemycin oxime. The first phase of the study, presented in March at the Western Veterinary Conference, demonstrated that DPP helped prevent the transmission of heartworms from infected dogs to mosquitoes.

Christopher Rehm, DVM, incoming president of the American Heartworm Society and a practice owner in Mobile, Alabama, said during the AVMA press conference that the new research was a "protocol changer." "Multimodal therapy is nothing new to veterinary medicine," Rehm said, "and it's about time heartworm caught up with that."

32 uninfected dogs were divided into four groups of eight: one group treated with DPP only, one with DPP plus milbemycin oxime, one with milbemycin oxime only, and one with nothing. The dogs were then put into contact with mosquitoes infected with D. immitis strains

resistant to milbemycin oxime, which are known to be infecting dogs in the Mississippi Delta region of the United States.

Groups (eight dogs each)	Average number of infective larvae transmitted per dog	Number of dogs that developed adult heartworms	Average number of adult heartworms per dog
Control	76	8	41
DPP only	2	3	1.5
Milbemycin oxime only	78	8	17.1
DPP plus milbemycin oxime	1	0	0

"This is a new area to explore in veterinary medicine ... After fighting heartworm the same way for decades, it's time for a new approach, and that includes fighting the mosquito as well as the heartworm."

—John McCall, MS, PhD

Read more

This article was posted on August 11, 2016. To read more about this research, go to dvm360.com/heartwormtoolkit.

Why aren't you talking about feline heartworms?

Feline heartworm has been diagnosed in all 50 states, and it was important enough the American Association of Feline Practitioners crafted an entire campaign about it. So why don't veterinary technicians talk about preventive care as much as they could? By Brendan Howard, dvm360 Business Channel Director



veterinary staff to recommend less vaccines and often no preventive medications for cats who stay strictly indoors."

But because the health consequences for an infected cat are so grave, Miller really wants to press the point home with cat owners.

We need to remind them that although the chances are greatly lowered, it's possible for indoor cats to be infected with heartworm," she says. "It only takes one mosquito to transmit the disease, and cats who live in areas of larger mosquito populations are at an even greater risk."

OK, OK, you knew all that already. So now the question is:

Why don't YOU recommend it all the time?

"I believe that many veterinary staff members are reluctant to push feline prevention medications either because they themselves do not believe in their necessity or because they have experienced a long history of clients declining them," Miller says, echoing the reality that for many DVMs and their teams, too many "no" answers over a day, a week or a career can be exhausting if you take them personally. Don't. Up your game, Miller says.

"This is where educating ourselves the best we can about the risk for heartworm disease can aid in accurately and efficiently making our recommendations."

When you believe heartworm preventive is important, you'll start down the road to be the best advocate for heartworm preventive for cats in the practice.





>>> Scan to download this handout to educate clients about the risks of heartworm disease for their cat.

GET HOT FOR HEARTWORMS

Uhhh, I could have phrased that better, in retrospect. Regardless, here are three steps from Ciera Miller, CVT, VTS (clinical practice), to get your pulse pounding to educate clients about heartworm disease and prevention. (See? I made a heartbeat joke there.)

Get updated education for staff members. Many studies have shown that feline heartworm disease is more prevalent than we'd thought in the past.

Get help from your favorite, trusted veterinary drug reps, who may have educational materials on heartworm disease, prèventive measures and annual screening tests.

Put it all to work. Team members who take the opportunity to learn more about the disease may be more willing and better equipped to have the dreaded feline heartworm prevention talk.

"The more we know, the better we can continue to raise the standard of care for our patients." —Ciera Miller, CVT, VTS

Dogin a box: Battle boredom with comfortable quiet time

Help dogs (and their owners!) survive confinement during treatment for heartworm disease.

By dvm360.com staff

hile a heartworm diagnosis is tough news for dog owners, dogs can be safely and successfully treated. The American Heartworm Society's 2014 Current Canine Guidelines for the Prevention, Diagnosis, and Management of Heartworm (Dirfilaria immitis) Infection in Dogs treatment protocol calls

for, in most dogs, preadulticide treatment with a heartworm preventive (macrocyclic lactones) and doxycycline, as well as three injections of melarsomine to kill the adult worms that threaten the infected dog's life and long-term health.

Minimizing side effects of treatment, however, is heavily dependent on keeping the dog quiet throughout the treatment period and six to eight weeks beyond the last melarsomine injection. Why? When adult heartworms die, pieces of the decomposing worm bodies can block blood vessels in the lungs, causing potentially fatal pulmonary emboli. If exercise or excitement cause the treated dog's heart rate to rise, pieces



of decomposing worms can be forced into the tiny blood vessels of the lungs, causing further complications. The more pronounced the clinical signs of heartworm disease are, the more restricted any activity or excitement need to be.

While your veterinarian oversees the administration of medications for heartworm

treatment, it's up to the pet owner to ensure their dog's exercise and activity are strictly restricted. This can be challenging, especially if the dog is high-energy and accustomed to lots of exercise and family interaction.

Debra Horwitz, DVM, DACVB, recommends using the term "rest time for recovery" rather than "cage rest" to help remind the owners that this really is similar to recovery from a surgery and to help get them on board with this sometimes arduous confinement task.

Offer these tips to help pet owners battle their dog's boredom and stay bonded with the owner during the prescribed treatment period.

Teach the dog to "settle and relax"

The goal is to create an environment that facilitates rest time for recovery. Dr. Horowitz recommends this method to owners to teach their dog to be calm and relaxed in a set location or space. The goal: get the pet to associate a word and place in the home with having a calm, relaxed posture. This can happen in the dog's rest time for recovery location.

- Have the dog lie on a soft rug or bed. Use soft petting, massage and a cue word to let the dog know to be calm and quiet.
- As the dog begins to relax, reward him with food and praise.
- Continue to calm him until his facial expression is quiet and his breathing is soft.
- Consider playing music created just for dogs to help set the mood.





Train the brain.

Although the dog's movement is restricted, his mind is not. New tricks and games that keep a dog's brain busy and body rested are great for eliminating boredom. Dr. Horwitz recommends teaching dogs to "shake" first with one hand and then another. He can also be taught a "chin rest" pose or to touch his owner's hand with his nose on command. Clicker training can also be employed to train the dog to follow quiet commands when he's in his crate.



Let him chew.

Bored dogs can be destructive to themselves or their environment. Channel the dog's natural desire to chew with safe, long-lasting chew toys he can enjoy while in his crate.



Owners can replace activity with affection, and keep their dog close by when doing quiet activities like reading or watching TV. Use outdoor bathroom breaks as a time to bring the dog to a new location near family. Dr. Horwitz notes that it may be best to restrict visitors while the dog is in treatment and to keep his crate away from windows—especially if he's prone to barking at passersby.

Make mealtime last.

For most dogs, eating is a fast business. Using a food or puzzle toy to slow consumption and provide play can keep dogs quietly engaged and content for hours. However, Dr. Horwitz cautions against using any toy that requires full body movement to get food.







Have a heart:

Heartworm preventive compliance

Appeal to veterinary clients' hearts and wallets with this client handout.

ired of getting the cold shoulder, the brush off **_** or, worse yet, the insistence that preventive isn't needed when it comes to your clients' assesment of their pets' heartworm risk? We thought so.

Whether your clients just don't realize the risk and serious implications of heartworm infestation or are just plain stubborn, here's a client handout that will appeal to both their heart and their wallet.





Scan to download now



reasons why dogs need yearly heartworm tests

If your veterinary clients treat monthly preventives as a guarantee, give them a reason (or four) to test their pets.

et owners who faithfully give their dogs heartworm . preventives every month may scoff at your suggestion of an annual heartworm check, but perhaps they just need one good reason to invest in the test.

This printable handout gives four: protection limitations, testing limitations, resistance and insurance.

Scan to download now



Heartworm disease:

Do your clients understand the risk?

Using prevalence maps from the Companion Animal Parasite Council, you can drive home the importance of year-round prevention to your clients.



The biggest key to preventing heartworm disease is client compliance with year-round preventive products. Get the conversation started with a highly visual representation of the infection risk in your area from the Companion Animal Parasite Council (CAPC). In 2015, one in 78 dogs tested for heartworm tested positive. Putting the risk in concrete terms will not only make it easier for clients to grasp, but will also drive home your wish to keep their pet healthy.

Scan to download now



7 facts about mosquitoes

Interesting, gross and downright frightening facts your clients need to know.

Inow thy enemy, right? Well, how much do you think your clients really know about mosquitoes (and no, we're not just talking about Zika "experts")? Get clients on the fast track to a greater understanding of the threats these little bugs pose to humans and pets with this client handout.



Scan to download now





Here's what to say to your price-sensitive clients (so ... every client).

he dreaded flea, tick and heartworm preventive product price questions—all veterinarians and technicians have heard them. What are good ways to respond? Consider these handy phrases for your team, suggested by Bash Halow, LVT, CVPM, at a session he led at CVC Kansas City.

Can't I just buy it

"We carry it for your convenience and because we can control quality."

What's the benefit of buying it here at your practice when I can get it cheaper online?"

"Because I'm your pet's doctor, and I want strong oversight on his/her health."

Why do you charge so much more than online retailers for the same product?"

> "Affordability is a very big concern for all of us here at this practice. We regularly talk about how to make things more affordable. We're not a big corporation. We're a member of this community, a supporter of this community and a direct advocate for you and your pet's well being. We're more expensive, but I hope you'll support us."

Halow also suggests adding in a specific amount to that last statement, such as "We're \$3 more expensive, but ...", if you feel comfortable doing so.

Another opportunity to approach the parasite preventive purchase during a wellness exam requires one simple change to your appointment reminder calls:

"Please bring in all current medications you're giving your pet, including any flea/tick and heartworm medications."

Your team will learn how many doses are left and be able to talk about the importance of keeping up with the preventives. And you'll be armed to answer any price questions!

There's a hack for that.

Put parasite woes to rest with these client education and communication tips.

"Heartworm prevention is an essential part of small-animal veterinary care—for both pets and their families. So during first appointments for clients with new puppies, I show the clients how to schedule a permanent monthly reminder in their phones. I help them input the reminder in the room so it's not a task they have to remember when they get home. I still have clients from over a year ago with the same ongoing reminder saying it helps them so much more than the calendar stickers."

"I recommend the injectable heartworm preventive to clients who have a hard time remembering monthly prevention by telling them that they only have to think about it twice a year instead of 12 times a year."

*Heart from a heartworm-infected dog who died about 25 years ago. Source: Spring Hill Animal Clinic, Spring Hill, Florida.



Visual aids:

- ✓ Handouts from dvm360: dvm360.com/parasitehandouts
- ✓ Posters with larger-than-life photos of parasite infections
- ✓ American Heartworm Society: heartwormsociety.org
- ✓ Companion Animal Parasite Council (CAPC): capcvet.org
- ✓ Veterinarypartner.com



a) Old Protocol

☐ Outside

Inside

b) New Protocol

☑ Outside

Inside

IT'S TIME TO FIGHT THE OTHER HALF OF THE HEARTWORM BATTLE.

Introducing Double Defense: a new protocol that fights the vector of heartworm, too.





Mosquitoes are the only vector of heartworms and have been feeding freely on dogs for decades. If you are prescribing macrocupic lactones, you're only fighting half of the battle against heartworms. It's time to take the fight to mosquitoes, too. New studies using Vectra* 30 to protect dogs against mosquitoes, along with a heartworm preventive, show there were fewer mosquito bites, fewer infected mosquitoes, fewer infected dogs, fewer L3 transmitted and no adult heartworms in dogs! Using Vectra* 30 and a heartworm preventive is proven to protect dogs from mosquitoes and heartworm. That's the power of Double Befense: a new heartworm protocol.



See what the experts are saying about Double Defense at Fightleartwormhow.com

DO NOT USE VECTRAB 30 ON CATS

Example Service Control of the Contr

Needs care 100 \$\$

When the client can't pay, know what to do and say. Expert and CVC speaker Danielle Russ, BS, BA, AS, LVT, says that there are silver linings you can give to these bleak situations.

CARE

By Hannah Wagle, Assistant Content Specialist



Fortunately there are options. Russ, a CVC educator, offers a few of her top tips.

me see the entire range. I feel for the team, the client

and especially the pet," she says.

Know the impact of clients who can't afford care

"If it happens even one time in a day, it can really destroy the morale of the whole hospital," Russ says. "Maybe it's someone you've known a long time and they've hit a rough patch. Maybe it's someone you don't know who thinks you're only in this for the money and makes you feel bad about it. They're all situations where we're providing a service with fees that we must implicate."

In these cases Russ says everyone walks away with memories of what happened—some worse than others.

Make sure you're on the same page

"Make sure that the client understands the value of what they're paying for and why it's actually a good thing to spend the money," Russ says. "I've seen it in emergency as we've gotten bigger: each case is different and it really comes down to how we present the information, how confident the client feels with the diagnoses and test recommendations."

And it's also important to make sure that you and your entire team are on the same page too. "Work as a team to get everyone to understand the value of themselves and how they contribute to these situations. Make sure everyone understands the key structures of the hospital so that there's no misunderstanding and you know exactly what you're talking about. Most importantly, make sure the entire team is standing behind these values—when they're confident in that, talking about it comes naturally."

Embrace selling your worth

Lastly, Russ says veterinary professionals need to stop thinking of themselves as insurance salesmen. "Associates complain that they don't want to be salesmen for pet insurance," Russ says. "The reality is, pets not getting the care they need because their owners can't afford it is what you're complaining about, and pet insurance is a solution."

And when it comes to higher rates, veterinarians shouldn't despair. "I don't think vets have been realistic with their worth, so we should be glad that rates have been going up. All of these things cost money; we need to charge what we're worth. Would you rather face euthanasia, or would you rather suggest pet insurance? This will never change if you don't accept it."

Russ explains this by talking about the research she has personally done on advancements in human medicine



WELLNESS PLANS AND PET INSURANCE

We asked Danielle Russ about both. Here's what she had to say.

> ON WELLNESS PLANS:

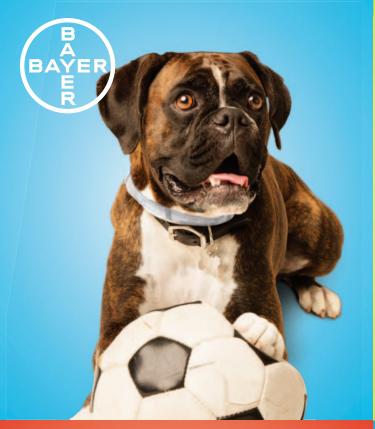
In general, I think it's a really good idea. The clients pay and they know what they get—the plans just have to be really clear on what that does and does not include. Pets seem to consistently live better and have less emergency care incidents on wellness plans because they're getting consistent visits from tip to tail and regularly getting evaluations. This benefits the pet as well as the pocketbook.

> ON PET INSURANCE:

I'm a full supporter of pet insurance. I wouldn't have said this a while ago; the plans were difficult and hard for veterinarians and clients to work with. But they've come a long way since then. They've gone to the flat-percent rate: Some are 90 percent, some include wellness, some don't. Pets that have pet insurance seem to live longer, see the vet regularly and clients won't be caught waiting until something is really bad until they decide to get their pet veterinary help.

