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every three years, the American Heartworm Society (AHS) releases new data on the incidence of the parasite’s dreaded disease in pets. And right now is when the organization is asking for your help to get the best sample size to analyze.

Veterinarians now have the opportunity to submit their clinics’ data for the 2019 AHS Heartworm Incidence Survey. Options include filling out a printed survey that was mailed to veterinarians in late January (the completed survey can be scanned and emailed to the AHS) or simply completing the survey at heartwormsociety.org/2019survey. The deadline to submit survey data is Feb. 29, 2020.

The AHS maps, dating back to 2001, are generated every three years and used by veterinarians, animal shelters, animal rescue organizations and media to educate the pet-owning public about the threat of heartworm disease. The maps, which are built using data submitted by thousands of veterinary practices and animal shelters, also provide vital insights for veterinary professionals about trends in heartworm incidence and the spread of heartworms into new areas of the country.

“Each veterinary practice that submits data on the number of animals tested and diagnosed over the 2019 calendar year enables the AHS to create a more comprehensive and useful map,” says AHS president Chris Duke, DVM, in a release. “We urge every clinic and shelter—large or small—to take a few short minutes to submit their information.”

The survey results and the new 2019 AHS map will be made available in April as a part of Heartworm Awareness Month. ●
IMPORTANT SAFETY INFORMATION: NexGard is for use in dogs only. The most frequently reported adverse reactions include vomiting, pruritus, lethargy, diarrhea 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 or neurologic disorders. For more information, see the full prescribing information or visit www.NexGardClinic.com.

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Powerful protection can also be gentle:

✓ Safe for puppies as young as 8 weeks of age weighing 4 lbs or more
✓ Over 140 million doses of afoxolaner have been prescribed¹
✓ And it’s the only flea and tick control product indicated for the prevention of *Borrelia burgdorferi* infections as a direct result of killing *Ixodes scapularis* vector ticks

¹Data on file.
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-[3-chloro-5-(trifluoromethyl)-phenyl]-4, 5-dihydro-6-trifluoromethyl-3-isoxazolyl)-N-(2-oxo-2-[2,2,2-trifluoroethyl]aminomethyl) (Ctenocephalides felis) and (Ixodes scapularis), 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. NexGard is indicated for the prevention of Borrelia burgdorferi infections as a direct result of killing (oder scapularis) vector ticks.

Table 1: Dogs With Adverse Reactions.

<table>
<thead>
<tr>
<th>Body Weight</th>
<th>Afoxolaner Per Chewable (mg)</th>
<th>Chewables Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0 to 10.0 lbs.</td>
<td>11.3</td>
<td>One</td>
</tr>
<tr>
<td>10.1 to 24.0 lbs.</td>
<td>28.3</td>
<td>One</td>
</tr>
<tr>
<td>24.1 to 60.0 lbs.</td>
<td>68</td>
<td>One</td>
</tr>
<tr>
<td>60.1 to 121.0 lbs.</td>
<td>136</td>
<td>One</td>
</tr>
<tr>
<td>Over 121.0 lbs.</td>
<td>Administer the appropriate combination of chewables</td>
<td></td>
</tr>
</tbody>
</table>

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 the entire dose is consumed. If any of the dose is vomited or not consumed within two hours of administration, additional full doses should be administered. If a dose is missed, administer NexGard and resume a monthly dosing schedule.

Flea Treatment and Prevention: Treatment with NexGard may be at any time of the year. In areas where fleas are common year-round, monthly treatment with NexGard should continue throughout the entire year without interruption. To minimize the likelihood of flea infestations, 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: Afoxolaner is a member of the isoxazoline class. This class has been associated with neurologic adverse reactions including tremors, ataxia, and seizures. Seizures have been reported in dogs receiving isoxazoline class drugs, even in dogs without a history of seizures. Use with caution in dogs with a history of seizures or neurologic disorders (see Adverse Reactions and Post-Approval Experience).

The safe use of NexGard in breeding, pregnant or lactating dogs has not been evaluated.

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.

