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TVC

April Digital Issue 2018

The TVC Veterinary Cooperative SM

Digital magazine

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Eliminating Mixed Messages

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

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

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

Buying or Selling? Let's Talk

By Allison Morris, President

On our members-only website homepage, we re-cently posted a button on the right-hand side labeled "Buy or Sell Your Practice."

As the animal health industry continues to consolidate, and with more and more practitioners nearing retirement, we would like to help support veterinarians who wish to sell to other independent business owner-veterinarians to help our cause as a cooperative.

If you are looking to transition and sell your clinic, or if you wanted to buy an independent clinic, we certainly want to help keep it independent, so we are happy to help network there as well.

This feature is designed as a place to send feedback from members looking to buy or sell. If you are looking to transition and sell your clinic, or if you wanted to buy an independent clinic, we certainly want to help keep it independent, so we are happy to help network there as well.

Let me be clear – *TVC* is not looking to buy or sell practices. We never want to corporately own practices. That's against who we are, but we do want to help our members network.

We will not disclose any information without the permission of the member who contacts us. *TVC* will help you network with any leads that have come to our attention, with yours and their permission.

We also have a resource in our Rebates & Discounts section called Total Practice Solutions. They are our brokers that specialize in the appraisal and sale of veterinary practices. They offer exit strategies, assistance with lenders, associate buy-ins and business consulting.

With the "Buy or Sell Your Practice" feature, we believe there is certain networking that can develop.

Have suggestions on how to create a buy/sell forum? Let us know! Email allison.morris@tvc.coop

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The management of osteoarthritis (OA) in dogs is a critically important aspect of small animal practice. Osteoarthritis is the most common orthopedic condition in dogs. By some estimates, one dog in five has OA. The purpose of this presentation is to explain the management through assessment and perspective. More specifically, clinical signs, joint changes, OA explanation, stages of OA, and management guidelines will be discussed including the incorporation of UC-II into the protocol. In addition, the science and application of UC-II will be emphasized and supported by studies in humans, horses, and dogs.

TVC Central

Promotions

Ceva: Q2 Promos are now available on Adaptil, Feliway, Duoxo, Vectra, and Catego!

KVP: New FURminator: New and better than ever! 10% off through May 31st!

ProVetLogic: Hospital Starter Kit only $495 including shipping! (Regularly $666.80)

Securos Surgical (an MWI brand): TVC owners can now enjoy a 2% rebate on Securos Surgical purchases, plus current TVC discounts. See detailer for more information.

Veterinary Diagnostics Institute (VDI): Exclusively for TVC – New customers get 25% off any Vitamin D kit now through May 31, 2018.

VetOne (MWI's private label brand): Get a 7.5% rebate on purchases of all OstiFen (carprofen) chewable tablets, plus current TVC rebate and discount. Now through June 30, 2018. Get a 2% rebate on all other VetOne purchases, plus current TVC discounts. See detailer for more information.

Vetsource: TVC Owners, your new Vetsource perks are here. Check out the new Vetsource detailer and the TVC University video "How to Make Money From Online Pharmacies" on the TVC University webpage to learn more.