> RUSS' PET INSURANCE PLAN TOP TIP:

Instead of giving clients a brochure for five insurance agencies, you should narrow it down to at least two—clients won't know how to decide because they're all so similar and you probably know better than they do.









Whatever your dog brings home, it shouldn't be fleas and ticks

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TALK IT OUT

Ask Danielle your pressing questions on this topic live at CVC in VIrginia Beach. She'll walk you through these difficult conversations at her session, "Needs care, no \$\$" on May 21. Visit

thecvc.com/vb to learn more. Then get free training about pet insurance online at dvm360.com/ teammeeting. compared to veterinary medicine. "In general, vet med is 10 to 18 years behind human medicine in all fields including business," she says. "I'm going back and looking at how human medicine progressed and where insurance came in and doctors' roles in that. At one time, doctors were in this exact situation. They themselves had to become salesmen in order to get their clients more affordable care."

Come together, right now, over patient wellness

When it comes down to it, Russ says that as a community, veterinary professionals need to come together and work this problem out, together. "We're moving toward a community awareness in general, particularly surrounding the aspects of depression and suicide, and the fact that technicians are leaving the industry because of this kind of stuff," Russ says. "We're all going to have to start working together."

The first step, Russ says, is to remember why you came into the profession in the first place. "In school, we learn quickly not to say that we're going into the field because we like cats and dogs. But the truth is, I really do like cats and dogs. It's one of the biggest reasons I'm in veterinary medicine. I respect them as well as the human-animal bond and the absolutely positive effect that each can get out of this relationship," Russ says.

With a common goal in mind, Russ says that it can be easy to work together to raise everyone up in hard times like this, which is the second step to creating a positive change. "It starts with a convention, like CVC, but you can work within your own local community. Ask questions about what works within clinics and what doesn't when a

client can't pay."

Russ then explains that in order to make change happen within the veterinary community, veterinary professionals must, well, make the change happen. "Actually doing something takes a lot of thought, practice and stepping out of your comfort zone. Taking action is hard, but that's what makes a great change."



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*Compared with dry diet alone.

References: 1. Data on file, Merial, Inc. 2. Steinberg D, Beeman D, Bowen W. The effect of delmopinol on glucosyltransferase adsorbed on to saliva-coated hydroxyapatite. Archs Oral Biol. 1992;37:33-38. 3. Vassilakos N, Arnebrant T, Rundergren J. In vitro interactions of delmopinol hydrochloride with salivary films adsorbed at solid/liquid interfaces. Caries Res. 1993;27:176-182.









Untangle tough talks on parasite prevention

By Jenna Stregowski, RVT

Ithough your practice may have a perfectly patterned parasite prevention protocol that works for most patients, sometimes you need to make alterations in the form of individual recommendations. You may have a compliant client who needs alternative ways to control parasites, or maybe you have a noncompliant client who needs easy-to-follow options. Sometimes even a pet's environment and lifestyle can dictate the need for a personalized plan.

As a member of the veterinary team,

you must be able to educate clients with confidence. Be sure you are familiar with the products available in your practice. Talk to the veterinarians in your practice so that you fully understand their recommendations for unique situations. You may even suggest a meeting so the whole team is on the same page when it comes to parasite control.

When the time comes to talk to clients about individualized parasite prevention, you will need to be clear, concise and supportive. Here are some tips to help with these client conversations.



The compliant client

A compliant client takes the veterinarian's recommendations to heart. She refills preventive products regularly and does her best to follow instructions. She asks questions when she is confused or concerned about something. With the compliant client, you mainly need to explain what the veterinarian recommends and why.

The scenario: Ms. Morgan brings in her golden retriever, Murray, for an exam to have his skin checked because he's been itchy. The vet finds evidence of fleas, but his skin is otherwise fine. The veterinarian recommends some antipruritic shampoo and asks you to discuss alternative flea preventions with the client. When you go in to discuss the products, Ms. Morgan seems confused.

Ms. Morgan: "I've been using the parasite prevention you gave us. Why does he still have fleas?"

You: "This is not your fault, Ms. Morgan. Let's explore other products that may work better for Murray. In addition, we will review how you can minimize the fleas in the environment. We will do whatever we can to help you and Murray."

Scenario 3

Environment and lifestyle needs

Some patients require individual parasite plans based on lifestyle, environment or other special needs. This sometimes means going outside of the norm of typical recommendations. For example, if a pet is allergic or sensitive to your practice's go-to preventive products, you will need to find a safe alternative.

Pets who swim or get bathed frequently will not do as well on topical products. And although pets in most regions of the country should be on year-round parasite prevention, veterinarians may make exceptions for pets that travel to certain regions.

If the veterinarian has recommended an atypical protocol for a patient, explain the reasoning behind that decision to the client. Be sure the client understands and is able to comply with the protocol. Create reminders in your system to follow up on compliance.

Scenario 2

The noncompliant client

A noncompliant client often has a harder time following recommendations. She may have a busy life and forget to administer preventive products. She may even decline to purchase products for various reasons. This client may do research through outside sources (ahem, Dr. Google) and make her own decisions about preventive care. It's important not to be pushy or judgmental—instead, try to see this client's point of view. Clearly state facts to this client and allow her to make her own decision. Warn her of possible risks, but do so without criticism.

The scenario: Juniper, a Russian blue cat, is in the office for her annual exam (which is overdue). Mrs. Johnson thinks everything is going well with Juniper. But the fecal exam comes back positive for hookworms. She has no evidence of fleas on her exam. The veterinarian prescribes a broad-spectrum dewormer and asks you to discuss parasites and prevention. Mrs. Johnson is surprised.

Mrs. Johnson: "She's a really healthy cat. I didn't think she needed anything special. I got that product from you guys at our last visit, but I'm not sure how often I used it. She really didn't like it so I skipped it sometimes. I think we have some more at home. Should I start using it again? I feel so bad about this! Poor Juniper!"

You: "Don't worry, Mrs. Johnson, we're going to help get Juniper back on track. Let's find solutions that are realistic for you. First, let's treat the parasites she currently has. Then, let's talk about the best way to get Juniper on a parasite control routine. Can I explain how this happened?"

TIP

Give the client a chance to ask questions. Give her choices so she can be in control. Help her choose a product that is easy to use. Also, help her figure out the best way to remind herself to give prevention. Set up reminders in the computer to contact the owner in one month for a friendly reminder to check up on her pet.

Jenna Stregowski, RVT, has worked in veterinary medicine since 1997. She is a hospital manager in Atlanta, Georgia, and the writer and editor of the website dogs.about.com.

Cringe-worthy Clental recommendations

Bad words matter. And you could be turning off clients with these weak words and phrases. Use these sample scripts for a fresh approach to dental care. By Portia Stewart, Editor, Team Channel Director

What sure the grade a clear und

t a recent CVC, Karen
Felsted, CPA, MS, DVM,
CVPM, and Barden Greenfield, DVM, DAVDC, warned
against serving up lame,
lukewarm dental and wellness recommendations. Let's take a look at some real stinkers
and examples of stronger recommendations.

Don't say: "Looking at Fiona's teeth, it wouldn't hurt to consider a dental in the near future."

Why it sucks: It's weak. You don't sound sure, so why would the client ever say yes?

A better approach: "Linus has plaque on his teeth and he's suffering from gingivitis. We grade this as stage 2 dental disease. He needs a cleaning and a full evaluation of his oral health under general anesthesia. I'm going to bring Pam in to discuss Linus' treatment plan and take a look at my book to see when I can do this procedure for him."

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Home care instruction for periodontal disease

According to expert Vickie Byard, CVT, VTS (dentistry), CVJ, periodontal disease is the most prevalent medical condition affecting our dogs and cats. In fact, it's suggested that most pets older than 3 years are experiencing some level of periodontal disease.

The primary cause of periodontal disease is, of course, biofilm—or, rather, bacteria in the mouth that form a thin, slimy film on the teeth. When biofilm covers the teeth, it's called plaque. And if the plaque isn't removed, the minerals in the saliva join with the plaque and harden into a substance called tartar or calculus. The bacteria secrete toxins that set off an inflammatory response.

Prevention, according to Byard, is the gold standard—which includes brushing a pet's teeth daily. One of the most important roles a technician can play is to educate the client on how to maintain a healthy mouth. This is done by extensive, explicit home care instructions. Here's a checklist from Byard for you to look over:

- > List all dispensed medications and when the client should begin each medication
- > When the patient may eat next and what they may eat
- > When the client may resume (or begin) tooth brushing
- > When the re-check appointment is
- > When the client would like to schedule the next dentistry appointment. This is, of course, influenced by the client, the size and breed of the patient, and the budget of the client among other factors.

Vickie Byard, CVT, VTS (dentistry), CVJ, is a certified veterinary technician at Rau Animal Hospital in Glenside, Pennsylvania.

Bonus tip: Want the latest dental tips delivered directly to your email inbox? Sign up for the Firstline enewsletter at dvm360.com/em. Also don't miss the chance for live learning on dentistry dos and don'ts at CVC in Virginia Beach, May 18-21. To learn more or register, visit thecvc.com/vb.

Don't say: "Here's a brochure about dental radiographs. You can look at it when you get home."

Why it sucks: While handouts are great, this delivery isn't. This makes it sound like you couldn't care less whether this handout ends up in the client's circular file. And if you use this language, it's gonna end up straight in the trash—without being read.

A better approach: "Check your email when you get home for a short educational handout that we made to teach you more about the benefits of regular dental cleanings and how to get Maximus prepared for his day at the dentist."

Then email the handout at dvm360.com/dentalhandout.





Down to the roots

Peri-: Prefix meaning around or about **-odont:** having to do with tooth/teeth

-ium: indicates biologic structure

According to Vickie Byard, CVT, VTS (dentistry), by using this information, it's clear that periodontal disease is a disorder of structure having to do with the tissues that surround and support the teeth, including the gums, cementum, periodontal ligament and alveolar and supporting bone. And now you can show off to your clients that you're an expert on all things periodontal, including the root words.

Also don't say: "I know it's expensive, but x-rays might help us see what's going on better."

Why it sucks: There's no recommendation here. You're leaving it up to the client to make a decision about whether radiographs are diagnostically important.

A better approach: "Mrs. Smith, do you have any questions about the dental care Roxy needs? It's so much better to do this now while this oral infection is low and she's experiencing only minor oral discomfort. We'll be able to do a full radiographic evaluation while she's under general anesthesia to look below the gum line, where oral disease can be very problematic."

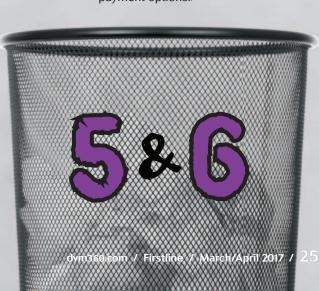
Don't say: "You might want to think about this new wellness program"

Also don't say this: "You probably don't want another credit card, but here's some information on this vet one."

Why it sucks: The first approach is wishy-washy, and the second one leads the client to only one possible conclusion: You don't believe in the recommendation you're offering.

What to say instead: "It's obvious that you're committed to Ringo's welfare, which is why I'd like to talk to you about the payment plans we accept and offer. We know that unexpected expenses can sometimes make it harder to offer the care your pets need. That's why we want to discuss ways to make pet care more affordable in emergency and everyday situations." (Then present your practice's payment options, including wellness plans, pet insurance recommendations and third-party payment options.)





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- Sarah Cloud, Marketing Brand Director





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PEOPLE
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TECH
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EVENTS
IN 2016.

41

EVENTS ACROSS THE COUNTRY 91%

OF ATTENDEES
AGREED THAT
PROGRAM
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WERE MET.

88%

OF ATTENDEES SAID THE CONTENT WAS VALUABLE AND OF HIGH QUALITY. 84%

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disaster training

No one thinks disaster will strike, until disaster is right on top of them. Do your team members, patients and clients a favor by staying on top of life-saving procedures when disaster hits.

By Amanda Inman, CVPM

s managers, we're used to getting an eye roll from others when we discuss safety protocols. And it's a massive time investment to create safety protocols, train on them, keep up with documentation and monitor compliance. But, in the end, it's all worth it.

Our city of Kokomo, Indiana, was hit by not one but multiple tornadoes on August 24. The damage was especially devastating because one of the tornadoes took almost the exact path as a twister in 2013—after which, our city pulled together and rebuilt what had been destroyed. But the community's strength and will was tested again—double the proof that bad things happen to great people and places.

When the severe weather was taking place, I was in a car with our associate veterinarian on the way to CVC Kansas City. We started receiving weather updates from back home on our phones and realized everyone we knew and loved was in a really dangerous scenario, all while we were more than 350 miles from home.



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Built for compliance¹—Enhanced compliance compared to combination flea/tick and heartworm prevention regimens.^{1‡}

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Dogs should be tested for heartworm prior to use. Mild hypersensitivity reactions have been noted in some dogs carrying a high number of circulating microfilariae. Treatment with fewer than 6 monthly doses after the last exposure to mosquitoes may not provide complete heartworm prevention. Please see full product label for more information, or visit www.virbacvet.com.

References: 1. Data on file, Vetstreet Data Analytics. Virbac Corporation. 2. SENTINEL® SPECTRUM® (milbemycin oxime/lufenuron/praziquantel) [Freedom of Information Summary]. Greensboro, NC: Novartis Animal Health; 2011.

- *Prevents flea eggs and maggot-like larvae from developing; does not treat adult fleas.
- † A. caninum. ‡SENTINEL® Brand Products.

Shaping the future of animal health



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Immediately, we both started making phone calls to family members, schools, daycares and, of course, to the workplace.

I can't tell you how proud I was to hear that our team members used our protocol and followed appropriate clinic shutdown procedures as the weather started to change. They all remained collected as they protected clients that were in the building, got clinic kitties to their safe kennel shelter and assumed their own safe positions in our windowless, innermost area of the clinic.

Everyone stayed safe and unharmed because of quick thinking and because they had the tools and training needed to react. Their ability to act without micro-management is like a badge of honor for all to wear. They each showed what teamwork, trust and commitment to protocol can truly mean in a time of natural disaster.

I created our plan out of necessity as well as a common-sense approach to what's needed in an emergency. I searched for online tools and used *The Complete Veterinary Practice Regulatory Compliance Manual* by Philip J. Seibert to help guide and edit my ideas and create a written emergency action plan we used for training.

Remember, this didn't happen overnight. It took time. I knew what we needed and made a list, crossing things off as I created, purchased, typed or trained. Now, with it all done, I have a reminder in my Outlook for the yearly training, a safety checkbox in my new hire training packet and a beginning-of-year appointment to review protocol for updates. It's basically a static plan that requires little maintenance or effort.

We all believe it won't happen. Some would say this training is a waste of paid employee time. Others think they can just put it off until "tomorrow." But please stop today and move safety training to the top of your list. You may not live in tornado alley, but every clinic lives within the parameters of some sort of natural disaster. Your team, patients and clients are precious and deserve to have a devoted safety plan. Don't let them down.

Amanda Inman, CVPM, is practice manager at Pet Care Clinic of Kokomo in Kokomo, Indiana.