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Afoxolaner Oral active control</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>N2</td>
</tr>
<tr>
<td>Vomiting (with and without blood)</td>
<td>17</td>
</tr>
<tr>
<td>Dry/Flaky Skin</td>
<td>13</td>
</tr>
<tr>
<td>Diarrhea (with and without blood)</td>
<td>13</td>
</tr>
<tr>
<td>Lethargy</td>
<td>7</td>
</tr>
<tr>
<td>Anorexia</td>
<td>5</td>
</tr>
</tbody>
</table>

Number of dogs in the afoxolaner treatment 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.

Post-Approval Experience (July 2018): The following adverse events are based on post-approval adverse drug experience reporting. Not all adverse events are reported to FDA/CVM. It is not possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data. The following adverse events reported for dogs are listed in decreasing order of reporting frequency for NexGard.

- Vomiting, pruritus, lethargy, diarrhea (with and without blood), anorexia, seizure, hyperactivity/restlessness, panting, erythema, ataxia, dermatitis (including rash, papules), allergic reactions (including hives, swelling), and tremors.

Contact Information: For a copy of the Safety Data Sheet (SDS) or to report suspected adverse drug events, contact Merital at 1-888-637-4251 or www.nexgardfordogs.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.

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 >98% 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 post-infestation through Day 21, and on Day 35. On Day 28, NexGard was >81% effective 12 hours post-infestation. Dogs in both the treated and control groups that were infested with fleas on Day 1 generated flea eggs 12- and 24-hours post-treatment (0-11 eggs and 1-17 eggs in the NexGard treated dogs, and 4-48 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 1, Day 20, and Day 60 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 Rhipicephalus sanguineus, 48 hours post-infestation for 36 days. At 72 hours post-infestation, NexGard demonstrated >97% effectiveness against Amblyomma americanum for 30 days. In two separate, well-controlled laboratory studies, NexGard was effective at preventing Borrelia burgdorferi infections after dogs were infested with Rhipicephalus sanguineus vector ticks 28 days post-treatment.

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 (8.3 mg/kg) for three treatments every 28 days, followed by three treatments every 14 days, for a total of six treatments. Dogs in the control group were sham-dosed. There were no clinically-relevant effects related to treatment on physical examination, body weight, food consumption, clinical pathology (hematology, clinical chemistry, or cuagulation 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 topicalis), steroids, NSAIDS, anesthetics, and anthihistamines. 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, 88 or 138 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

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This past August, I spent a week in the ICU of a local veterinary specialty hospital, holding onto Bailey, my big Labrador mix, as she fought hard after an emergency surgery and tragically lost her life. The facility and staff at this hospital were truly amazing. Because of the depth of their care, and because I’m a veteran of the veterinary space, they welcomed me to be there as much as I needed to be. Bailey definitely needed me; she crawled into my lap and tried a lot harder to live when I was there.

While I’ve spent plenty of time in and out of hospitals remodeling and designing them, I’d never seen a hospital the way I saw one during that long week. I’ve never put myself in the same space as a pet and watched and listened as much as I did. The hospital I visited with Bailey was a great one. It embodies the qualities we look for in specialty care. It’s sparkling clean, bright, airy, technologically advanced, open, friendly and professional. It’s everything. And yet, my eyes are now more open to many of the things we’re missing when we design spaces for critical care. In memory of Bailey, I’m sharing these thoughts for myself and others as we move forward continually to improve veterinary medicine. I hope it inspires you to find your own solutions that surpass all current precedents.

Do you have space to work?
Many emergency events are handled on the floor. Even if the patient physically could be moved to a table, sometimes veterinary technicians need to work with a critical situation right there in the most convenient spot. In the case of my 80-lb dog, the floor was the only logical place for staff to work with Bailey. This was eye-opening for me. We architects work so hard to make veterinary spaces efficient, so there isn’t always adequate floor space in emergency and critical care areas. I observed staff members jammed against cages helping pets, or working awkwardly in front of ICU runs, trying to be out of the way of other staff members who were working with pets on tables nearby.

Saving a life isn’t always pretty. There are two or three technicians and a doctor involved in many critical situations. There are supplies and machines and tubes everywhere. I resolve, when designing these spaces, to make it easier. There should be at least six clear feet in front of ICU cages and runs. There should be an open space on the floor to lay out a huge dog if needed. It’s just common sense that it should not be hard to do the work, and providing adequate space is the first step.