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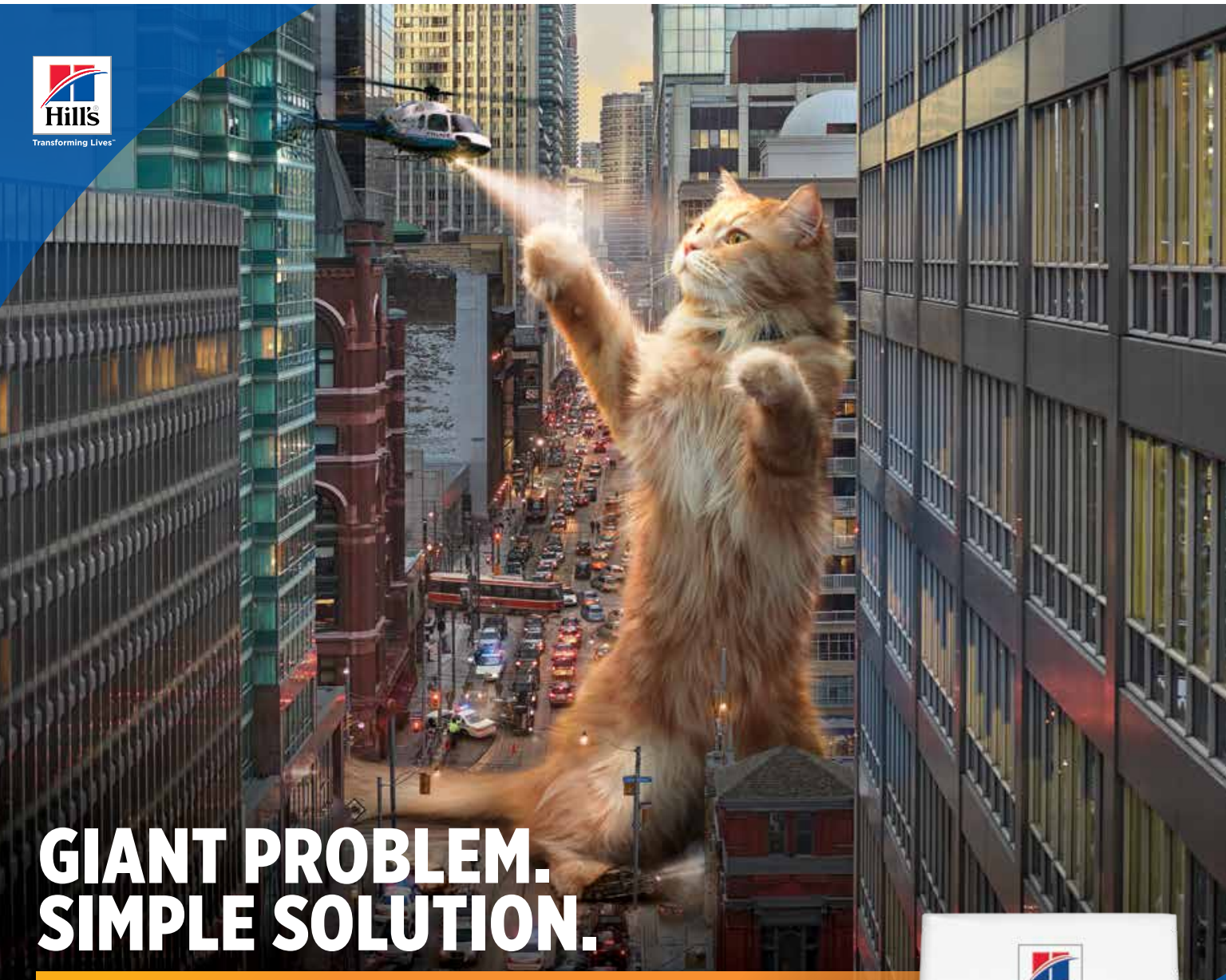