TIME THE TRAINING RIGHT

Make sure that everyone is always on the same page when it comes to disaster training. I've found that the most opportune times to train veterinary team members on safety protocol are:

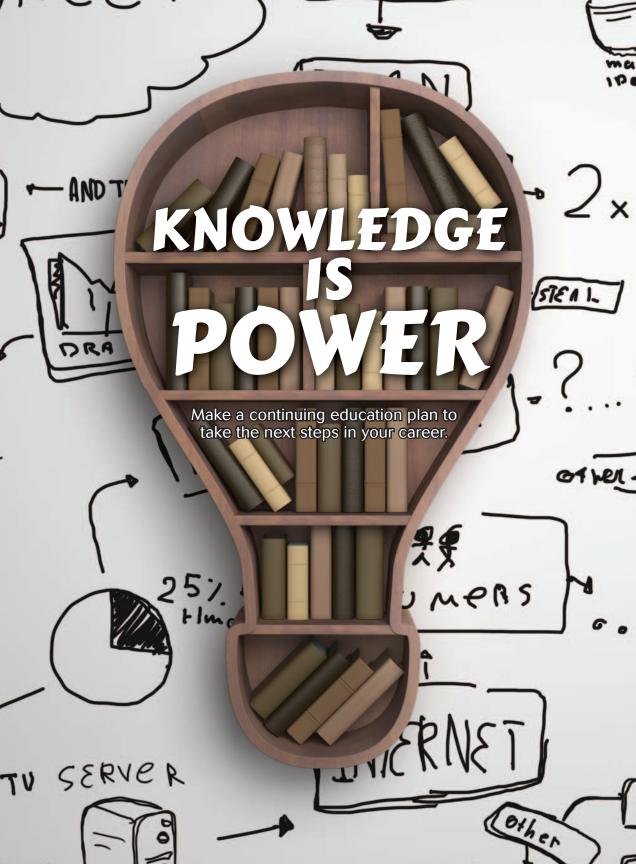
- When they are hired
- ☑ If the plans change or are edited
- Every year at a team meeting (this is the beginning of the storm season in our area)

How to build emergency bins

As a part of our training plan, we have "emergency bins" located in five strategic locations throughout the clinic. They are bright red and include:

- ✓ A flashlight or lantern with extra batteries (because you know you never have those "C" and "D" cells on hand otherwise!)
- A clipboard labeled with the area it belongs in (for assured return after the emergency)
- A copy of our team's emergency contact information and preferred hospital if injured
- A head count sheet for clients and patients
- A list of our building services contacts (gas, water, cable, roofing, etc.)
- An emergency exit map of the building including our safe zones to meet after the events
- A phone book with paperclips identifying additional emergency phone numbers to all county services including fire, hospital and government
- A checklist for each department to aid in prepping for emergencies (when able) or to assist with the aftermath of the disaster event





Nervous about "the ask"? Use this conversation tree to seed your next CE talk with your boss.

You: Dr. Learn, when you have a moment, I'd like to chat about an opportunity

Dr. Learn: I've got time now, what did you have in mind?

Dr. Learn: Sure, I'm a little busy right now. Can we discuss later?

You: There's an upcoming national conference, the CVC, which has a huge amount of technician CE offerings, including clinical and management lectures and wet labs for hands-on experience opportunities. It's very affordable, and I feel like there would be a great return on investment.

Dr. Learn: I really don't think we have the funds for that right now. Maybe next year.

When finances remain the issue: If they still aren't willing to budge, ask if they would be willing to pay a portion of the fees while you cover the remainder. If it's a complete financial no-go this year, ask the owner what goals the team needs to meet to make it a possibility next year.

Try to share the registration information, including cost, with the owner/supervisor.



that I think will help our technical team grow and better the practice.

Offer to block off some time in the schedule, or plan to meet either before appointments start or at the end of the day, when it tends to be less chaotic.

Dr. Learn: Well, we don't offer any continuing education benefits for the staff, so it would have to be at their own cost.

Dr. Learn: Sounds neat. How about you get the details to me by the end of the week and we can discuss further?

Share the registration and cost information, but also prepare a plan of attack for which seminars would be most useful to your practice and why.

Dr. Learn: I think our staff is well-trained already. We used to offer CE to staff but it never seemed to benefit the hospital in the long run.

When they still don't see the value: Focus on specific lectures that hit on topics/current challenges that are relevant to your hospital and team.

Do you want to earn more?

Firstline data shows team members who pursue additional education make more money. Here's a quick breakdown of hourly pay for managers and technicians:

Practice managers **Practice** with CVPM managers credentials S17.07 Credentialed **Technicians** technicians with specialty \$17.02

Embrace your power

To learn more about the engaging, get-you-to-thenext-level sessions at CVC Virginia Beach:

- > Visit dvm360.com/ce4team and download a PDF featuring the technician and management programs (or scan the QR code, right).
 - > Register now: thecvc.com/registervb



GETTING TO YOUR BOSS

- Start the conversation with gratitude. Thank your boss for her time and investment in your career.
- **7** Announce your intention to do more for the practice. Consider what else you can do to help your boss grow the business. Bring a list of suggestions based on the CE you plan to attend.
- **7** Get the owner's buy-in. You want your owner to say your ideas are good ones. If she's not ready to commit to your plan at this point, offer to follow up soon so the owner doesn't need to worry about scheduling another meeting.
- **4** Thank the owner. Tell your boss you appreciate the opportunities she has offered to let you grow with the company.
- **G**ive your owner time to consider your proposal. And if the answer is no, don't mope. A pleasant attitude increases the chances she will reconsider at a later date.



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(milbemycin oxime·lufenuron·praziquantel)

Caution

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

Indications

SENTINEL® SPECTRUM® (milbemycin oxime/lufenuron/praziquantel) is indicated for the prevention of heartworm disease caused by *Dirofilaria immitis*; for the prevention and control of flea populations (Clenocephalides felis); and for the treatment and control of adult roundworm (Toxocara canis, Toxascará leonina), adult hookworm (Ancylostoma caninum), adult whipworm (Trichuris vulpis), and adult tapeworm (Taenia pisformis, Echinococcus multilocularis and Echinococcus granulosus) infections in dogs and pupples two pounds of body weight or greater and six weeks of age and older.

Dosage and Administration

SENTINEL SPECTRUM should be administered orally, once every month, at the minimum dosage of 0.23 mg/b (0.5 mg/kg) milbernycin oxime, 4.55 mg/lb (10 mg/kg) ulrenuron, and 2.28 mg/lb (5 mg/kg) praziquantel. For heartworm prevention, give once monthly for at least 6 months after exposure to mosquitoes.

Dosage Schedule

Body Weight	Milbemycin Oxime per chewable	Lufenuron per chewable	Praziquantel per chewable	Number of chewables	
2 to 8 lbs.	2.3 mg	46 mg	22.8 mg	One	
8.1 to 25 lbs.	5.75 mg	115 mg	57 mg	One	
25.1 to 50 lbs.	11.5 mg	230 mg	114 mg	One	
50.1 to 100 lbs.	23.0 mg	460 mg	228 mg	One	
Over 100 lbs.	Administer the appropriate combination of chewables				

To ensure adequate absorption, always administer SENTINEL SPECTRUM to dogs immediately after or in conjunction with a normal meal.

SENTINEL SPECTRUM may be offered to the dog by hand or added to a small amount of dog food. The chewables should be administered in a manner that encourages the dog to chew, rather than to swallow without chewing. Chewables may be broken into pieces and fed to dogs that normally swallow treats whole. Care should be taken that the dog consumes the complete dose, and treated animals should be observed a few minutes after administration to ensure that no part of the dose is lost or rejected. If it is suspected that any of the dose has been lost, redosing is recommended.

Contraindications

There are no known contraindications to the use of SENTINEL SPECTRUM

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.

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

Mild, transient hypersensitivity reactions, such as labored breathing, vomitting, 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 SENTINEL SPECTRUM has not been evaluated in dogs used for breeding or in lactating females. Studies have been performed with milbernycin oxime and lufenuron alone.

Adverse Reactions

The following adverse reactions have been reported in dogs after administration of milbernycin oxime, lufenuron, or praziquantel: vorniting, depression/lethargy, pruritus, urticaria, diarrhea, anorexia, skin congestion, ataxia, convulsions, salivation, and weakness.

To report suspected adverse drug events, contact Virbac at 1-800-338-3659 or the FDA at 1-888-FDA-VETS.

Information for Owner or Person Treating Animal

Echinococcus multilocularis and Echinococcus granulosus are tapeworms found in wild cands and domestic dogs. E multilocularis and E granulosus acn infet human 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 dogs risk of exposure. Although SENTINEL SPECTROM 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 be owner erindected and shed egos between treatments.

Manufactured for: Virbac AH, Inc.

P.O. Box 162059, Ft. Worth, TX 76161

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0715

INSIDER'S INSIGHTS

By Christine Shupe, CEA, Executive Director, VHMA



Client loyalty: Are you feeling their love?

Experts say it costs between four and 10 times more to acquire a new customer than it does to keep an existing one. And it costs 30 times more to attract a new client than to keep the ones you have. Clearly nurturing client loyalty makes good business sense.

In that spirit, the Veterinary Hospital Managers Association (VHMA) asked survey respondents about their strategy for nurturing client loyalty. Do they ramp up the bells and whistles or is it simply enough to offer courteous, respectful and high-quality care? The survey, completed by 107 veterinary professionals, asked respondents to describe how their clients demonstrate loyalty. About half of respondents described loyal clients as those who comply with your team's recommendations

and treatment plans. About 25 percent believe that clients who refer friends and family to the practice are demonstrating loyalty. Respondents also consider clients who use a practice's services exclusively to be loyal.

More than 50 percent of respondents say between 51 and 75 percent of their clients are loyal. Slightly more than 50 percent track attrition. Forty-four percent don't track attrition and 5 percent don't know if they track it. Worse yet, less than 50 percent of practices tracking attrition contact clients who don't return.

Which attributes are most likely to influence a client's loyalty to a practice?

33% Trust in the veterinarian and clinic team



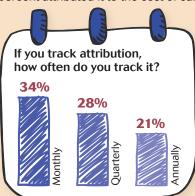
24% Caring and attentive customer service



Having established a personal connection with a team member

Why clients don't return

Respondents also speculated about the reasons clients don't return. And 38 percent attributed it to the cost of care. Others cited disappointing customer



service (19 percent) and inconvenient location (15 percent), and a small number blamed hours, trust, quality of care, wait time for appointments and continuity of care.

Client loyalty can make or break a business. Getting clients in the door is a first step, but long-term success depends on return customers.

Sometimes a client immediately clicks with a practice and returns again and again. It's more difficult to follow up with those who have not returned and ask them about their

experiences with the practice. Practices that track, follow up and consider client evaluations are more likely to develop a strong following.



RECOMBITEK® Lyme - the only vaccine with OspA in a nonadjuvanted formula







Merial is now part of Boehringer Ingelheim.



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- Straubinger RK, Chang YF, Jacobson RH, Appel MJ. Sera from OspA-vaccinated dogs, but not those from tick-infected dogs, inhibit in vitro growth of Borrelia burgdorferi. J Clin Microbiol. 1995;33(10):2745-2751.
- ² Rice Conlon JA, Mather TN, Tanner P, Gallo G, Jacobson RH. Efficacy of a nonadjuvanted, outer surface protein A, recombinant vaccine in dogs after challenge by ticks naturally infected with *Borrelia burgdorferi*. Vet Ther. 2000;1(2):96-107.
- ³ Probert WS, Crawford M, Cadiz RB, LeFebvre RB. Immunization with outer surface protein (0sp) A, but not 0spC, provides cross-protection of mice challenged with North American isolates of *Borrelia burgdorferi*. J Infect Dis. 1997;175(2):400-405.



Description:

Description:

NexGard* (actioxolaner) is available in four sizes of beef-flavored, soft chewables for oral administration to dogs and pupples according to their weight. Each chewable is formulated to provide a minimum afoxolaner dosage of 1.14 mg/lb (2.5 mg/kg). Afoxolaner has the chemical composition 1-Naphthalenecarboxamide, 4.55 (3-chloro-5-trifluoromethyl)-phenyl)-4, 5-dihydro-5-trifluoromethyl3-sioxacoly|1-N-12-oxo-2-t|(2.2)-trifluoromethyl3-mino-jethyl.

Indications

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

Dosage and Administration:

NexGard is given orally once a month, at the minimum dosage of 1.14 mg/lb (2.5 mg/kg).

Dosing Schedule:

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

NexGard can be administered with or without food. Care should be taken that the dog consumes the complete dose, and treated animals should be observed for a few minutes to ensure that part of the dose is not lost or refused. If it is suspected that any of the dose has been lost or if vomiting occurs within two hours of administration, redose with another full dose. If a dose is missed, administer NexGard and resume a morthly dosing schedule. Plea Treatment and Prevention:
Treatment with NexGard may begin at any time of the year. In areas where fleas are common year-round, monthly treatment with NexGard should continue the entire year without interruption.

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

Tick Treatment and Control:

Treatment with NexGard may begin at any time of the year (see Effectiveness).

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

Warnings:

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

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

history of sezures (see Adverse Reactions).

Adverse Reactions:
In a well-controlled US field study, which included a total of 333 households and 615 treated dogs (415 administered advocalence; 200 administered active control), no serious adverse reactions were observed with NexGard.

Over the 90-day study period, all observations of potential adverse reactions were recorded. The most frequent reactions reported at an incidence of > 1% within any of the three months of observations are presented in the following table. The most frequently reported adverse reaction was vomiting. The occurrence of vomiting was generally self-limiting and of short duration and tended to decrease with subsequent doses in both groups. Five treated dogs experienced anorexia during the study, and two of those dogs experienced anorexia with the first dose but not subsequent doses.

Teatment Group

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

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

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

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

In the US field study, one dog with a history of seizures experienced a seizure on the same day after receiving the second dose of NexGard. This dog experienced a third seizure one week after receiving the third dose. The dog remained enrolled and completed the study. Another dog with a history of seizures had a seizure 19 days after the third dose of NexGard. The dog remained enrolled and completed the study. A third dog with a history of seizures received NexGard and experienced no seizures throughout the study.

To report suspected adverse events, for technical assistance or to obtain a copy of the MSDS, contact Merial at 1-888-637-4251 or www.merial.com/NexGard. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.fda.gov/AnimalVeterinary/SafetyHealth.

Media of Advisor

Contact IDA at 1-Bob-TUA-VET or unime at INDICTIONAL PROPERTY.

Mode of Action:

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

GABA receptors versus mammalian GABA receptors. **Effectiveness:**In a well-controlled laboratory study, NexGard began to kill fleas four hours after initial administration and demonstrated >99% effectiveness at eligit hours. In a separate well-controlled laboratory study, NexGard demonstrated 100% effectiveness against adult fleas 24 hours post-infestation for 35 days, and was > 93% effective at 12 hours post-infestation from 36 days, and was > 93% effective at 12 hours post-infestation for motivity flow 21, and on Day 35 to Day 28. NexGard was 81.1% effective 12 hours post-infestation gost in both the trataled and control groups that were infested with fleas on Day 1 generated flea eggs at 12- and 24-hours post-treatment (0-11 eggs and 1-17 eggs in the NexGard treated dogs, and 4-90 eggs and 0-18 eggs in the control dogs, at 12- and 24-hours, respectively). At subsequent evaluations post-infestation, fleas from dogs in the toronti group continued to produce easy eggs (1-141 eggs). In a 90-day US field study conducted in households with existing flea infestations of vavying severity, the effectiveness of NexGard against fleas on the Day 30, 60 and 50 visits compared with baseline was 98.0%, 93.7%, and 99.9%, respectively. Collectively, the data from the three studies (thou bloarrotory and one field) demonstrate that NexGard (kills fleas before they Recollectively, the data from the three studies (two laboratory and one field) demonstrate that NexGard kills fleas before they can lay eggs, thus preventing subsequent flea infestations after the start of treatment of existing flea infestations. In well-controlled laboratory studies, NexGard demonstrated >97% effectiveness against Demacentor variabilis, >94% effectiveness against Demacentor variabilis, >94% effectiveness against Amost sequency and some started >97% effectiveness against Amost sequency interestation for 30 days. At 72 hours post-infestation, NexGard demonstrated >97% effectiveness against Amblyomma americanum for 30 days.