Are the floors safe?
I never felt as sad as I did when I watched my dog try to make it outside several times a day in her debilitated state to relieve herself. The floors terrified her, and she tensed and went stiff legged, which meant physically lifting her with support, step by step, until she was outside on the lawn, where she felt more secure. Staff members at this hospital help their sweet charges.
by laying yoga mats on the path to the exit, for traction. But why is it so hard to begin with?

I’ve been promoting nonslip floors for the past year in support of Fear Free design. But honestly, I really didn’t get it until I saw Bailey’s struggles. From now on, when we talk about nonslip floors, we should qualify our expectations. Is this typical nonslip flooring, which is good for lobbies and exam rooms to keep staff, clients and patients safe? Or is it appropriate for elderly and ICU patients? The latter is a different bar. Below are some thoughts about how we can achieve this higher nonslip standard in veterinary practice flooring:

- **Nonslip and psychologically reassuring.** I know we like clean and shiny things in healthcare, but pets shouldn’t be afraid to walk on the floor. Beyond being physically nonslip, flooring materials shouldn’t look too slick or shiny.

- **Nonslip and resilient.** This is flooring that’s “squishy,” to use a nontechnical term. For example, rubber floors can be resilient, as can some specialized poured resin floors. (The new padded vinyl floors on the market aren’t ready yet for veterinary hospitals, in my opinion, as they tend to dent easily under the load of carts.)

- **Nonslip when wet.** Spills and messes are cleaned up constantly in a hospital, and flooring may not be fully dry. It needs to be safe in that state.

My choice: rubber. It’s naturally antimicrobial and resilient, and it has the same coefficient of friction wet as dry. It’s also nonshiny. The key is to select a product that has a sealed surface (as opposed to a gymnasium floor) so it’s cleanable.

### How big is housing?

I got to know Bailey’s run well. And I have to say, while it looked like something I would have designed for other veterinarians, it didn’t work well. It wasn’t wide enough, and it was too deep. ICU runs for larger dogs need to be at least five feet wide. And deep runs provide no benefit—the pet gets way in the back, all tangled in its lines and bedding, and staff members must crawl around to sort things out. Instead, ICU runs should be wide and shallow. This allows for better ergonomics, better function, better safety, better visibility and better access. If a client visits a sick pet that can’t be moved, a wider run also lets them stay out of the way while staff can work efficiently and do what they need to do.

For cats and smaller dogs, we’ve traditionally explained that smaller cages that restrict movement are better. Pets with too much space can crash around a cage, tangling themselves in fluid lines and the like. Sometimes movement restriction is critical, such as after neurological surgery. But other times, a narrow cage is a hassle, just like a narrow run. Staff members may need more horizontal space to lay out an animal, organize catheters and tend to a patient without having to make too many adjustments. After observing these different situations, I concluded that having a variety of cage widths in an ICU is important to allow technicians to make thoughtful choices about how to set up a cage properly for each individual pet.

### Can you cut some cords?

One example of creating a barrier-free environment is to include enough power outlets and put them in the right locations. More easily said than done, I know, but properly placed outlets mean fewer cords dangling and draping across the floors.

### Are there too many barriers?

One annoying feature of many dog runs is a stabilizing bar that runs along the floor at the bottom of the door. I spent a week bruising my knees on the bar at the front of Bailey’s run. Most manufacturers can remove this bar and stabilize the run in other ways. Look around your space during the design or remodeling process and carefully review the material orders to ensure there aren’t small barriers that will frustrate people once equipment is rolling and sick pets are being moved around.

Pay special attention to doors. Consider installing handicapped push-button door openers at exterior doors to ease moving patients to the outside. If you do this, ensure there are two sets of doors between the ICU and the outside and that each one opens with a glass enclosure could help “singing” patients stay quieter and calmer. Also note the ample floor space in the treatment area.
separate push button. This will keep patients safe and prevent the possibility of escape.

**Can you see?**
A hospital’s job is to save a pet’s life, and for this reason, barriers to visibility increase the risk of unfavorable outcomes. That said, pets that are in the ICU for days on end suffer from the stress of being out in the open. Cats are especially bothered when they’re in view of other animals.

Could we try something from human medicine? Triage curtains shield a hospitalized patient and provide a sense of privacy. Imagine a pet resting comfortably, with monitoring equipment set outside the run (where it can be glanced at every few seconds). The curtain could be pulled for short periods for any number of reasons, such as to allow the pet some rest, when a client is visiting or when an emergency is unfolding to prevent other pets from being frightened by the frenetic energy. We could experiment in ways that don’t compromise safety but create greater comfort for the pet.