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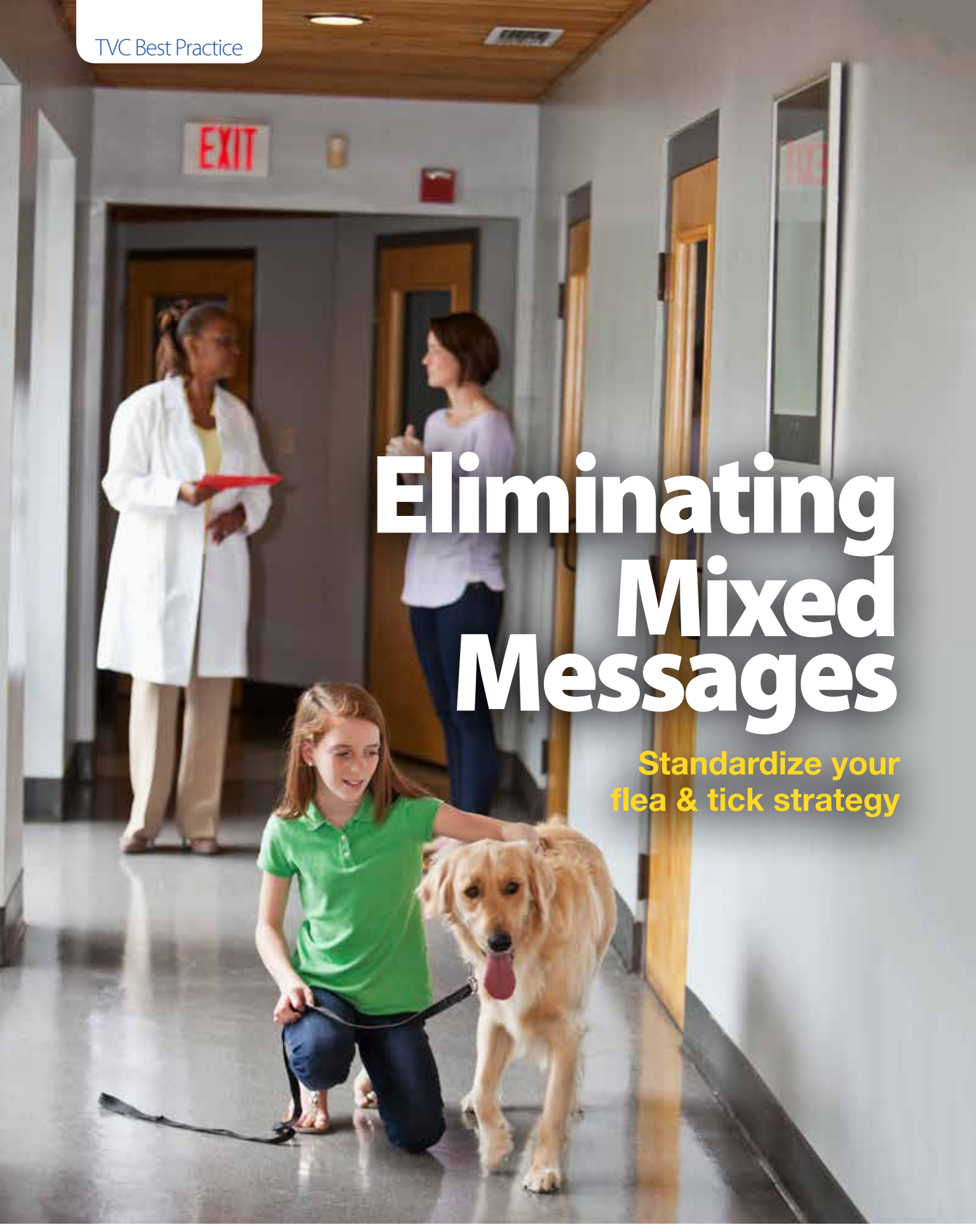
[1]Kruger JM, Lulich JP, MacLeay J, et al. Comparison of foods with differing nutritional profiles for long-term management of acute nonobstructive idiopathic cystitis in cats. *J Am Vet Med Assoc*. 2015;247(5):508-517. [2]Lulich JP, Kruger JM, MacLeay JM, et al. Efficacy of two commercially available, low-magnesium, urine acidifying dry foods for the dissolution of struvite uroliths in cats. *J Am Vet Med Assoc*. 2013;243(8):1147-1153. [3]Gluhek T, Bartges JW, Callens A, et al. Evaluation of 3 struvite-oxalate preventative diets in healthy cats. *J Vet Intern Med*. 2012;26:801. [4]Data on file. Hill's Pet Nutrition, Inc. 2017. Urine calcium directly measured and risk of calcium oxalate crystal formation measured by Hill's COT test vs. US ROYAL CANIN VETERINARY DIET® Feline Urinary SO® dry formula.



Eliminating Mixed Messages

Standardize your flea & tick strategy

The best approach to gain compliance on flea & tick preventives is a simple, standardized one, says Dr. Randolph S. Stepusin, DVM, President and CEO of A Step Up Veterinary Clinic, Bethel Park, Pa.

In other veterinary practices, Dr. Stepusin says he has seen the confusion among staff members trying to keep up with the individual product preferences and recommendations of veterinarians. Or worse, the veterinary technician or staff member may not even know what the veterinarians recommend, and simply tell the client "Here is what we have."

In those instances, the chances are high that the client will get mixed messages about which product to use and for how long. That opens the possibility of the client questioning whether they really need to be on a preventive for 12 months or use a particular product, Dr. Stepusin says.

The TVC Owner offered the following best practices for selling and gaining compliance with flea & tick preventive products.

Standardize

"We standardize the approach," Dr. Stepusin says. That means every client gets asked the same questions for routine visits, and everyone gets presented the same products. There is a company line, "and all the veterinarians in our clinic are on board," Dr. Stepusin says.

The standardized approach benefits the support staff, including front desk personnel, nurses, and technicians. "Everybody is on the same page," Dr. Stepusin says. "We got together and said we are going to offer these particular products. We don't offer a smorgasbord."