Animal Safety:

Animal Safety:
In a margin of safety study, NexGard was administered orally to 8 to 9-week-old Beagle pupples at 1, 3, and 5 times the maximum exposure dose (6.3 mg/kg) for three treatments every 28 days, followed by three treatments every 14 days, for a total of six treatments. Dogs in the control group were sham-dosed. There were no clinically-relevant effects related to treatment on physical examination, body weight, food consumption, clinical pathology (hematology, clinical chemistries, or coagulation tests), gross pathology, histopathology or organ weights. Vomiting occurred throughout the study, with a similar incidence in the treated and control groups, including one dog in the fix group that vomited four hours after treatment. In a well-controlled field study, NexGard was used concomitantly with other medications, such as vaccines, anthelimintics, antibiotics (including topicals), steroids, NSAIDS, anethetics, and antihistamines. No adverse reactions were observed from the concomitant use of NexGard with other medications.

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

How Supplied:

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

NADA 141-406 Approved by FDA

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

Made in Brazil \otimes NexGard is registered trademark, and $^{\rm IMFRONTLINE}$ VET LABS is a trademark, of Merial. @2015 Merial. All rights reserved.

FRONTLINE VET LABS

FIRST DAY, FIRST TASK: FIRE HER!

I've worked at the same veterinary clinic for 13 years and was recently promoted to the practice manager position. My first task is to fire a technician who has been on probation for unprofessional work habits that haven't improved. Can you provide some pointers on what I should say during the termination meeting?

-Fired up

Dear Fired up,

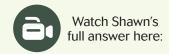
First things first, check your records. Has the employee's behavior been thoroughly documented? Documentation is key because it can help you separate the behavior from the way you feel about the behavior.



If you do have detailed records, consider the following conversation starter: "If I haven't made this clear to you before, I'm very sorry, but I want to make it clear to you now. We are terminating your employment for the following reasons..."—and then list the behaviors (not your feelings about the behaviors).

If you don't have any of the employee's unacceptable actions on record, it will be difficult to immediately terminate employment. Instead, give the employee a warning and start documenting behavior until you're able to have a conversation based on facts instead of feelings.

-Shawn McVey, MA, MSW







Got a question? Email your questions for our experts to firstline@ubm.com or visit dvm360.com/McVey to see Shawn's advice on other hot button topics.





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





See brief summary on page 34.



IMPORTANT SAFETY INFORMATION: NexGard® is for use in dogs only. The most ¹Data on file at Merial. frequently reported adverse reactions included pruritus, vomiting, dry/flaky skin, diarrhea, ®NexGard is a registered trademark, and ™FRONTLINE VET LABS is a trademark, of Merial. ©2016 Merial, Inc., Duluth, GA. All rights reserved. NEX16TRADEADS3 (01/17). lethargy, and lack of appetite. The safe use of NexGard in pregnant, breeding, or lactating dogs has not been evaluated. Use with caution in dogs with a history of seizures. For more information, see full prescribing information or visit www.NexGardForDogs.com.

When the doctor is NOT IN

Our two-doctor veterinary show turned into a solo act when a DVM went out on a well-deserved maternity leave. Here's some advice for other managers and teams living through a veterinarian's extended leave.

By Shannon Alarcon

ecently, our two-doctor hospital went down to one DVM when a mom went on her well-deserved maternity leave. But we wound up having one of our most productive months down one doctor. (Awesome, right?) Here's how:

Tell team members to take a break

Because I expected appointments to be down with one doctor away, I encouraged staff members to take vacation during this time. Some took me up on it.

Tackle training

I made this break education, scheduling training time. This was a great opportunity to cross-train staff as well as work on weaknesses without the pressure of a frantically busy day. For example, a technician who wasn't comfortable with surgeries doubled up with a surgery-savvy technician and had time to learn without the rush usually associated with multiple doctors. I trained technicians on front-desk duties and vice versa. I delegated to my supervisors some of my management duties, so someday they can replace me and learn what it's like to manage staff and hospital operations.

Take care of your clients

Some clients preferred the doctor out on maternity leave and got frustrated. My staff and I were as tactful as we could be explaining this—after all, the new mother deserved her time off.



You're going to be stressed about the change, but don't take it out on your clients, who deserve the best service possible and have grown to love the doctor on temporary leave. Don't burn bridges during this time.

Train the receptionists

To accommodate as many of our clients as possible, our remaining doctor juggled double- and triple-booked appointment slots, and often stayed late for emergency surgeries or last-minute procedures. I appreciated all this extra effort and did my part to make sure the team was on target. Receptionists explained to clients the possibility of delays when scheduling. They politely offered walkins options: stay and wait, drop off the pet at no extra charge, or schedule for a later date.

I carefully trained receptionists what types of appointments could be double-booked for efficiency and which ones required a single appointment slot.

Remember it's temporary

My biggest advantage in managing one doctor's leave was the other doctor was a) able to handle the crazy caseload (with just a couple crabby days) and b) had herself been out twice on maternity leave so she had an idea of what to expect.

Take advantage of change

When change happens, it's a chance not just to hold the line but make changes. On the negative side, during the maternity leave, I had to lay off one staff member. On the

positive side, it was a good time to let go of our kennel person who wasn't performing well. This opened up hours for more valuable team members to get paid for a little kennel work.

Treat your remaining doctors nicely

I often blocked out—no appointments!—the last 40 minutes of a day so the doctor could catch up, make calls or just go home early. We made it through with a great doctor, excellent teamwork, and myself working long hours (managers, you know the drill) to ensure the flow went as smoothly as possible.

Shannon Alarcon is practice manager and co-owner of Bannock Animal Medical Center in Pocatello. Idaho.

7-day plan for managing a doctor's maternity leave

DAY

Ask for team members to take vacation during the leave. Schedule it! Plan training and cross-training to add to and improve team members' skills.
Schedule it!

Train all team
members how
to talk about the
leave, how to
accommodate
clients and how
to give clients and
patients priority in
this busy time. Train
and retrain on these
things to say.

Train front-desk staff, especially, on when to single-book and double-book, how to handle walk-ins and what to say to clients about this busy time. Train and retrain.

DAV

Pause to remember this is temporary and you'll all get through this if you use the time efficiency, keep clients top of mind, and treat everyone extranice. You can do this!

Need to let go of underperforming team members? If you're fighting to find hours to give great team members, consider cutting the folks you should have a long time ago. Free them to find a better fit elsewhere.

DAV

Like the Sabbath, these workdays need some rest for the doctor. Schedule busy days. but leave schedule breaks for frazzled doctors to clear their heads, eat and wrap up paperwork at the end of the day. Or go home early.

DAV



MAKE BREASTFEEDING work with your career

With a predominantly female profession comes babies. And with babies comes breastmilk. How well do you know your rights and limitations?

By Abigail Fishaw, LVT

s veterinary professionals we're often natural nurturers who feel drawn to having our own bundles of joy. But balancing the demands of new motherhood and a career is tricky. Add in working around the rights and needs of a new breastfeeding mother and it gets a whole lot trickier.

Breastfeeding is one of our most natural mater-

nal performances—and it's something we often observe as veterinary professionals. After delivering a litter of new puppies or kittens, one of our first acts is to help facilitate the nursing experience by bringing the new babies to their mother's teat.

We know that colostrum and mother's milk is beneficial for our patients. So why is breastfeeding sometimes so difficult for us?



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

Caution:

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

Indications:

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

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

Contraindications:

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

Warnings

Not for human use. Keep this and all drugs out of the reach of children. Keep the product in the original packaging until use, in order to prevent children from getting direct access to the product. Do not eat, drink or smoke while handling the product. Wash hands thoroughly with soap and water immediately after use of the product.

Precautions:

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

Adverse Reactions:

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

Percentage of Dogs with Adverse Reactions in the Field Study

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

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

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

How Supplied:

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

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

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MERCK Animal Health

Breastfeeding and back to work

Part of the challenge of breastfeeding is returning to work. Most women have anywhere from six to 12 weeks of maternity leave. Factors such as staffing, pay and childcare can bring a new mother back to work sooner than she would like. And in that first few months, a new baby usually eats every three hours. So what's a breastfeeding mom to do?

If you've decided that you're going to feed your new baby breastmilk and plan to return to work, the next step in your future is pumping. Ideally you'll be pumping at the same intervals as your baby would be feeding. A pumping session can last a minimum of 10 to 20 minutes, depending on the mother. Pumping sessions need to occur multiple times in a workday.

Having a private and relaxing space for the mother to pump breastmilk helps the mother produce an optimum amount of milk needed for her baby in the time allotted.

Now you're probably laughing at all of this because you know as well as I do veterinary schedules are crazy.

Many days you have no time for lunch, let alone multiple 20-minute breaks for pumping. But being able to pump breastmilk at work is crucial for the well-being of mom

and baby. Stress and poor removal of milk can lead to engorgement, mastitis and low milk supply. All of this can lead you to (understandably!) ditch breastfeeding.

So how do I make it work for me?

Every state has different rights regarding breastfeeding and pumping breaks. If you're unsure, the best place to start is your local La Leche League or local breastfeeding coalition. Be prepared and informed of your rights as a breastfeeding mother before you return to work. Your employer should be able to provide you with a clean, private space for pumping that isn't a bathroom. Just remember, you may need to negotiate a pumping schedule. If you get a lunch break, you may end up sacrificing a portion to pump.

I also recommend working closely with your manager to create a plan for your pumping needs in your schedule. Make sure your manager and the person in charge of the appointment schedule know your needs. Setting up and executing a firm plan is imperative. You don't need to sacrifice your personal breastfeeding goals at the hands of your career. Work and motherhood can coexist smoothly with the right support from your employer.

A mommy pep talk

Ori Scislowicz, BS, LVT, a *Firstline* Editorial Advisory Board member, CVC educator and mom, shares her experience as a mom and veterinary professional.

Scislowicz says it's important for working moms in the veterinary field to completely disengage from work when they're at home, if possible. "Women tend to multitask to the extreme, but when I'm not on the clock, I'm just with my child."

Being a working mom in the veterinary field is unique in both good ways and bad ways, Scislowicz says. While the profession is notorious for being high-stress and emotionally challenging, Scislowicz notes that it can be flexible too. For example, she notes that if a veterinary technician schedule isn't working for you, consider a new avenue within the field, such as research, management or teaching.

Scislowicz advises veterinary professionals who are considering motherhood to think about pregnancy safety first (check out **dvm360.com/pregnancytips)** and to have ongoing discussions with your manager and doctor about what things you should and shouldn't be around.

Working moms can get a bad rap, but for Scislowicz, pursuing and growing her professional passions makes her a happier, more confident and more fulfilled mom.

For more advice about going back to work after having a baby, visit **dvm360. com/backafterbaby**



Abigail Fishaw, LVT, resides in Norfolk, Virginia, with her husband, daughters and pets. She's worked in the veterinary field for 11 years and has been a licensed veterinary technician since 2009. Abby has a special affinity for black-and-white cats and Cavalier King Charles spaniels.

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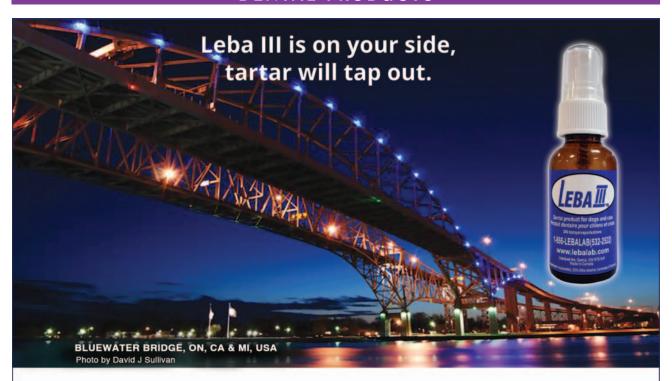
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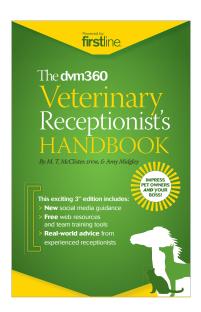
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Are you staying or leaving?

The 2016 Firstline Career Path Study highlighted some of the top benefits team members receive—and what's really keeping them at their practices.

The top three benefits team members say they're most likely to receive:

Paid vacation 96% Reduced-fee veterinary care 89%

And when we asked what's most important to job satisfaction, these three factors topped the list:

- Pay
- Working with doctors and a team I respect
- Job flexibility, including family-friendly scheduling options and job sharing

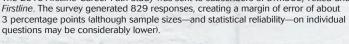
While **94%** of team members say they plan to stay in the profession long-term (86% say they'll stay at their current practice and 8% think they'll be looking for a new practice), the numbers look less rosy when we get specific:

N₀ 37%

YES

Do you think you'll be working in the veterinary profession in 10 years?

The 2016 Firstline Career Path Study was sent to subscribers of dvm360, Vetted and





Laur Your Pet's Soul BEHAVIORAL HEALTH SUPPLEMENT

A unique combination of active ingredients come together in one chewable supplement to encourage calmness in stressful situations.

Veterinarians lose as much as 15% of their client base each year due to unresolved behavior issues.

Start the conversation with your clients:

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- In a separate study, dogs showed enhanced mobility within just 2 weeks³
- Safe for long-term daily use

Visit www.antinol.com for more information.

*90% of dogs in one group showed enhanced mobility; 88% of dogs in a second group showed enhanced mobility

References 1. Wolyniak CJ, Brenna JT, Murphy KJ, Sinclair AJ. Gas chromatography-chemical ionization-mass spectrometric fatty acid analysis of a commercial supercritical carbon dioxide lipid extract from New Zealand green-lipped mussel (*Perna canaliculus*). *Lipids*. 2005;40(4):355-360. **2.** Data on file at Merial, Inc. **3.** Data on file at Merial, Inc.







Your piece of the MANAGEMENT PUZZLE

Pain expert Tasha McNerney, BS, CVT, CVPP, VTS (Anesthesia/Analgesia) explains the different roles team members play in recognizing and managing pain and why each role is important.

ain recognition and management is everyone's job, but not everyone has the same role, says Tasha McNerney, BS, CVT, CVPP, VTS (anesthesia/analgesia). Proper pain management takes a team, and it starts before the animal even enters the building.