I recently worked with a company to design a curtain that has a solid barrier at the bottom—where the pet is lying—and a mesh top. This way, the animal can be monitored properly but still shielded from chaos at floor level. These curtains are manufactured from antimicrobial fabric, and they can be unsnapped and thrown in the washing machine.

**Can patients sleep?**
This may not be important for a six-hour emergency room visit, but maintaining some normal biological rhythms is important for pets that stay for days, just as it is for the veterinary team members who work in these spaces. Studies in human medicine show that maintaining circadian rhythms is important for patients in hospitals. As I reflect on the hospital I visited day after day and night after night, which was forever lit like a “clean room,” I wonder if we should take circadian rhythms more seriously.

Can the ICU accommodate a window or skylight to the outdoors? If not, could a skylight be installed? This will make morning feel like morning and night feel like night. What about dimmable lighting over each patient run and section of housing? This sounds fancy, but it’s easy to do with modern LEDs. Bailey needed to rest when she could rest, but it was hard for her to do so when lying under bright lights. Individual lights could be dimmed when a patient is stable and resting, to allow for restorative sleep.

**Can you keep quiet?**
Visual considerations are only the tip of the iceberg for your patients, who have more sensitive hearing and superior olfactory abilities. While it would be nice to create a better olfactory experience, that’s likely a matter of typical best practices for cleanable surfaces and good ventilation. As for the auditory experience, we have a long way to go.

With all the clattering, beeping, alarm ringing and talking, hospitals can be obnoxious and exhausting. It’s even more exhausting to hear a delirious, frightened or sedated animal bark or whine. Consider:
- **Quiet casters on chairs.** Cheap and easy.
- **Quiet latches on cages.** Easy to order and install.
- **Sound-dampened cages.** Standard with some manufacturers, but older caging may lack it.
- **Sound monitors.** Devices like Yacker Tracker can help staff be more aware of noise.

**Noise-absorbing materials.** Ceiling tiles with a .90 noise reduction coefficient absorb 90% of reverberent sounds within the tested range. Sound panels can be added to the upper portions of walls. Rubber flooring can dampen sounds by another 12 decibels.

**Glass-enclosed, low-stimulation enclosures.** While you may not want to house all pets behind glass because they’re too hard to access, the husky who’s your “singer” might do better behind a glass front where she (and you) will be less disturbed. If she’s still safe and easy to see, the accommodation could be good for everyone.

**This isn’t it!**
As I compiled this list of ideas, it was hard to stop. I thought about other topics that could be explored in accommodating pet families in more sensible and less distracting ways. In the end, I accepted that this brainstorm is only a start and that it has a long way to go. A deeply sad experience is what it took for me to start thinking more clearly. Veterinary professionals, you know the challenges of the space better and more deeply than I do. Use your knowledge as well as your emotional highs and lows to reflect on the spaces you work in every day. Don’t accept the status quo. Find a way to make the work kinder for you and for the pets and pet families in your care.

I hope that I can grow from my last days with Bailey to become a better architect. She has already made me a better person.

Ms. Lewis is a partner at Animal Arts, an architecture firm in Boulder, Colorado and frequent HospitalDesign360 Conference speaker. She’s a lighting geek and a (seriously) devoted advocate of minimizing pets’ stress and anxiety during their veterinary visits.
The microbiota in GI disease

Here’s a look at what contributes to a healthy gut—and what can happen when the gut bacteria run amok.

By Ashley Bohn, PhD, MS, RVT

The term microbiota encompasses all microbial organisms within and on a host organism, including bacteria, viruses, protozoa and fungi. Most research on the microbiota is focused on bacterial species within the gut and on other mucosal surfaces, such as the vaginal and respiratory tracts. Another common term, microbiome, describes the combined genetics of organisms within the microbiota.

Distinguishing these terms is important because the microbiome is thought to influence how host organisms interact with the microbiota across mucosal surfaces. It’s been shown that genetic and environmental factors, such as high-fat diets, food additives and stress, can impact bacterial populations within the gut. Additionally, some species of bacteria are associated with increased inflammation and gastrointestinal (GI) signs.