Use the guidelines

A Step Up Veterinary Clinic follows the Companion Animal Parasite Council (CAPC) guidelines for flea & tick preventives. They also follow AAHA's guidelines for vaccinations.

"We outsource it to the experts," says Dr. Stepusin. "Per the standards, any pet should be on preventives throughout the year. The entire year. No matter their lifestyle. We can point to that."

Dr. Stepusin says he's worked in plenty of clinics where there are three veterinarians and they all recommended different products. "Or even more frustrating, both for clients and support staff, is when one veterinarian says you can stop using this stuff in the winter. Then the next visit, the client sees the other veterinarian, and he says they should have been using the preventive all winter. There's no continuity of the recommendation."

If you look at CAPC, it doesn't matter if they're an indoor or outdoor dog or cat, the recommendation is still that they be on a preventive 12 months of the year, Dr. Stepusin says. "We echo that."

> "Per the standards, any pet should be on preventives throughout the year. The entire year. No matter their lifestyle. We can point to that."
>
> – Dr. Randolph S. Stepusin, DVM

Plus, this approach makes it easier on support staff. If a client asks the reasoning or research behind the preventive recommendation, A Step Up Veterinary Clinic staff member can quickly point to the CAPC website and other reputable sources.

Ask open-ended questions

A Step Up Veterinary Clinic veterinarians and staff try to ask open-ended questions with flea & tick preventives. "For instance, 'What flea & tick preventive are you using?' vs. 'Are you using a flea & tick preventive?' We've trained the staff to use open-ended questions vs. close-ended questions."

Focus on one product offering per category

Dr. Stepusin says his clinic offers one preventive within a category. So, for chewables, his clinic offers one product, and for topicals, there is one recommendation as well. That allows the clinic to have different price points – a $14-16 a month range for chewables, and $9-10 for the more price-minded client who may want a cheaper option with a topical. "But, they are in different categories."

Monitor your prices – because your customers will

Many clinics fall victim to the old standard of 100 percent markup on products. "You can't do that anymore," Dr. Stepusin says. "Before I started my clinic, I worked at a clinic where they did 100 percent markup, and we had next to no compliance. If I had compliance, I had people using generics – not things purchased from us."

With in-clinic recommendations, A Step Up can back it up with rebates, which helps to lower the cost for people, as well as the manufacturer guarantees.

Cost is a major factor – perhaps the key factor – when it comes to compliance.

Dr. Stepusin says keeping the price point as low as possible enables practices to be competitive. "You may generate additional revenue per box sold (if you went with a higher margin), but you're going to sell fewer boxes, and overall, your revenue is going to be less."

A Step Up offers a competitive price on its flea & tick preventives, and they monitor the price. "People compare our prices to 1-800-PetMeds and Fosters & Smith," he says. "As soon as they see a clinic's prices, most people are going to sit in the exam room and look at the other sites on their phone. If your staff is telling them a price and they see it is much lower online, I don't know if they'd believe you on anything else you would say. We give our price, and then they can look it up and see that it's true and competitive. It gives us that much more credibility, and also they're inclined to believe us on everything else that we say."

"It makes it easy on the staff. If they ask why we are changing, we can point to the updated AAHA guidelines. We're also getting these dogs protected against Lyme disease as quickly as possible, vs. one veterinarian vaccinating at 8 weeks and another still waits until 12 weeks."

Take advantage of training

A Step Up Veterinary Clinic usually has staff training at least once a quarter. "Manufacturers are more than happy to come in and have training sessions," Dr. Stepusin says. "They can answer questions, concerns, etc. These are clinic wide sessions. We divide it up by topics. The last one was on Lyme disease. The next one may be the actual preventive products themselves. The one following that may be on ehrlichiosis. We have those to refresh their memory."

Communicate any changes

When company policy changes, you must make sure everyone is aware of that, Dr. Stepusin says. For instance, when the AAHA recently updated their vaccine guidelines to say veterinarians are allowed to start vaccinating dogs for Lyme disease at 8 weeks, A Step Up followed that, and communicated the change with staff. "It makes it easy on the staff. If they ask why we are changing, we can point to the updated AAHA guidelines. We're also getting these dogs protected against Lyme disease as quickly as possible, vs. one veterinarian vaccinating at 8 weeks and another still waits until 12 weeks."