RECEPTIONISTS

RECEPTIONISTS: FRONT LINE INVESTIGATORS

"The receptionist is the front line for obtaining information from the client," says McNerney. When clients call, it's the receptionist's job to start the pain management conversation and ask questions that will help reveal what type of pain the animal is experiencing.

McNerney offers several examples:

- ✓ "How long has your pet been experiencing pain?"
- ✓ "Does the pain appear to be localized to one area?"
- ✓ "Is your pet licking or biting at a certain area of the body?"
- ✓ "Has your pet stopped eating/grooming/jumping/running?"
- ✓ "Does your pet take a long time to stand after sitting or sleeping?"

The receptionist's duties go beyond the phone, however. McNerney adds that they should be trained to take patients presenting to the clinic with signs of extreme pain (e.g., lateral, visible trauma, trouble breathing, howling in pain, etc.) to the treatment room immediately.

TECHNICIANS/ NURSES: CARDINAL COMMUNICATORS

"The meat and potatoes of pain management in the veterinary clinic usually comes from nurses," says McNerney.

Nurses are the ones watching the patients as they walk into the exam room and evaluating them post-surgery. They also spend a lot of time talking with owners.

When nurses bring patients into the exam room for a physical exam, McNerney says they should ask owners questions like

TECHN NU

- ✓ "Has your pet's activity level decreased?"
- ✓ "Is your pet reluctant to go upstairs or jump up on things?"
- ✓ "Has your pet been reluctant to eat hard food?"
- ✓ "Do you feel like your pet's current pain medication is working?"
- ✓ "Are you supplementing with any other medications?"

If doing an intake prior to surgery or a dentistry procedure, McNerney advises nurses to talk to clients about what to expect. "Talk about the anticipated level of pain with the owner. Ask the owner how they feel about giving analgesic medications and talk about different modalities," says McNerney. It's important to talk about options, as not all pets can take medication orally, and not all owners are comfortable bringing up that their pet falls into this category.

KENNEL STAFF: KEEN OBSERVERS

Kennel staff may notice a pet is limping or is sensitive when a certain area is touched, or they may see that a patient is uncomfortable and unable to res

According to McNerney, "If the kennel staff notices signs of pain in boarding patients, they should alert the nurses or veterinarians so the owner can be notified and proper pain management plans can be enacted."

ICIANS/ RSES

DOCTORS

DOCTORS: MULTIMODAL MANAGEMENT MAPPERS

Doctors combine information from receptionists, owners, and nurses with what they learn from their own physical examinations to create a multimodal treatment plan. "The principle of multimodal therapy is to use analgesic drugs and physical therapy modalities that target several different steps of the pain pathway, allowing for more effective pain control with lower doses and fewer side effects," McNerney says.

McNerney calls opioids and NSAIDs the cornerstones of pain management in surgery and dentistry patients.

"Those are the two you always want to consider including in postoperative pain management," she says. Other options include NMDA-receptor antagonists, tricyclic antidepressants and non-pharmacologic options such as acupuncture, laser therapy, physical therapy, pulsed

magnetic field therapy and hydrotherapy.

Again, it's important to discuss medication expectations at this point. The perfect pain plan will fail if the client is physically unable to give the pet what the doctor prescribes.

dvm360.com/toolkit | February 2017 3

So what does it take to create a pain management program?

First, your team needs to share a commitment to excellence in medicine. Good medicine is good business, and good pain management is good medicine. These steps will help you build a foundation for a strong pain management program in your practice.

- 1. Adopt pain scoring systems. Find examples at dvm360.com/ painscoring.
- 2. Create and deliver pain management protocols for every surgical patient. All pain is not created equal. A pain management protocol is a template to adjust to meet each patient's needs. For example, the pain management protocol for a superficial laceration should differ from that for an ovariohysterectomy and from the protocol for a tibial plateau leveling osteotomy. James Giordano, PhD, a pain practitioner once said, "pain management is an ongoing clinical experiment with an 'n' of one."
- 3. Then get the right training. Make it a goal to check out the pain management CE available to you (be sure to check thecvc.com for a CVC program with detailed information about available pain management
- 4. Plan a team meeting. Your team will talk about your pain management approach, which may include medication, nutrition, environmental management, weight management exercise or controlled exercise, acupuncture and physical rehabilitation.



Launch Pad Learning: Your CE opportunities at CVC

Our CVC educators want you to leave the new Launch Pad Learning sessions with an approach that is personalized and ready to try in **your** practice. And check it—there are multiple opportunities to improve your team's pain management skills, from perioperative anesthesia and pain control (in sessions given by Michael Petty, DVM, CVPP, CVMA, CAAPM and Mary Ellen Goldbery, BS, LVT, CVT, SRA, CCRA) to "things you learned in school but have forgotten" (a session by Tasha McNerney, BS, CVT, CVPP, VTS [anesthesia/ analgesial). Get more info at thecvc.com!









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- Rapidly absorbed, persists at site of inflammation, rapidly cleared from the bloodstrearn*1
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- Each dose provides 24 hours of safe, effective postoperative pain relief
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- *Clinical relevance unknown

Learn how Onsior® (robenacoxib) helps to get patients home at onsior.com.

Onsior injection is indicated for the control of postoperative pain and inflammation associated with soft tissue surgery in dogs \geq 4 months of age; for up to a **maximum of 3 days**.

Onsior Tablets are approved for the control of postoperative pain and inflammation associated with soft tissue surgery in dogs \geq 5.5 lbs (2.5 kg) and \geq 4 months of age; for up to a maximum of 3 days.

Important Safety Information

Do not use in dogs that have a hypersensitivity to robenacoxib or known intolerance to NSAIDs. Not for use in humans. Keep this and all drugs out of reach of children and pets. Do not use for more than 3 days. Serious adverse events have been reported with long term use in dogs. All dogs should undergo a thorough history and exam before initiation of NSAID therapy. Appropriate testing should be conducted prior to administration of an NSAID. Owners should be advised to observe for signs of potential drug toxicity. Stop administration of ONSIOR if the dog experiences inappetence, vomiting or lethargy. Safe use has not been evaluated in dogs younger than 4 months of age, dogs used for breeding, or in pregnant or lactating dogs. Do not administer in conjunction with any other NSAID or corticosteroid.

Onsior injection: For subcutaneous use in dogs. Monitor dogs post-injection for reactions. Injection site reactions and anaphylactic reactions have been associated with the use of ONSIOR Injection. Safety has not been demonstrated for intravenous or intramuscular administration. The most common adverse reactions were pain on injection, diarrhea and vomiting.

Onsior Tablets: For oral use in dogs only. Store out of reach of dogs and other pets in a secure location. Do not use in cats. Cats cannot be accurately dosed with the tablet sizes intended to be used in dogs. Dogs should weigh at least 5.5 lbs. The most commonly reported adverse reactions were diarrhea, vomiting, and decreased appetite.

See prescribing information on page 6-7 for complete safety information.

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^{1.} Silber, H., Burgener, C., Letellier, I., et al. 2010. "Population pharmacokinetic analysis of blood and joint synovial fluid concentrations of robenacoxib from healthy dogs and dogs with osteoarthritis." Pharm. Res. 27.12: 2633-2645.

Onsior™ (robenacoxib) Injection

20 mg/mL injection For Subcutaneous Use in Dogs

Caution

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

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

Indication:

ONSIOR (robenacoxib) injection is indicated for the control of postoperative pain and inflammation associated with soft tissue surgery in dogs ≥ 4 months of age; for up to a maximum of 3 days.

Dosage and Administration:

Carefully consider the potential benefits and risks of ONSIOR and other treatment options before deciding to use ONSIOR (robenacoxib) injection. Use the lowest effective dose for the shortest duration consistent with individual response.

The dose of ONSIOR (robenacoxib) injection is 0.91 mg/lb (2 mg/kg) subcutaneously once daily, for a maximum of 3 days (See Warnings, Precautions and Adverse Reactions).

Dosage Directions: For subcutaneous injection in dogs ≥ 4 months of age; for up to a **maximum of 3 days.** The first dose should be administered approximately 45 minutes prior to surgery, at the same time as the pre-anesthetic agents are given.

Subsequent doses can be given via subcutaneous injection, or interchanged with the oral tablet in dogs ≥ 5.5 lbs and ≥ 4 months of age, for a maximum of 3 total ONSIOR doses over 3 days, not to exceed one dose per day. If subsequent doses are given by subcutaneous injection, different sites for each injection should be used (See Adverse Reactions).

See product insert for complete dosing and administration information. Contraindications:

ONSIOR (robenacoxib) should not be used in dogs that have a hypersensitivity to robenacoxib or known intolerance to NSAIDs.

Warnings

Not for use in humans. Keep this and all medications out of reach of children. Consult a physician in case of accidental exposure to humans. For subcutaneous use in dogs and extra only.

Do not administer ONSIOR injection or tablets in conjunction with any other oral or injectable NSAID or corticosteroid.

Do not use for more than 3 days. Serious adverse events have been reported, including hepatopathy, with the long term use (28 day study) of ONSIOR tablets in dogs (See Adverse Reactions). Safety not demonstrated for longer than 3 days.

all dogs should undergo a thorough history and physical examination before the initiation of NSAID therapy. Appropriate laboratory tests should be conducted to establish hematological and serum biochemical baseline data prior to administration of an NSAID.

Owners should be advised to observe for signs of potential drug toxicity (see Adverse Reactions).

Precautions:

Monitor dogs post-injection for reactions. Injection site reactions and anaphylactic reactions have been associated with the use of ONSIOR injection (See **Adverse Reactions**).

Stop administration of ONSIOR if the dog experiences inappetence, vomiting or lethargy.

Stop administration or UNSIOR it me loog experiences inappetence, vontining or letnargy The safe use of ONSIOR has not been evaluated in dogs younger than 4 months of age, dogs used for breeding, or in pregnant or lactating dogs. Safety has not been demonstrated for intravenous or intramuscular administration of ONSIOR injection.

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 adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Anesthetic drugs may affect renal perfusion; approach concomitant use of anesthetics and NSAIDS cautiously. Appropriate monitoring procedures (including ECG, blood pressure, and temperature regulation) should be employed during all surgical procedures. The use of parenteral fluids during surgery is recommended to decrease potential renal complications when using NSAIDS perioperatively.

If additional pain medication is needed after a daily dose of ONSIOR, a non-NSAID/ non- corticosteroid class of analgesic may be necessary. Concurrent administration of potentially nephrotoxic drugs should be carefully approached and monitored. NSAIDs may inhibit 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. NSAIDs possess the potential to produce gastrointestinal ulcerations and/or gastrointestinal perforations. Do not use ONSIOR concomitantly with other anti-inflammatory drugs, such as NSAIDs or corticosteroids. Consider appropriate washout times when switching from one NSAID to another or when switching from corticosteroid use to NSAID use. ONSIOR injection and ONSIOR tablets are safe to use interchangeably when given once a day for a **maximum of 3 days** in dogs ≥ 4 months of age **and** ≥ 5.5 lbs.

The use of concomitantly protein-bound drugs with ONSIOR 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 ONSIOR has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy. Concurrent medications used during the field study with ONSIOR included parastiticides, anesthetics, pre-anesthetic medications, and antibiotics.

It is unknown whether dogs with a history of hypersensitivity to B lactam drugs will exhibit hypersensitivity to ONSIOR. Robenacoxib is poorly soluble in water and in acid solutions readily degrades to form y-lactam. In dogs, lactam is a minor metabolite of robenacoxib. Additionally, lactam is a degradation product that increases over the shelf life of the solution. Neurologic signs have been associated with the use of B lactam drugs; it is unknown if the lactam produced by robenacoxib may cause similar neurologic signs

ONSIOR (robenacoxib) injection contains sodium metabisulfite. ONSIOR (robenacoxib) injection should not be used in patients with sulfite hypersensitivity. A sulfite may cause allergic-type reactions including anaphylaxis.

Adverse Reactions:

In a controlled field study (See **Effectiveness**), a total of 317 male and female dogs representing various breeds were included in the field safety analysis. ONSIOR-treated dogs ranged in age from 6 months to 15 years and weighed between 2.5 and 53.8 kg. The following table shows the number of dogs exhibiting each observation.

Table 1: Adverse reactions reported in the soft tissue surgery field study.

Adverse Reaction*	ONSIOR (robenacoxib) injection N = 159	Placebo (0.9% NaCl) N = 158
Pain on injection**	18	8
Diarrhea	15	8
Vomiting	10	6
Bradycardia	6	1
Decreased appetite	5	2
Hypotension	2	0
Facial edema, hypersensitivity	1	0
Increased incisional bleeding	1	0

- Dogs may have experienced more than one type or occurrence of an event during the study.
- ** Most often occurred as a single event.

Pain on injection, diarrhea and vomiting were the most commonly reported adverse reactions.

Occurrences of hepatopathy, ataxia, skin lesions/urticaria, and anaphylaxis have been associated with the use of ONSIOR. In a month-long pilot study, 3 dogs that received ONSIOR developed hepatic toxicity. Two of these dogs were euthanized and a third dog recovered after prolonged hospitalization and supportive therapy. In foreign market experience, elevated liver enzymes, hepatic necrosis and death have been associated with the long term use of robenacoxib in dogs. Occurrences of liver failure, hepatitis, and cholangiohepatitis have been reported. In two other field studies, bradycardia, 2nd degree heart block in four dogs, and ventricular arrhythmia in one dog were noted in anesthetized dogs treated with ONSIOR injection.

Injection site reactions (edema, necrosis, and abscesses), and anaphylactic reactions (panting, drooling, shock, pallor, dyspnea, tachypnea, ataxia) have been associated with the use of ONSIOR injection.

For technical assistance or to report suspected adverse drug events, 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/Animal/Veterinary/SafetyHealth

Information for Dog Owners:

ONSIOR, 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, anemia, yellowing of gums, skin or whites 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 some cases result in death (see Warnings and Adverse Reactions). Owners should be advised to discontinue ONSIOR 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.

How Supplied:

ONSIOR (robenacoxib) injection is available as a 20 mg/mL solution in a 20 mL multidose vial.

Storage Conditions:

Store under refrigerated conditions 2° - 8°C (36° - 46°F).

Use within 12 weeks of first puncture.

Manufactured for: Elanco US Inc. Greenfield, IN 46140

NADA # 141-443, Approved by FDA

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PA100455AMX_BrS8 P1b



10 mg, 20 mg and 40 mg Tablets for Dogs

For Oral Use in Dogs Only

Do not use in cats. Cats cannot be accurately dosed with the tablet sizes intended to be used in dogs.

Caution:

Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian. **Before using this product, please consult the product insert, a summary of**

Indication:

ONSIOR tablets are indicated for the control of postoperative pain and inflammation associated with soft tissue surgery in dogs ≥ 5.5 lbs (2.5 kg) and ≥ 4 months of age; for up to a **maximum of 3 days**.

Dosage and Administration:

Always provide "Information for Dog Owners" Sheet with prescription. Carefully consider the potential benefits and risk of ONSIOR tablets and other treatment options before deciding to use ONSIOR tablets. Use the lowest effective dose for the shortest duration consistent with individual response.

The dose of ONSIOR tablets is 0.91 mg/lb (2 mg/kg) orally once daily, for a maximum of 3 days. (See Warnings, Precautions and Adverse Reactions).