Maintaining a healthy microbiota and mucosal homeostasis is essential to mucosal immunity and a healthy gut. Microbiota in health and disease The quantity and variety of organisms within the GI tract differ throughout the gut and over the course of an animal’s life. Infants are colonized by the mother’s microbiota during vaginal delivery and continue to acquire new commensal species throughout the course of their lives. It’s known that babies born via cesarean section have higher incidences of childhood immune-mediated diseases and have different bacterial species in their GI tract early in life compared with babies born vaginally. Additionally, bacteria isolated from infants born by C-section are often associated with increased inflammation in the gut. The quantity of microbes also varies throughout the GI tract, with the fewest being in the upper GI tract. It’s estimated that 101 organisms per...
gram reside in the stomach and consist mostly of Lactobacillus, Helicobacter, and Veillonella species.1 Bacterial numbers from the duodenum to the ileum range from 103 to 107 cells/g and consist of bacilli, Corynebacteriaceae, Actinobacteria, Actinomycinaeae and Streptococcaceae. Finally, the colon contains the largest volume of organisms (1,012 cells/g) and is home to a variety of species, including Bacteroidetes and Lachnospiraceae. These bacteria both aid in digestion and compete with pathogenic species at bay.1

The mucosa of the GI tract is essential to the overall health of humans and companion animals alike.3 The mucus layer and ciliated epithelial cells aid in trapping potential invading pathogens and moving them through the GI tract. Layers of epithelial cells prevent infiltration of pathogens, and resident immune cells, such as macrophages and dendritic cells, survey the region for pathogens and mount a response if danger is detected. Secreted enzymes, acids and antimicrobial peptides, as well as peristaltic movements, are also part of the innate defenses in this region of the body. The intestinal mucosa serves as a barrier to infection; however, in some circumstances, dysbiosis of the microbiota, genetic abnormalities and environmental factors can contribute to breakdown of the mucosal barrier, leading to unwanted inflammation and symptomatic GI disease.1,4

**Infection, dysbiosis and unmet needs in gut microbiota**

In veterinary medicine, a large percentage of nonpreventive visits are attributed to some kind of GI upset, such as an infection, adverse food reaction or allergy, immune-mediated condition, cancer or toxicity.1 These conditions disrupt the homeostatic environment in the gut needed for good health. It’s known that the microbiota is dynamic throughout the course of an animal’s life, and infection and inflammatory conditions alter it.

Infection should always be one of the first rule-outs when a patient presents with GI upset. As a result, antimicrobials are used widely in veterinary medicine. Shelter environments, poor breeding practices and husbandry, and the use of raw food diets, to name a few, warrant the use of these types of medications in many cases; however, the full impact of infection and the use of antimicrobials in young patients remains unclear. Global overuse has resulted in resistance to many commonly used and widely available antibiotics. It’s unclear how antibiotic use affects the microbiome later in life. Military personnel who acquired infectious diarrhea while deployed overseas have been followed for decades after their military service. Through these studies, we’ve learned that these individuals have an increased prevalence of GI disease throughout their lives.3,4 It’s thought that disruption in the microbiota and the mucosal barrier likely contributed to the inflammatory conditions these individuals experienced later in life.5,6

Chronic inflammation, regardless of the cause, alters the microbiota and in some cases causes chronic breakdown of the mucosal barrier.3 This chronic inflammation and loss of homeostasis can be debilitating for our patients and their owners. Immune suppressors are often used in combination with other therapies, such as a change in diet and the addition of probiotics, to control these chronic conditions. Endoscopic biopsies can be a valuable diagnostic aid in many of these patients. Nutritional deficiencies as a result of chronic inflammatory conditions should also be addressed.

**Looking to the future of microbiota and GI disease**

As noted earlier, the causes of GI disease vary, but disruption of the homeostatic environment within the GI tract can have lasting effects.3 Additional research is needed to fully understand how antimicrobials impact gut health over time, and additional diagnostic tools and treatment options are needed in veterinary medicine.

The use of biologics and immune modulators in human medicine to treat inflammatory bowel disease and similar conditions is becoming widespread in many countries. The use of these medications is associated with mucosal healing and, in many cases, drastic improvement of GI symptoms. Many of these therapies lack regulatory approval and are cost-prohibitive in veterinary medicine at this time; however, the potential for their use once generic or veterinary formulations become available may offer additional options for patients with severe and difficult-to-manage GI disease.