Choose one manufacturer

Dr. Stepusin says many clinics have too much product on their shelf. "It's easier to choose one manufacturer to work with," he says. "You're going to be able to offer a better price point for your client. You'll also be able to standardize much easier than if you try to be like Walmart and have one of everything on the shelf. That's sounds great in theory, but it drops your compliance." ■

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BRAVECTO® (FLURALANER)

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

Also available as a topical application.

Important Safety Information

BRAVECTO Chews for Dogs: The most common adverse reactions recorded in clinical trials were vomiting, decreased appetite, diarrhea, lethargy, polydipsia, and flatulence. Bravecto has not been shown to be effective for 12-weeks' duration in puppies less than 6 months of age. Bravecto is not effective against lone star ticks beyond 8 weeks after dosing. **Please see Prescribing Information on following page.**

BRAVECTO® (FLURALANER)

Flavored chews for dogs.

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

Description:
Each chew is formulated to provide a minimum dose of 11.4 mg/lb (25 mg/kg) body weight.

The chemical name of fluralaner is (±)-4-[5-(3,5-dichlorophenyl)-5-(trifluoromethyl)-4,5- dihydroisoxazol-3-yl]-2-methyl-N-[2-oxo-2-(2,2,2-trifluoroethylamino) ethyl]benzamide.

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.

Dosage and Administration:
Bravecto should be administered orally as a single dose every 12 weeks according to the **Dosage Schedule** below to provide a minimum dose of 11.4 mg/lb (25 mg/kg) body weight.

Bravecto may be administered every 8 weeks in case of potential exposure to *Amblyomma americanum* ticks (see **Effectiveness**).

Bravecto should be administered with food.

Dosage Schedule

Body Weight Ranges (lb)	Fluralaner Content (mg)	Chews Administered
4.4 – 9.9	112.5	One
>9.9 – 22.0	250	One
>22.0 – 44.0	500	One
>44.0 – 88.0	1000	One
>88.0 – 123.0*	1400	One

*Dogs over 123.0 lb should be administered the appropriate combination of chews

Treatment with Bravecto may begin at any time of the year and can continue year round without interruption.

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 (see **Effectiveness**).

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.

Clinical Pharmacology:
Peak fluralaner concentrations are achieved between 2 hours and 3 days following oral administration, and the elimination half-life ranges between 9.3 to 16.2 days. Quantifiable drug concentrations can be measured (lower than necessary for effectiveness) through 112 days. Due to reduced drug bioavailability in the fasted state, fluralaner should be administered with food.

Mode of Action:
Fluralaner is for systemic use and belongs to the class of isoxazoline-substituted benzamide derivatives. Fluralaner is an inhibitor of the arthropod nervous system. The mode of action of fluralaner is the antagonism of the ligand-gated chloride channels (gamma-aminobutyric acid (GABA)-receptor and glutamate-receptor).

Effectiveness:
Bravecto began to kill fleas within two hours after administration in a well-controlled laboratory study. In a European laboratory study, Bravecto killed fleas and *Ixodes ricinus* ticks and reduced the numbers of live fleas and *Ixodes ricinus* ticks on dogs by >98% within 12 hours for 12 weeks. In a well-controlled laboratory study, Bravecto demonstrated 100% effectiveness against adult fleas 48 hours post-infestation for 12 weeks. In well-controlled laboratory studies, Bravecto demonstrated ≥93% effectiveness against *Dermacentor variabilis*, *Ixodes scapularis* and *Rhipicephalus sanguineus* ticks 48 hours post-infestation for 12 weeks. Bravecto demonstrated ≥90% effectiveness against *Amblyomma americanum* 72 hours post-infestation for 8 weeks, but failed to demonstrate ≥90% effectiveness beyond 8 weeks.

In a well-controlled U.S. field study, a single dose of Bravecto reduced fleas by ≥99.7% for 12 weeks. Dogs with signs of flea allergy dermatitis showed improvement in erythema, alopecia, papules, scales, crusts, and excoriation as a direct result of eliminating flea infestations.

Palatability. In a well-controlled U.S. field study, which included 559 doses administered to 224 dogs, 80.7% of dogs voluntarily consumed Bravecto within 5 minutes, an additional 12.5% voluntarily consumed Bravecto within 5 minutes when offered with food, and 6.8% refused the dose or required forced administration.