Dosage Directions: For oral use in dogs ≥ 5.5 lbs and ≥ 4 months of age; for up to a **maximum of 3 days.** Tablets are not scored and should not be broken. The calculated dosage should be provided using a combination of whole tablet sizes.

Do not use in dogs weighing less than 5.5 lbs (2.5 kg), as dogs less than 5.5 lbs (2.5 kg) cannot be accurately dosed. Do not use in cats. Cats cannot be accurately dosed with the tablet sizes intended to be used in dogs.

The first dose should be given approximately 45 minutes prior to surgery. Subsequent doses can be given via the oral tablet or can be interchanged with subcutaneous injection for a maximum of 3 total ONSIOR doses not to exceed one dose per day (see accompanying ONSIOR Injection summary).

See product insert for complete dosing and administration information.

Contraindications:

ONSIOR should not be used in dogs that have a hypersensitivity to robenacoxib or known intolerance to NSAIDs.

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 oral use in dogs only. Store ONSIOR out of reach of dogs and other pets in a secure location in order to prevent accidental ingestion or overdose. Do not use in cats. Cats cannot be accurately dosed with the tablet sizes intended to be used in dogs.

Do not use for more than 3 days. Do not administer ONSIOR tablets or injection in conjunction with any other oral or injectable NSAID or corticosteroid. Serious adverse events have been reported, including hepatopathy, with the long term use (28 day study) of robenacoxib in dogs (See Adverse Reactions). Safety not demonstrated for longer than 3 days.

All dogs should undergo a thorough history and physical examination before the initiation of NSAID therapy. Appropriate laboratory tests should be conducted to establish hematological and serum biochemical baseline data prior to administration of an NSAID. Owners should be advised to observe for signs of potential drug toxicity (see Adverse Reactions and Animal Safety) and be given an "Information for Dog Owners" sheet about ONSIOR tablets.

Precautions:

Stop administration of ONSIOR if the dog experiences inappetence, vomiting or lethargy. The safe use of ONSIOR has not been evaluated in dogs younger than 4 months of age, dogs used for breeding, or in pregnant or lactating dogs. Dogs receiving ONSIOR should weigh at least 5.5 lbs.

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 adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Anesthetic drugs may affect renal perfusion; approach concomitant use of anesthetics and NSAIDs cautiously. Appropriate monitoring procedures (including ECG, blood pressure, and temperature regulation) should be employed during all surgical procedures. The use of parenteral fluids during surgery is recommended to decrease potential renal complications when using NSAIDs perioperatively.

If additional pain medication is needed after a daily dose of ONSIOR, a non-NSAID/ non- corticosteroid class of analgesic may be necessary. Concurrent administration of potentially nephrotoxic drugs should be carefully approached and monitored. NSAIDs may inhibit 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.

NSAIDs possess the potential to produce gastrointestinal ulcerations and/or gastrointestinal perforations. Do not use ONSIOR concomitantly with other anti-inflammatory drugs, such as NSAIDs or corticosteroids. Consider appropriate washout times when switching from one NSAID to another or when switching from corticosteroid use to NSAID use. ONSIOR injection and ONSIOR tablets are safe to use interchangeably when given once a day for a **maximum of 3 days** in dogs \geq 4 months of age $and \geq$ 5.5 lbs.

The use of concomitantly protein-bound drugs with ONSIOR 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 ONSIOR has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy.

It is unknown whether dogs with a history of hypersensitivity to ß lactam drugs will exhibit hypersensitivity to ONSIOR. Robenacoxib is poorly soluble in water and in acid solutions readily degrades to form y-lactam. In dogs, lactam is a minor metabolite of robenacoxib. Additionally, lactam is a degradation product that increases over the shelf life of the tablets. Neurologic signs have been associated with the use of ß lactam drugs; it is unknown if the lactam produced by robenacoxib may cause similar neurologic signs.

Adverse Reactions:

In a controlled field study, a total of 239 male and female dogs representing 35 breeds were included in the field safety analysis. ONSIOR-treated dogs ranged in age from 6 months to 14 years and weighed 5.9 to 121 lbs (2.7 to 55 kgs). The following table shows the number of dogs exhibiting each observation.

Adverse reactions in the soft tissue surgery field study				
Adverse Reaction*	ONSIOR (robenacoxib) tablets N = 119	Control (vehicle tablets minus robenacoxib) N = 120		
Diarrhea	6	3		
Vomiting	6	4		
Decreased appetite	3	0		
Weight loss	1	0		
Hypotension	1	0		

*Dogs may have experienced more than one type or occurence of an event during the study.

The most commonly reported adverse reactions were diarrhea, vomiting, and decreased appetite. Changes in the clinical pathology values were not considered clinically significant.

Occurrences of hepatopathy, ataxia, skin lesions/urticaria, and anaphylaxis have been associated with the use of ONSIOR. In a US month-long pilot study, 3 dogs that received ONSIOR developed hepatic toxicity. Two of these dogs were euthanzied and a third dog recovered after prolonged hospitalization and supportive therapy. In foreign market experience, elevated liver enzymes, hepatic necrosis and death have been associated with the long term use of robenacoxib in dogs. Occurrences of liver failure, hepatitis, and cholangiohepatitis have been reported.

For technical assistance or to report suspected adverse drug events, 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.

Information for Dog Owners:

ONSIOR, 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, anemia, yellowing of gums, skin or whites 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 some cases result in death (see Warnings and Adverse Reactions). Owners should be advised to discontinue ONSIOR 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.

How Supplied:

ONSIOR tablets are available as 10, 20 and 40 mg round flavored tablets in perforated blisters and are supplied in cards containing 6 tablets. Each cardon holds 10 blister cards (60 tablets per carton). The appropriate number of tablets per patient is to be dispensed in an ONSIOR dispensing envelope containing an information for Dog Owners Sheet.

Storage Conditions:

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

Manufactured for:

Elanco US Inc.

Greenfield, IN 46140

NADA # 141-463, Approved by FDA

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The great acute pain management pyramid

One of the seven wonders of the veterinary world, the great acute pain management pyramid can give structure to your clinic's pain strategy for dogs and cats.

By Kathryn Primm, DVM

ot long ago, it was common for patients (especially cats) to be anesthetized using only gas. At the time, veterinarians were unaware that anesthetic gas does not provide analgesia. "We tortured our patients," says Robin Downing, DVM, MS, DAAPM, DACVSMR, CVPP, CCRP. But thankfully, as the old Virginia Slims cigarettes ads asserted back in the day, veterinary medicine has come a long way when it comes to acute pain management, baby. Equipped with better knowledge and the right combination of tools, we can avoid causing our feline and canine patients unnecessary pain and distress.

Pain particulars

Pain is complex, says Dr. Downing. Acute pain can stem from a planned event, like surgery, or an unplanned event, like trauma, and can vary in severity. Often, it isn't the only pain present. A patient could already be experiencing a chronic pain issue when acute pain begins.

We now know that pain becomes maladaptive as time goes on and can cause the patient to suffer, a process known as pain wind-up. To stop the wind-up before it begins, we can mount a preemptive strike against pain by being early, aggressive and in-tune with our patients and by having the right medicine at our disposal, says Dr. Downing. She's constructed a tri-level acute pain management pyramid to give some structure to what patients need.

Acute pain management pyramid

When it comes to managing acute pain, it is important to use every level of the pyramid in order to target specific tissues and receptors in the body.

Local anesthetic infusions

Examples: Lidocaine, bupivacaine Since we now know that gas anesthesia affects consciousness only, we need to have a pain intervention strategy in place when the patient wakes up. Local anesthetic infusions can help prevent wind-up at the surgical site. Local analgesics such as lidocaine and bupivacaine block pain signals at the site of the stimulus and thus alter pain perception. These medications are affordable and easy to use, but they are not as effective long term and

should be

coupled

with

NSAIDs

Reduce inflammation!

postoperative systemic pain coverage.

Nonsteroidal antiinflammatory drugs

Examples: Carprofen, meloxicam, firocoxib, robenacoxib, deracoxib NSAIDs play a primary role in analgesia and should be a part of analgesic protocols. They reduce inflammation and can have primary analgesic effects. They affect multiple locations in

Local anesthetics

Prevent pain wind-up on site!

Acute Pain <u> Management</u> **Pyramid**



Opioids

the nervous

NSAIDs

can

system.

Lessen the intensity of pain signals!

address pain in multiple ways and are a cornerstone to any anesthetic protocol.

Opioids

Examples: Morphine, hydromorphone, fentanyl, buprenorphine Opioids are also effective at interrupting pain wind-up and can help slow tissue damage because we now know that pain interferes with healing. They also play a role on the *mu* receptors in sites of inflammation, such as a knee that has undergone cruciate repair, and thus can play a role as an infusion. Opioids' ability to moderate pain perception by reducing the intensity of pain signals reaching the brain and acting at the site of the pain makes them the *most* important component of the pain management pyramid.

Again, every level of the acute pain management pyramid is important and necessary because each has a different target. All three levels synergistically build on each other, and together, they work better than any one agent on its own.

Remember 3R's

Because pain can be adaptive or maladaptive, Dr. Downing says veterinarians need to also be mindful of the three Rs of pain management:

Recheck: Look at your patient again (and again).

Reassess: Take into account anything that may have changed since your last check.

Revise: Alter the pain management cocktail to meet the patient's current needs, and titrate the medications down as the patient heals.

Now that we know more about pain, appropriate pain management isn't just good medicine—it's a minimum standard of care. It is not just our job, but our obligation, to create comprehensive pain strategies for every patient, every time and to stay upto-date as their pain needs change.

No more grumpy cat!

Hey, maybe he was just in pain the whole time. And the variety of products at your disposal to identify and treat pain in cats keeps expanding.

By Sarah J. Wooten, DVM

ultimodal pain management can enhance your patient's quality of life, build client relationships and generate revenue, according to Ralph C. Harvey, DVM, MS, DACVAA. At a recent CVC, Dr. Harvey said kitties in pain are prone to aggression and inappetence, take longer to heal, have a higher susceptibility to infection and are more difficult to medicate. By blunting the maladaptive neuroendocrine response associated with pain, we can improve patient recovery, attain better control of hemodynamics, help cats return to spontaneous feeding sooner, lower the risk of immunosuppression and reduce overall morbidity and mortality. Clients are happier and more likely to refer others to your practice, and compliance improves. The cat wins. The client wins. The veterinarian wins. The team wins. Here are seven ways feline pain management is better than ever.

Refined gentle handling techniques Veterinarians benefit from

using feline-friendly handling techniques, such as those developed by Sophia Yin, DVM, MS, Dr. Harvey says. Her video library on handling methods to reduce fear and pain is available on YouTube or Dr. Vin's website, drsophiayin.com. Some examples of gentle handling include:

- >> Providing protection and swaddling with towel wraps and garments such as a ThunderShirt, which have a calming effect on the patient and protect the handler.
- >> Taking the top off of the cat carrier vs. dumping the cat out on the table.
- >> Gently carrying the cat carrier so that the cat is not jostled inside—it's not a pendulum!
- >> Avoiding scruffing or stretching because of undiagnosed osteoarthritis (present in most older cats, Dr. Harvey reminds us).
- >> Using synthetic feline facial pheromones such as Feliway (Ceva). Dr. Harvey explained that Feliway is effective because it tricks cats into thinking they're in a safe environment that's already been marked. Allow the alcohol to dissipate (about 15 minutes) before exposing the cat to Feliway, Dr. Harvey cautions, as cats may find the alcohol objectionable.

Improved tools to evaluate pain By now you're familiar with the concept that cats aren't fractious, they're fearful. Dr. Harvey would add that fearful cats may also be experiencing pain. With improved and recognized behavioral indices, veterinarians

now have better ways to evaluate pain in feline patients.

Remember—classic pain behavior in cats includes:

- > Hiding > Loss of appetite
- > Excessive licking and grooming
- > Cessation of licking and grooming
- > Hunched position > Closed eyes
- > Whiskers down > Guarding
- > Hissing or swatting when the affected area is touched
- > Disassociation with the environment.

Client handout: Exercise is crucial for pain-free cats



One key to help cats be less painful as they age is to keep their weight at an optimal level. More pounds equals more weight on a cat's tender frame.

Kara Amstutz, DVM, CCRT, CVPP, owner of Hometown Veterinary Hospital & River Canine Rehabilitation in Springfield, Missouri, says encouraging inactivity may make aging more difficult and painful for your pet. In fact, helping cat owners promote an active lifestyle in



their senior pets through daily physical exercise may be the No. 1 thing you can do to promote muscle strength, joint flexibility and overall health in your feline patients. For a handout on fun feline exercises to help cats keep slim and strong, scan the code or check out dvm360.com/catexercise

Validation of the facial grimace scale

I'm sure that you would agree that it can be a challenge to not only evaluate feline pain, but explain to a client that his or her elderly cat is suffering from chronic pain.

Have you ever heard, "But doctor, she doesn't cry?"

According to Dr. Harvey, now there's their cats are in pain. Animals with can be evaluated for pain with a faces on it in the emergency and show a client that their cat and to Dr. Harvey's next

an easier way to graphically demonstrate to clients that uniform skull morphology, such as a cat or a human grimace scale. (Have you ever seen that pain scale with room?) It's fairly easy to point to a feline grimace scale is painful, which opens the door to pain management point about new medication options.

New options for NSAID therapy

Nonsteroidal anti-inflammatory drug (NSAID) options have been fairly limited in feline patients. The introduction of robenacoxib (Onsior— Elanco) has made management of surgical and chronic pain in cats much easier. Robenacoxib is FDA-approved for once-daily administration up to three days for postoperative pain and inflammation in cats. Dr. Harvey says the drug demonstrates selectivity for tissues that are inflamed or infected and remains tightly bound to blood albumin until it reaches inflamed acidic tissues. It comes in injectable and small, palatable tablets, so it is easy to administer and has a high margin of safety.

Why fear can be such a pain in cats

How many cats are on your veterinary clinic schedule today? Feeling apprehensive because some of them are notorious



"bad actors"? What might be going on in these patients may go beyond the fear and anxiety of the office visit. They may be in pain. Hear more from pain expert Robin Downing, DVM, MS, DAAPM,

DACVSMR, CVPP, CCRP. Scan the code to watch now or check dvm360.com/

badactors



Effective analgesia with opioids Feline practitioners now have more options for pain management than ever. Buprenorphine is now available as an injectable (Simbadol—Zoetis), which provides 24 hours of analgesia with one injection and can be given once daily for up to three days. In cats, buprenorphine has a much higher ceiling effect than other opioids, is considered safe, and provides perioperative and postoperative analgesia. Because of the potential for drug abuse and accidental exposure in people, it must be administered only by veterinarians or veterinary technicians trained to handle potent opioids—it cannot be sent home for administration by the pet owner. Dr. Harvey recommends informing owners that their cats' behavior will be different for 24 hours and to expect them not to be in pain and to seem euphoric.

Dr. Harvey is a fan of tramadol as an adjunctive analgesic in cats. Tramadol interferes with reuptake of serotonin and norepinephrine, relieving the affective (emotional) component of pain and suffering, and allowing cats to engage in life again. The downside to tramadol is that it's not palatable. Some veterinarians have found success in coating tramadol in layers of frozen butter to allow for easy pilling. Dr. Harvey warns if the tramadol is compounded by a human pharmacy into a liquid, make sure it doesn't contain xylitol.