As with many animal ailments, human medicine is pioneering treatments that may be used in veterinary patients in the future. Luckily, human physicians and pharmaceutical companies are making great strides in effectively treating chronic inflammatory conditions of the gut. It’s possible that minimally invasive commercial assays will become available to help diagnose inflammatory conditions by measuring proinflammatory cytokine levels in fecal samples.3 The use of biologics in veterinary medicine may be in the distant future, but these therapies may also offer hope to owners with animals suffering from these chronic conditions.>>
The microbiota, accompanying microbiome and interactions with the mucosal barrier in the intestines should be considered when diagnosing and treating patients with GI conditions. Many questions concerning the role of the microbiota in health and disease in both human and veterinary medicine remain unanswered, and research is ongoing. Therapies to treat patients with chronic inflammatory conditions of the GI tract are emerging each year.8-10 Veterinary medicine will likely be able to utilize what is learned from these studies and apply new therapies once they become available in veterinary formulations. ●

References

Dr. Bohn received her PhD and MS from Georgia State University and was a practicing veterinary nurse for nearly 20 years. She provides freelance medical writing services through her business, Bohn Communications.

Selarid™
(selamectin)
Topical Parasiticide For Dogs and Cats

BRIEF SUMMARY: See Package Insert for full Prescribing Information

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

INDICATIONS: Selarid is recommended for use in dogs six weeks of age and older and cats eight weeks of age and older for the following parasites and indications:

Dogs: selamectin kills adult fleas and prevents flea eggs from hatching for one month and is indicated for the prevention and control of flea infestations (Ctenocephalides felis), prevention of heartworm disease caused by Dirofilaria immitis, and the treatment and control of ear mite (Otodectes cynotis) infestations. Selarid also is indicated for the treatment and control of sarcoptic mange (Sarcoptes scabiei) and for the control of tick infestations due to Dermacentor variabilis.

Cats: selamectin kills adult fleas and prevents flea eggs from hatching for one month and is indicated for the prevention and control of flea infestations (Ctenocephalides felis), prevention of heartworm disease caused by Dirofilaria immitis, and the treatment and control of ear mite (Otodectes cynotis) infestations. Selarid also is indicated for the treatment and control of roundworm (Toxascaris cati) and intestinal hookworm (Ancylostoma tubiforme) infections in cats.


In humans, Selarid may be irritating to skin and eyes. Reactions such as hives, itching and skin redness have been reported in humans in rare instances. Individuals with known hypersensitivity to Selarid should use the product with caution or consult a health care professional. Selarid contains isopropyl alcohol and the preservative butylated hydroxytoluene (BHT). Wash hands after use and wash off any product in contact with the skin immediately with soap and water. If contact with eyes occurs, then flush eyes copiously with water. In case of ingestion by a human, contact a physician immediately. The safety data sheet (SDS) provides more detailed occupational safety information. For a copy of the SDS or to report adverse reactions attributable to exposure to this product, call 1-866-591-5777.

Flammable – Keep away from heat, sparks, open flames or other sources of ignition. Do not use in sick, debilitated or overweight animals (see SAFETY).

PRECAUTIONS:
Prior to administration of Selarid, dogs should be tested for existing heartworm infestations. At the discretion of the veterinarian, infested dogs should be treated to remove adult heartworms. Selarid is not effective against adult D. immitis and, while the number of circulating microfilariae may decrease following treatment, Selarid is not effective for microfilariae clearance.

Hypersensitivity reactions have not been observed in dogs with patent heartworm infections administered three times the recommended dose of selamectin solution. Higher doses were not tested.

ADVERSE REACTIONS:
Pre-approval clinical trials:
In well-controlled clinical studies, selamectin was dosed orally at 1, 3, 5, and 10 times the recommended dose to patent heartworm infected cats, and no adverse reactions were observed. The safety of selamectin solution administered orally also was tested in case of accidental oral ingestion. Oral administration of the recommended topical dose of selamectin solution to cats caused salivation and intermittent vomiting. Selamectin solution also was administered at 4 times the recommended dose to patent heartworm infected cats; no adverse reactions were observed.