Animal Safety:
Margin of Safety Study: In a margin of safety study, Bravecto was administered orally to 8- to 9-week-old puppies at 1, 3, and 5X the maximum label dose of 56 mg/kg at three, 8-week intervals. The dogs in the control group (0X) were untreated.

There were no clinically-relevant, treatment-related effects on physical examinations, body weights, food consumption, clinical pathology (hematology, clinical chemistries, coagulation tests, and urinalysis), gross pathology, histopathology, or organ weights. Diarrhea, mucoid and bloody feces were the most common observations in this study, occurring at a similar incidence in the treated and control groups. Five of the twelve treated dogs that experienced one or more of these signs did so within 6 hours of the first dosing. One dog in the 3X treatment group was observed to be dull, inappetant, with evidence of bloody diarrhea, vomiting, and weight loss beginning five days after the first treatment. One dog in the 1X treatment group vomited food 4 hours following the first treatment.

Reproductive Safety Study: Bravecto was administered orally to intact, reproductively-sound male and female Beagles at a dose of up to 168 mg/kg (equivalent to 3X the maximum label dose) on three to four occasions at 8-week intervals. The dogs in the control group (0X) were untreated.

There were no clinically-relevant, treatment-related effects on the body weights, food consumption, reproductive performance, semen analysis, litter data, gross necropsy (adult dogs) or histopathology findings (adult dogs and puppies). One adult treated dog suffered a seizure during the course of the study (46 days after the second treatment). Abnormal salivation was observed on 17 occasions: in six treated dogs (11 occasions) after dosing and four control dogs (6 occasions).

The following abnormalities were noted in 7 pups from 2 of the 10 dams in only the treated group during gross necropsy examination: limb deformity (4 pups), enlarged heart (2 pups), enlarged spleen (3 pups), and cleft palate (2 pups). During veterinary examination at Week 7, two pups from the control group had inguinal testicles, and two and four pups from the treated group had inguinal and cryptorchid testicles, respectively. No undescended testicles were observed at the time of necropsy (days 50 to 71).

In a well-controlled field study Bravecto was used concurrently with other medications, such as vaccines, anthelmintics, antibiotics, and steroids. No adverse reactions were observed from the concurrent use of Bravecto with other medications.

Storage Information:
Do not store above 86°F (30°C).

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

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Canine Vaccine Guidelines

AAHA's new guidelines reflect technology, attitudinal changes among pet owners, and providers

Experts and veterinary practitioners believe vaccination protocols should be individualized based on the patient's risk factors, life stage, and lifestyle. The *2017 AAHA Canine Vaccination Guidelines* were developed to help further support veterinary teams as they determine these protocols for each of their patients.

Published in the September/October edition of the *Journal of the American Animal Hospital Association* – and for the first time, as an online educational resource for the veterinary medical profession – the revised guidelines offer updates to the *2011 AAHA Canine Vaccination Guidelines*, and are designed to help practicing veterinarians meet patient and client needs in what AAHA describes as a complex infectious disease environment.

The new guidelines include:

- A Lifestyle-Based Vaccine Calculator, i.e., an interactive tool designed to support the veterinary team's vaccination recommendations based on risk factors and lifestyle.
- Quick reference tables for client-owned and shelter-housed dogs.
- Antibody testing algorithms (qualitative and quantitative).
- Recommendations for overdue patients (the first time this type of guidance has been available based on the age of the dog and specific vaccine).
- State-by-state rabies laws and exemption resources.
- Vaccine storage and handling information, including tips for avoiding misidentification of vaccines, monitoring storage conditions, and the consequences of subjecting vaccines to out-of-range temperatures.
- Immunotherapeutic product summaries.
- An expansion of the "Frequently Asked Questions" section.

The guidelines also provide expert insight on several controversial issues, including frequency, dosing, scheduling, and duration of immunity for core and noncore vaccines; titer result interpretation; and adverse reaction identification and reporting.

"The take-home messages are that while the importance of individualizing vaccination recommendations for dogs, as well as basic concepts such as core and non-core vaccines remain unchanged, the new guidelines include lots of valuable new information for practitioners," says Link Welborn, DVM, DABVP, chair of the AAHA Canine Vaccination Guidelines Task Force.

"Producing the guidelines as an online educational resource allows for ongoing updates to be made whenever appropriate, instead of having gaps of years between versions," he adds. The online format is also accessible on mobile devices.