New pain management guidelines In 2015, the American Animal Hospital Association and the American Association of Feline Practitioners released updated pain management guidelines for dogs and cats that are available to everyone at AAHA'a website. This resource is filled with new knowledge, links and protocols, and it reinforces the idea that pain management is central to veterinary practice.

Reference

1. Hardie EM, Roe SC, Martin FR. Radiographic evidence of degenerative joint disease in geriatric cats: 100 cases (1994-1997). J Am Vet Med Assoc 2002;220(5):628-632.



5 drugs that should be in your cat pain toolbox



It didn't pain us (we're here all week, folks) to talk to physical rehabilitation expert Janice Huntingford, DVM, DACVMR, about what she uses to manage feline patients' chronic pain. Scan the code to get them now or check it out at dvm360.com/ paintoolbox

Grumpy cat transformations

Chronic pain can cause unwanted behavioral changes, such as aggression and litter box problems. Dr. Harvey says that 90% of geriatric cats have radiographic evidence of degenerative joint disease1 and likely suffer chronic pain from osteoarthritis, and veterinarians know that cats are frequently relinquished or sometimes euthanized as a consequence of inappropriate elimination. So feline pain management is not only life-improving, it strengthens the client-veterinarian bond and the human-animal bond. Dr. Harvey would even go so far as to say feline pain management is life-saving.

Exploring the new frontier in Dain management

New options to spur on our continuing mission to ease the pain of our veterinary patients.

By Janice Huntingford, DVM, DACVSMR, CVA, CVPP, CCRT, CAVCA

ecently we have progressed light years in our management of pain in our patients. We are now acknowledging that it exists, recognizing its gravity, and doing what we can to prevent and treat it. But we can do better. Here's a look at the options to choose from.

Close encounters: Locoregional anesthesia

A few of the local anesthetic blocks that we use with surgery are line, ring, testicular and ovarian blocks. Regional blocking techniques, such as epidural anesthesia for cats with urethral blockages, are also very valuable to have in your arsenal.

FAR-OUT

Local anesthetics have been found to have local anti-inflammatory, antibacterial, antifungal and antiviral effects. 1,2

And did you know that when using intra-articular blocks, about the only drug you can use safely is mepivacaine?

To infinity and beyond: **Anesthetic CRIs**

There are several methods of administering constant-rate infusions (CRIs) of anesthetic agents, but it is beginning to look like this modality is really helpful for treating and preventing pain in the short and long run.

Subanesthetic-dosage CRIs of ketamine are used for any surgical procedure in our hospital. It helps prevent central sensitization to pain—and that is galactically important. For it to be effective, a bolus must given before the CRI and the CRI must be run during and after surgery. We

usually continue to run it during anesthetic recovery until I am ready to take the catheter out, but it can be run longer for more painful surgeries and conditions.

Star-shaped obstacles: Glial cell-inhibiting drugs

More and more is being discovered about glial cells' role in the pain pathway. It turns out they are active, important and cranky little cells that are quite involved with acute and chronic pain and interference with opioid drug function. They enhance pain and prevent opioids from working. They also contribute to increased pain associated with repeat surgery.

Some glial cell-attenuating drugs are being developed for people to be given with opioids to prevent this hostile atmosphere in there.

DID YOU 🗸 KNOW

Scientists now think that if they can block the opioid receptor (TLR4) on glial cells, that it will stop the withdrawal signs and side effects of the opiates. Stellar!



Regenerative medicine: Straight outta sci-fi

Regenerative medicine includes using platelet-rich plasma (PRP) and stem cells. There are different systems for deriving the PRP from the patient's blood, and none have been found to be superior to the others. Similarly, at the moment, the debate in stem cell use is whether stem cells derived from adipose tissue or those derived from bone marrow are more effective.

I think that regeneration of tendons and ligaments is probably the best use for them at this time.

FAR-OUT FACT

Pets treated with PRP can get more painful for the first few days after treatment. There is no consensus on whether to treat this pain or how to do so.

Coming to a solar system near you

A long-acting bupivacaine liposomal solution has been approved by the FDA and will be released this year. It is purported to have a duration of action of at least 72 hours. This could be ideal for things such as local and regional anesthetic blocks for dental procedures.

Are you ready to rocket your osteoarthritis pain control into orbit? Another drug that

If dogs are from Earth, cats are from Venus?

Because of cats' behavioral and physiologic differences from other species, they can sometimes seem like alien creatures. As a result, effective pain management in cats has continued to be a bit of a black hole, or at least somewhat more of a challenge.

Behavioral differences have made pain evaluation difficult in cats. We are starting to commonly recognize the signs now, such as withdrawal, not jumping onto things, hunched posture and squinting. I think you should consider pain as a potential stand-alone cause of litter box habit changes as well.

Feline physiologic differences have ensured that the traditional nonsteroidal anti-inflammatory and opioid pain medications have not been used much in cats.

Did you know that pruritus receptors are a subset of nociceptors? Why does that matter? Well, for instance, can we then postulate that cats with hyperesthesia of the lumbosacral area may have back pain? Thus, I think amitriptyline is a frequently overlooked and underused drug for pain—and itchiness—in cats. It is a tricyclic antidepressant that we already use to treat feline idiopathic cystitis (FIC) and feline psychogenic alopecia, thinking that it is the behavioral action of the drug that it is helping. Maybe those cats with FIC or self-grooming alopecia of the caudoventral abdomen really have painful bladders.

DID YOU KNOW

Sometimes, pain experts give pets that have chronic pain a *pain vacation*. In addition to being humane, by stopping the pain completely for awhile, it can be an attempt to try to "reset" the nerves to a nonpainful baseline.

I feel will revolutionize the treatment of osteoarthritis is recently released grapiprant. It's a selective antagonist of the EP4 prostaglandin receptor—the main one associated with osteoarthritis. You'll be hearing more about this drug, for sure.

Outside the system: Nonpharmacological modalities

You don't have to turn to drugs alone to control pain. Acupuncture has pain-relieving and drugsparing effects. I use it in my practice extensively.

In addition, physical rehabilitation is the fastest growing part of veterinary medicine. Many physical rehabilitation modalities

can easily be added to your practice, such as laser therapy, exercise therapy, massage therapy, hot and cold therapy and transcutaneous electrical nerve stimulation (TENS).

Two simple and easy modalities you can start with:

- 1. Have all your geriatric patients walk over Cavaletti poles or other raised obstacles placed a precise distance apart. You can construct them yourself or even just use pool noodles. The idea is to just get them flexing and extending all of their joints.
- 2. Train dogs to walk backward to build the hamstrings since the hamstrings support the knee.

References

- 1. Johnson SM, Saint John BE, Dine AP. Local anesthetics as antimicrobial agents: a review. Surg Infect (Larchmt) 2008;9:205-213.
- 2. Cassuto J, Sinclair R, Bonderovic M. Anti-inflammatory properties of local anesthetics and their present and potential clinical implications. Acta Anaesthesiol Scand 2006;50:265-282.

Resource list

Before we start our journey into the expanse of veterinary pain management, keep in mind that we have learned that managing pain in our patients requires a continuum of care. So from the very beginning, I cannot emphasize enough how important it is to watch for, evaluate and attempt to qualify pain being experienced by our veterinary patients. Standardization is important, so I highly recommend using a pain scale, such as the Colorado State University's pain scales for acute and chronic pain in dogs and cats:

Canine acute pain scale: http://www.vasg.org/pdfs/CSU Acute Pain Scale Canine.pdf

Canine brief pain inventory for chronic pain (link to download): http://www.vet.upenn.edu/research/ clinical-trials/vcic/pennchart

Feline acute pain scale: http://csuanimalcancercenter.org/ assets/files/csu acute pain scale feline.pdf

Feline chronic pain scale: http://carrboroplazavet.com/ clients/15178/documents/feline pain.pdf

In my practice, we evaluate and record pain scores for every patient at every visit. Whether that pet is in the clinic for vaccination or surgery, there is a space on the physical examination form for rating current pain status.

keys to communicate clearly about pain in pets

You are your veterinary patient's advocate. Use these principles to prevent discomfort and suffering. By Andrew Claude, DVM, DACVAA

he key to owner communication is to discuss pain management in veterinary patients using clear, understandable, scientific and ethical explanations.

In the pages that follow, we give you four ways to do so.



PRICE SHOULD NOT BE THE PAIN **POINT**

If clients balk at pain control itemized in your estimates, should your hospital itemize it? (If you're not in charge of that, lobby for someone to think about it again.) Is the price of the in-hospital or take-home pain control really accomplishing what you and your team want it to do? "Volume has its place as a money-maker," veterinary business expert Karen Felsted, CPA, MS, DVM, CVPM, CVA says, as she advocates being creative and flexible with pricing. If your hospital increases volume by requiring the medication for every painful procedure or condition, the bosses increase their revenue and everyone enjoys the knowledge that pets that frequent your hospital live with less pain.

NEVER allow clients the choice of whether or not pain management should be used in their pets. This practice is wrong on several levels. First, clients do not possess the understanding of how pain is caused and how to manage it in their pets. You, the veterinarian, do. Why then should the client be forced to make that decision? The Veterinary Oath obligates us as veterinarians to relieve the pain and suffering of our animal patients, so it goes against our oath to allow clients to make that decision.

In addition, it's immoral and, in my opinion, malpractice to withhold pain control in an animal because a client refuses

it. The physiology of pain in animals is very similar to humans. In human medicine, proper analgesic administration and pain mitigation modalities are never a question. In veterinary medicine, we tend to hold onto old, antiquated concepts that allow us to justify substandard pain control.

Finally, including pain management as a part of the entire procedure is more professional and allows you the opportunity to communicate clearly with the client about how pain will be controlled. The focus of the discussion should not be on the necessity of pain management in animals but instead on its benefits (and side effects) for the client's pet.



Present a brief tutorial of the physiology of pain in dogs or cats and how it is similar to that in people.

Relate a personal surgical or other experience the client has had to the procedure that will be performed on the pet. This puts pain control at a personal level. For example, "Mrs. Jones, have you ever had surgery before, or an invasive dental procedure? The surgery we are going to perform on Fluffy is going to produce similar pain and discomfort for her as it did for you. Because we understand pain in dogs and cats, we are going to employ current methods of analgesia to help you take care of Fluffy's postoperative recovery at home in addition to managing her pain here."

Apply the principles of preventive pain control:

Preemptive: Preanesthetic medication, locoregionals **Intraoperative:** Additional pain medication, constant-rate infusions,

locoregionals

Postoperative: Immediately after surgery, apply patient welfare principles and administer postoperative medication. Short term at home, describe to clients the expected levels of discomfort, pharmaceutical choices, patient welfare and comfort at home. Long term at home, recommend modalities such as physical therapy and low level laser therapy.

SHOW THE PAIN

We believe what we see. Get clients involved in a pet's pain assessment daily—and first in the exam room. How do you know the pet is in pain, or will be in pain? Show the client. Go over specific signs with them: unwillingness to move or moving in a stilted or unusual way, out-of-character aggressiveness, increased panting, changes in vocalization, lack of appetite and others.

"Clients are uniquely qualified to assess pain in their pets because they know what the normal behavior is," says Karen Felsted, CPA, MS, DVM, CVPM. "Tell them to trust their instincts. If they think Fluffy is in pain, she probably is. And make it clear what you can do to help, both now and if they think the pain is increasing after they leave."

Andrew Claude, DVM, DACVAA, adds that educating clients about how to assess their pets' pain or discomfort is essential for two reasons:

1) It's beneficial for the pet, and 2) it requires clients to become an active participant in their beloved

pets' recovery.

Having a good working knowledge of nociception, published pain assessment tools and preventive pain management options are important when educating clients about pain assessment in their pets, says Dr. Claude: "Important features of pain assessment in pets should emphasize trends, changes in behavior, changes in appetite, changes in urination or defecation habits and reactions to being touched." He says you can adapt the Glasgow Short Form (dogs), Colorado Pain Charts (dogs and cats), UNESP Botucatu Multidimensional Composite Pain Scales (cats) or, for chronic pain, the Oxford Chronic Pain Assessment Chart so that clients can use them at home under your supervision.

"Another important detail to remember is the at-home pain assessment must be performed by the same individual, in the same place, under similar circumstances and during the same times of the day," says Dr. Claude.

Get your hands on more videos, tips & tools at: dvm360.com/paintoolkit

Identifying pain: Hints from the obscure (cats) to the sad (dogs)

ats hide (or grouch), dogs droop. That's our oversimplified version of how you can clue your veterinary clients in that their pets might be in pain. We got some good specifics from rehabilitation and pain management specialist Janice Huntingford, DVM, DACVSMR, CVA, CVPP, CCRT, CAVCA below. Pass these on to your clients—they want to know, because a pet in pain is painful for all.





Scan to watch now Help your clients clue-in on the sometimes subtle signs of pain in dogs and cats with this handout.



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DENTAL PROCEDURES don't have to be a pain

Karen Felsted, CPA, MS, DVM, CVPM, owner of PantheraT Consulting in Dallas, Texas, has practiced veterinary medicine, owned veterinary clinics, consulted in veterinary practices and spearheaded

efforts to create and manage data to help hospitals for decades. So she knows some of your pain when it comes to talking up the importance of dentistry. Here's her advice to tackle common cat-owner concerns that hold them back from agreeing to needed feline dental work—watch the video at dvm360.com/nodental for more ideas.

"For pet owners, anesthesia is scary."

SOLUTION: They're not a veterinarian like Felsted, so they don't know how safe anesthesia can be and how infrequent complications are. Your team members are your greatest asset



here. Go to dvm360.com/ attackanesthesia for proof.

"Cat owners can be more sensitive to cost than dog owners."

SOLUTION: Data shows cat owners, in general, see veterinarians less and are the beneficiaries of fewer veterinary healthcare dollars than their canine counterparts.

First, start getting past clients' bias against spending money on cats with this dvm360 Leadership Challenge at dvm360.com/cisforcost.

A good second step? Try making *every* month Dental Health Month at your practice. Head over to **dvm360.com/dentalhealthmonth** for more pro tips.



Scan to watch now



Mouth pain stinks, and pets just don't deserve to suffer in silence. Your quickest path to compliance may be client education. Once pet owners believe their pets may be in pain, they may be more likely to seek your help. Use this client handout to start a productive dental conversation with clients.



"How much does it cost?"

Good news: Today's pet owners are more aware of their pets' care options. Bad news: The same recommendation doesn't work the same way for every client. Lets work through a pain example in the veterinary clinic.

By Brendan Howard, dvm360 Business Channel Director

nce upon a time, many veterinarians believed pets didn't feel pain as much as people. And the research that shows gnawing, aching, piercing, short-term or chronic pain inhibits healing didn't exist yet.

But you face clients every day who question whether pre- and post-procedure pain control or

pain medications for long-term conditions are absolutely necessary.

Imagining scenarios with pet-owning "types" developed by Brakke Consulting for the Bayer Veterinary Care Usage Study, we asked one smart practice owner how she talks about pain in her practices.

PRICE SHOPPER

The Price Shopper values veterinary care but shows great loyalty to practitioners who demonstrate that they keep costs down. This client questions any optional pain control and asks about the need for any items you itemize in a treatment plan.

Instead of offering different

or less costly pain control options she's not comfortable with, Robin Downing, DVM, MS, DAAPM, DACVSMR, CVPP, CCRP, says she breaks down the costs of pain control by the day. "I show clients that pain control is really a very inexpensive part of the process of caring for the animal," she says.

TIP

Always assume clients don't know how important pain control is and take the time to answer their questions.

"People used to ask all the time, 'Do I need to spend that \$20 for pain management?" Dr. Downing says.

"Today I just don't give them the choice."

AVOIDER

The Avoider is distrustful, with a do-it-yourself mentality. In these cases, Dr. Downing emphasizes the urgency of performing the procedure and providing pain control. "In chronic-pain cases, I explain the pain is real and we need to deal with it now or deal with it for a

long time."

When it comes to procedures, Downing emphasizes the long-term effects of client decisions made in the moment. "Clients need to know that bad management of acute pain can set up patients for chronic, long-term pain," Downing says.

TIP

Stop with the "ought to"s and "should"s and start with the "need"s and "deserve"s.

PROCRASTINATOR

The Procrastinator values veterinary care and likes your clinic, but finds visits stressful and so is less likely to visit. In these cases, Dr. Downing recommends emphasizing the risks of waiting and removing barriers to needed visits, procedures or medications with as much convenience and connection as you can muster.

TIP

Listen and dig into the clients' needs and interests. Take time to form the long-term rapport you need to bond clients.



Keeping track of **pain** control is not a pain!

At least it doesn't have to be. Let your practice software help! *By Kathryn Primm, DVM*

iagnosing pain sometimes is the easy part. Making sure that clients understand and comply can be the hard part. Practice owners and managers, you can jump-start this right now (or, y'know, in the near future). Associates, get to lobbying for your bosses to do the right thing! You know, be a PAIN.

Here are my three easy tips to make communication and compliance easier. Just like the cooking spray, PAM makes compliance less sticky:

P is for Plan and Protocol

Use select diagnosis codes on any pet with a diagnosis (such as osteoarthritis) that could require pain control. Those codes will "flag" the chart and make pets searchable for future interactions about refills, rebates or special pricing.

A is for Automatic

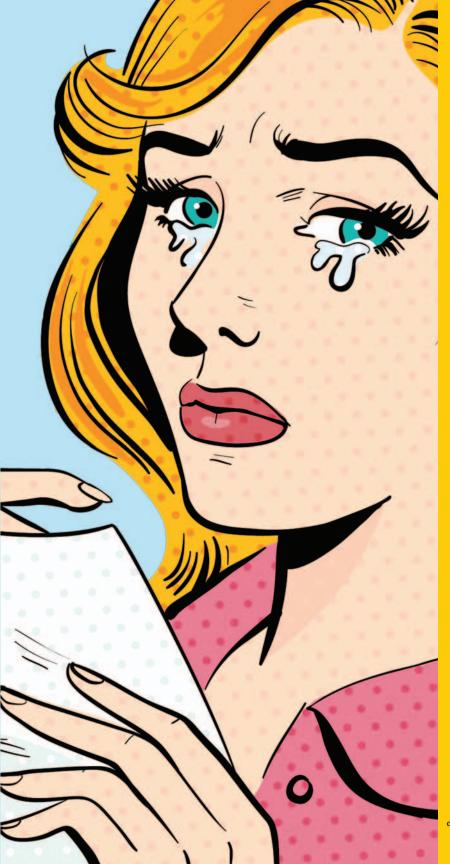
Set up a hospital-wide monitoring protocol. Use your reminder system to automatically (automatically—don't just make a bunch of work for receptionists!) generate postcards and emails for clients without staff action. For example, if your hospital recommends blood work every six months for all pets receiving pain medication, reminders could go out automatically so that treated pets stay safe and their pain is managed.

M is for Medication reminders

Use your software to add notes to follow up with clients when they administer particular drugs in your inventory that you know have a potential to be long-term. Contact your software company for specifics,

but most of them have an easy way to perform this task. Then follow up with phone calls by veterinarians or staff. These calls are one-on-one opportunities to reinforce the importance of ongoing pain control. Make sure that everyone doing the calls knows the specifics of pain control medication and monitoring and is on the same page. (This probably starts with a staff-wide meeting.)

Don't beat up on yourself if your clients question you the first time—or the first 10 times—you advocate for pain control. Sometimes clients need to hear their pets are experiencing pain more than once and need time to decide to do something. They will be more likely to think it's important if you think it's important enough to follow up.



PEOPLE OWER

On top of practice software tips, here are two people tweaks that help pain guru Robin Downing, DVM, MS, DAAPM, DACVSMR, CVPP, CCRP, owner of Windsor Veterinary Clinic and The Downing Center for Animal Pain Management in Windsor, Colorado, keep her pained pets in primo condition:

- ✓ Review prescribed medications and feeding at each and every visit. "This doesn't take very long," Dr. Downing says, "and it's accomplished by my veterinary nurse before I enter the exam room."
- ✓ When pain is involved, when a patient needs to be seen again, schedule the next appointment before the client leaves the building. "My team schedules the next appointment before the transaction is complete," Dr. Downing says.

Refill, sure ... but do you reassess?!

Veterinarians don't have "the magic bullet" yet to arrest or reverse degenerative joint disease in pets, so pain practitioner Robin Downing, DVM, MS, DAAPM, DACVSMR, CVPP, CCRP, says patients need not just initial visits, but regular reassessment.

he co-owner of Windsor Veterinary Clinic and the Downing Center for Animal Pain Management in Windsor, Colorado, says she sees patients from other practices all the time whose records show treatment plans without enough rechecks.

"Every single pain patient that I see who comes into my practice who has been seen somewhere else ... is typically provided a monotherapy, a single medication, and refill, refill, refill, no reassessment," Dr. Downing says in the audio clip (right) from her fascinating extended podcast. "Part of the dilemma we face is [the difference

between] what we know about managing pain and what we do about managing pain."

Now, any time, is a great time, Dr. Downing says, to step back and reassess your own reassessment philosophy and protocols. Make sure you emphasize the three R's of pain management: recheck the patient, reassess the condition and revise your treatment plan.

"Degenerative joint disease is a progressive process, and we don't have the magic bullet to arrest that progression," Dr. Downing says. "So we need to deal with the consequences of that progression, and that means revising the pain plan."

Listen to the clip, right.

Scan this code to listen to Dr. Downing's 3 R's of pain management.





Scan this code to listen to Dr. Downing's extended podcast or find more information at dvm360.com/podcasts.





kein in p On a scale of 1 to 10, these hacks are an 11.

Communicating pets pain there's a hack for that.

"Clients always say, 'But the dog doesn't cry or whine!' I always ask the client if they have any aches and pains, and they will say, 'My knees, my back, my neck...' And I say, 'Did you walk in the door complaining about it?' When they say no, I explain it's the same with our pets. They don't have to cry out all day long to prove they're painful. They're stronger and tougher than we are, and they don't complain and beg for attention on social media like we do!"

"All our veterinary technicians know that pain is not permitted. They've been instructed to alert the veterinarian if any pain is perceived and are rewarded for recognizing pain."

"If a client denies that a cat is in chronic pain, I bet them a week's analgesia. If the cat feels fine, they won't see any change. No one has asked for credit on the analgesics yet."

Help clients administer meds properly

To increase medicine administration compliance (especially long-term), offer owners day-of-the-week medicine containers and pill splitters, if needed. That way, owners can quickly double-check if they gave their pets' medicines appropriately. And when others besides the owners are caring for the pets, the containers make administering medicine easier and more accurate.

Dr. Andrea Wade La Raus, Portland, Oregon

The cheesiest trick in the book

To trick cats into taking pills, I use Easy Cheese (Kraft). I make a line of cheese, then a dot, then another line. The dot contains the pill. Cats eat the cheese quickly, and because there is a second line, they continue to eat very quickly and swallow the pill without noticing they consumed it. It doesn't work if the pill is just placed in a glob of cheese; the cat will spit the pill out. It's the linedot-line technique that consistently works for my clients and me. Dr. Michelle Danna-Christian, Dunedin, Florida

No sticker shock here: Labeling syringes helps you avoid medication errors

We use the round, colored stickers usually found in office supply or craft stores to write what kind of medicine or vaccine we want to pull up in the syringe. We use abbreviations such as k/v for ketamine and valium, HDM for hydromorphone, and DD for dexmedetomidine. We place the stickers on the syringes after we draw up the medicine. It is our way to double check what we are administering.

Laura Boynton, veterinary assistant, Traverse City, Michigan

As part of the dvm360 Clinical Updates: Practice Hacks survey, over a hundred veterinarians, practice managers and team members chimed in with ways to make life easier for you, your patients and your clients, which we've organized into categories (get the full list dvm360.com/hacks). It's a hack jackpot (a hackpot?)! But we didn't stop there—we've also spliced in a number of Idea Exchanges from Veterinary Medicine.



Dr. Robin Downing tells us about three exciting updates in pain management, along with her most special pain management case.

hen we sat down with pain management expert Dr. Robin Downing at CVC Kansas City, she told us what she's enthusiastic about in pain control for pets right now:

> The release of a long-acting buprenorphine (Simbadol—Zoetis) labeled for cats for postoperative pain. One subcutaneous injection lasts for 24 hours, and it can be give once a day for up to three days.

> Gapiprant (Galliprant—Aratana/Elanco), a new NSAID for dogs that works through a different pathway than other NSAIDs.

> A liposomal formulation of bupivacaine that provides local anesthetic relief in dogs after cruciate surgery.

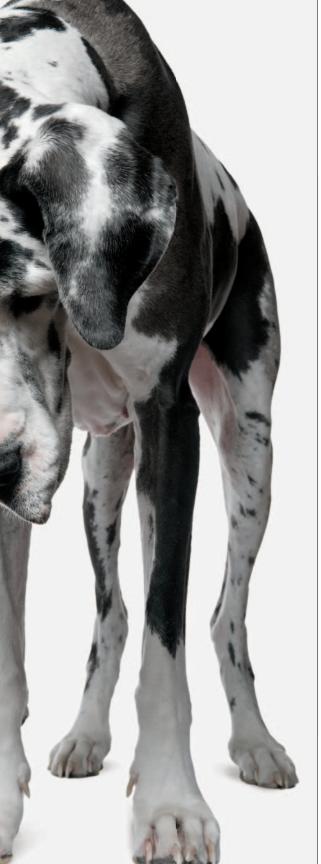
All exciting stuff! But what really got us was her story of Payton, a 4-year-old Great Dane

crippled with bilateral cranial cruciate injuries of two years' duration in addition to severe back pain. Hear about Payton's journey to a long, comfortable life with the help of some of the wonders of pain management, including pain medication, therapeutic exercise, acupuncture and laser therapy.





Scan this code to watch the video now or check it out at dvm360.com/paincontroltoolkit



GALLIPRANT® (grapiprant tablets)

For oral use in dogs only

20 mg, 60 mg and 100 mg flavored tablets

A prostaglandin E. (PGE.) EP4 receptor antagonist; a non-cyclooxygenase inhibiting, non-steroidal anti-inflammatory drug

Caution: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian. Before using this product, please consult the product insert, a summary of which follows:

Indication: GALLIPRANT (grapiprant tablets) is indicated for the control of pain and

inflammation associated with osteoarthritis in dogs.

Dosage and Administration: Always provide "Information for Dog Owners" Sheet with prescription. Use the lowest effective dose for the shortest duration consistent with individual response.

The dose of GALLIPRANT (grapiprant tablets) is 0.9 mg/lb (2 mg/kg) once daily.

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

Contraindications: GALLIPRANT should not be used in dogs that have a hypersensitivity to grapiprant.

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

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 $either \, GALLIPRANT \, or \, a \, vehicle \, control \, (tablet \, minus \, galliprant) \, at \, a \, dose \, of \, 2 \, mg/kg \, (0.9 \, mg/lb)$ once daily for 28 days. GALLIPRANT-treated dogs ranged in age from 2 yrs to 16.75 years. The following adverse reactions were observed:

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

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

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

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

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

Effectiveness: Two hundred and eighty five (285) client-owned dogs were enrolled in the study and evaluated for field safety. GALLIPRANT-treated dogs ranging in age from 2 to 16.75 years and weighing between 4.1 and 59.6 kgs (9-131 lbs) with radiographic and clinical signs of osteoarthritis were enrolled in a placebo-controlled, masked field study. Dogs had a 7-day washout from NSAID or other current OA therapy. Two hundred and sixty two (262) of the 285 dogs were included in the effectiveness evaluation. Dogs were assessed for improvements in pain and function by the owners using the Canine Brief Pain Inventory (CBPI) scoring system.¹ A statistically significant difference in the proportion of treatment successes in the GALLIPRANT group (63/131 or 48.1%) was observed compared to the vehicle control group (41/131 or 31.3%). GALLIPRANT demonstrated statistically significant differences in owner assessed pain and function. The results of the field study demonstrate that GALLIPRANT, administered at 2 mg/kg (0.9 mg/pound) once daily for 28 days was effective for the control of pain and inflammation associated with osteoarthritis.

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

How Supplied: 20 mg, 60 mg, 100 mg flavored tablets in

7. 30 and 90 count bottles.

NADA 141-455, Approved by FDA
US Patents: 6,710,054; 7,960,407; 9,265,756
Made in New Zealand Manufactured for: Aratana Therapeutics, Inc., Leawood, KS 66211 wave in the weathern wallulactured for Android The apequics, inc., Leawbood, KS bb211
Reference: 1. http://www.vet.upenn.edu/dos/default-source/VCIC/canine-bpi_userguide.pdf?sfvrsn=0
Additional information is available at 1-888-545-5973.
GALLIPRANT is a trademark of Aratana Therapeutics, Inc.

C Aratana Therapeutics, Inc. June 2016

Brief Summary: AT1-040-16

XARATANA



To learn more, please visit galliprantfordogs.com/vet

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

IMPORTANT SAFETY INFORMATION

Not for use in humans. For use in dogs only. Keep this and all medications out of reach of children and pets. Store out of reach of dogs and other pets in a secured location in order to prevent accidental ingestion or overdose. Do not use in dogs that have a hypersensitivity to grapiprant. If Galliprant is used long term, appropriate monitoring is recommended. Concomitant use of Galliprant with other anti-inflammatory drugs, such as COX-inhibiting NSAIDs or corticosteroids, should be avoided. Concurrent use with other anti-inflammatory drugs or protein-bound drugs has not been studied. The safe use of Galliprant has not been evaluated in dogs younger than 9 months of age and less than 8 lbs (3.6 kg), dogs used for breeding, pregnant or lactating dogs, or dogs with cardiac disease. The most common adverse reactions were vomiting, diarrhea, decreased appetite, and lethargy. Please see brief summary on page 31 for prescribing information.

1. Kirkby Shaw, K., Rausch-Derra, L., and Rhodes, L. 2016. "Grapiprant: an EP4 prostaglandin receptor antagonist and novel therapy for pain and inflammation." Vet. Med. Sci. 2: 3-9 2. Rausch-Derra, L., Huebner, M., and Rhodes, L. 2015. "Evaluation of the safety of long-term, daily oral administration of grapiprant, a novel drug for treatment of osteoarthritis pain and inflammation, in healthy dogs." Am. J. Vet. Res. 76.10: 853-859.

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