Antibody testing

The demand for and availability of antibody testing (both qualitative and quantitative) for canine vaccine-preventable diseases has increased substantially over the past decade, the guidelines point out.

Says Welborn, "In a 2015 Gallup survey, 54 percent of Americans said that it is extremely important that parents get

their children vaccinated, down from the 64 percent who held this belief 14 years before. As views about childhood vaccinations and the associated potential risks change, so do perspectives about vaccinating pets.

"Accordingly, a larger number of pet owners are looking for alternatives to vaccination. Antibody testing is more available and less expensive due to an increasing number of reference laboratories providing this service as well as the development of in-hospital antibody test kits for canine distemper (CDV), adenovirus (CAV), and parvovirus (CPV)."

> "The take-home messages are that while the importance of individualizing vaccination recommendations for dogs, as well as basic concepts such as core and non-core vaccines remain unchanged, the new guidelines include lots of valuable new information for practitioners."
>
> – Link Welborn, DVM, DABVP, chair of the AAHA Canine Vaccination Guidelines Task Force.

The guidelines address indications, interpretation, and recommended actions with respect to testing for CDV, CAV, and CPV, and point out that determination of antibody status is particularly relevant for patients that:

- Have an unknown vaccination history.
- Are overdue for vaccination.
- Are receiving immunosuppressive medications.
- Have a history of vaccine adverse reactions.

Therapeutic biologics

Whereas traditional vaccines interact with the immune system prior to exposure, with the goal of preventing or lessening the severity of disease upon exposure, therapeutic biologics are designed for the treatment of disease and are intended to elicit an immune response that may alter the course of the disease (e.g., cancer) or modify the patient's response to an immunologically mediated disorder (e.g., atopic dermatitis, osteoarthritis), according to AAHA.

The guidelines include a section on this rapidly developing area, says Welborn. "More products are on the horizon, and the task force was not aware of any other compilation of information on the availability and intended use of these novel adjunctive immune-based therapies."

Other points

Vaccine coordinator: AAHA recommends that veterinary practices appoint a vaccine coordinator. "I'm not aware of any source of information about the number of practices that have a vaccine coordinator, but I suspect the number is quite low," says Welborn. "Hopefully this will change as a result of the inclusion of the vaccine handling and storage section in the guidelines."

Vaccine handling and storage: This section is composed of excerpts that are applicable to animal hospitals from the Centers for Disease Control and Prevention Vaccine Storage & Handling Toolkit, released in June 2016, says Welborn. "The only additional guidance is that at room temperature, some of the more sensitive modified live (MLV) vaccines may lose the ability to immunize within two to three hours following reconstitution. It is recommended that unused MLV vaccines be discarded one hour after reconstitution regardless of whether or not the product has been refrigerated."

Shelter-housed dogs: The 2017 AAHA guidelines change some of the recommendations from the 2011 guidelines, points out Welborn. One of these is a recommendation to administer two doses of Canine Distemper Virus, Adenovirus-2 and Parvovirus vaccine two to three weeks apart, with the first dose administered at the time of intake for dogs >18 weeks of age. (The 2011 guidelines recommended only a single dose for these dogs.) The change was based on a strong consensus of opinion among veterinarians caring for shelter-housed dogs. ■

Editor's note: The 2017 AAHA Canine Vaccination Guidelines may be viewed at https://www.aaha.org/public_documents/guidelines/vaccination_recommendation_for_general_practice_table.pdf

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[1]Data on file at Merial.
[2]Data on file at Merial. Based on veterinary dispensed dose data.

NexGard is a Merial product.
Merial is now part of Boehringer Ingelheim.

Boehringer Ingelheim

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

Product rebates to veterinarians spur tax questions

VIN News Service recently highlighted product rebates and the tax questions that come along with them in an article. "When you receive a rebate for purchasing certain quantities of a drug, do you report it as income, or pocket the cash without paying the taxes? the person asked on a message board of the Veterinary Information Network, an online community for the profession." For honesty's sake, report the money, an accountant advises. Read the article at: http://news.vin.com/VINNews.aspx?articleId=48260.

Fear Free, Ceva partner to launch veterinary practice certification

Fear Free℠ practice certification will be offered to qualifying veterinary hospitals starting in April 2018, thanks to a partnership with Ceva Animal Health, according to a release. Since it launched in 2016, more than 20,000 professionals have enrolled so far, and interest in practice certification has been equally high. "Fear Free is excited to leverage Ceva's existing talent of highly-qualified, educated, and passionate veterinarians for practice certification," said Dr. Marty Becker, founder and CEO of Fear Free. "This collaboration will allow Fear Free to offer a larger number of certification visits, with a highly trained team, at affordable rates to hospitals."

APPA: $69.51 billion spent on pets last year

Bob Vetere, president and CEO of the American Pet Products Association (APPA), announced new annual industry-wide spending figures putting overall spending in the pet industry higher than ever before with $69.51 billion spent in 2017. The latest pet industry spending figures were announced at Global Pet Expo. The 2017 pet industry spending numbers surpass the previous year's by nearly $3 billion ($66.75 billion spent in 2016), a 4 percent growth rate. APPA's annual comprehensive industry figures report covers pet spending in the market categories of food, supplies/over-the-counter (OTC) medications, veterinary care, live animal purchases and other services

PetSmart seeking other clinic owners to occupy unused veterinary space

According to *VIN News Service*, PetSmart, a national pet-store chain that fueled the growth of Banfield Pet Hospital by housing its clinics in hundreds of stores, is seeking other clinic owners to occupy unused veterinary spaces in 40 states, Puerto Rico and the Canadian province of British Columbia. Some of the vacant spaces once were inhabited by a Banfield clinic that since has closed, according to Dr. Lisa Darling, head of veterinarian services at PetSmart. In other cases, Banfield initially indicated interest in occupying the spaces but never did, she said. She provided a list showing 188 locations available. PetSmart made its quest public at the Western Veterinary Conference in Las Vegas, where it had a trade-show booth 50 paces from Petco, its biggest rival. Like PetSmart, Petco is recruiting veterinarians and support staff for clinics in its stores as part of an ambitious new plan to include veterinary services among its offerings.

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KVP

NexGard®
(afoxolaner) Chewables

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

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

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

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

Dosing Schedule:

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

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

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

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

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

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

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

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

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

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

Table 1: Dogs With Adverse Reactions.

	Treatment Group			
	Afoxolaner		Oral active control	
	N[1]	% (n=415)	N[2]	% (n=200)
Vomiting (with and without blood)	17	4.1	25	12.5
Dry/Flaky Skin	13	3.1	2	1.0
Diarrhea (with and without blood)	13	3.1	7	3.5
Lethargy	7	1.7	4	2.0
Anorexia	5	1.2	9	4.5

[1]Number of dogs in the afoxolaner treatment group with the identified abnormality.
[2]Number of dogs in the control group with the identified abnormality.

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

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

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

Effectiveness:
In a well-controlled laboratory study, NexGard began to kill fleas four hours after initial administration and demonstrated >99% effectiveness at eight hours. In a separate well-controlled laboratory study, NexGard demonstrated 100% effectiveness against adult fleas 24 hours post-infestation for 35 days, and was ≥93% effective at 12 hours post-infestation through Day 21, and on Day 35. On Day 28, NexGard was 81.1% effective 12 hours post-infestation. Dogs in both the treated and control groups that were infested with fleas on Day -1 generated flea eggs at 12- and 24-hours post-treatment (0-11 eggs and 1-17 eggs in the NexGard treated dogs, and 4-90 eggs and 0-118 eggs in the control dogs, at 12- and 24-hours, respectively). At subsequent evaluations post-infestation, fleas from dogs in the treated group were essentially unable to produce any eggs (0-1 eggs) while fleas from dogs in the control group continued to produce eggs (1-141 eggs).

In a 90-day US field study conducted in households with existing flea infestations of varying severity, the effectiveness of NexGard against fleas on the Day 30, 60 and 90 visits compared with baseline was 98.0%, 99.7%, and 99.9%, respectively.

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

In well-controlled laboratory studies, NexGard demonstrated >97% effectiveness against *Dermacentor variabilis,* >94% effectiveness against *Ixodes scapularis,* and >93% effectiveness against *Rhipicephalus sanguineus,* 48 hours post-infestation for 30 days. At 72 hours post-infestation, NexGard demonstrated >97% effectiveness against *Amblyomma americanum* for 30 days.

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

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

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

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

NADA 141-406, Approved by FDA

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