In well-controlled clinical studies, selamectin solution was used safely in animals receiving other frequently used veterinary products such as vaccines, anthelmintics, antiparasitics, antibiotics, steroids, collar, shampoos and dips.

STORAGE CONDITIONS: Store below 80°F (30°C).

HOW SUPPLIED: Available in seven separate dose strengths for dogs and cats of different weights (see DOSAGE). Selarid for puppies and kittens is available in cartons containing 5 single dose applicators.

Selarid for cats and dogs is available in cartons containing 6 single dose applicators. Approved by FDA under ANDA # 200-663

Manufactured by: Norbrook Laboratories Limited Nevery, BT35 6PU, Co. Down, Northern Ireland

Revised Dec 2019

Revised Dec 2019

The microbiota, accompanying microbiome and interactions with the mucosal barrier in the intestines should be considered when diagnosing and treating patients with GI conditions. Many questions concerning the role of the microbiota in health and disease in both human and veterinary medicine remain unanswered, and research is ongoing. Therapies to treat patients with chronic inflammatory conditions of the GI tract are emerging each year.8-10 Veterinary medicine will likely be able to utilize what is learned from these studies and apply new therapies once they become available in veterinary formulations. ●

References

Dr. Bohn received her PhD and MS from Georgia State University and was a practicing veterinary nurse for nearly 20 years. She provides freelance medical writing services through her business, Bohn Communications.
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Shelter Snapshot:
Evidence-based answers to your dermatophytosis questions

One patchy kitten with ringworm can send a shelter’s veterinary team into a panic. Before you start scrambling, review the research so you can manage this pesky dermatologic problem effectively.

By Lena DeTar, DVM, DACVPM, DABVP

As a practicing shelter veterinarian, I get a jolt of panic when I see that bright green glow under the Wood’s lamp on my intake exam of a patchy kitten.

So many questions need immediate answers: Do we have any other kittens from this litter (or hoarding house or transport vehicle)? Where have they been in our shelter? What about before that? Is there room in isolation? Do we have dip and antifungals in stock? Is further testing needed? Who’s willing to socialize this little one (and its friends) for the next several weeks? Is (informed, experienced) fostering possible? What concentration of disinfectant have we been using—and which one? What about laundry? When is it safe to spay/neuter and send this happy, bright, fluffy thing home?

A significant body of literature investigating dermatophytosis (ringworm) risk factors, diagnosis, treatment, testing for cure and follow-up has been published over the past 15 years, giving us evidence-based answers to many of the management questions asked by shelters over the years. Here’s a closer look.

Who gets dermatophytosis?
Many studies cite an increased risk in cats less than a year old, and a recent study found that kittens under 6 months old had an eight times greater risk.1-3 Warm seasons and climates increase incidence, but seasonal intake of kittens may confound this observation.3,4 A history of living in catteries, shelters or outdoors has also been implicated.4,5

In one shelter, transport cats were twice as likely as owner surrenders to present with dermatophytosis.3 Elsewhere, hoarding and cruelty cases make up the majority of dermatophyte-infected shelter intakes. Hoarded cats are also less likely to follow the risk patterns (age, season, climate) just mentioned.6

What kind?
Microsporum canis is far more common than any other dermatophyte species, responsible for more than 90% of all infections.3,7 Microsporum gypseum and especially Trichophyton species seem to be more common in the West, harder to spread and easier to cure.8

What’s up with Wood’s lamps?
The importance of using a Wood’s lamp at shelter intake and whenever skin lesions are noted cannot be overstated. Sensitivity is much higher than many think; the World Association for Veterinary Dermatology undertook a massive rereading of the literature in 2017 and calculated an overall sensitivity exceeding 72% for M. canis.
experimentally infected animals, sensitivity was 100%. Furthermore, even though not all kittens in a litter may fluoresce at the time of exam, a recent study found that 80% of the time, all kittens in that litter were infected.3

**How do I confirm infection?**
The following methods have advantages and disadvantages.

**Trichogram.** Microscopic examination of the hair is the only definitively diagnostic technique for *M. canis*, according to dermatologists, because it actually demonstrates the presence of infective spores within the hair of the cat.4 No further confirmation is needed. However, trichography does not identify fungal species and is not sensitive or specific in asymptomatic cats.

**Polymerase chain reaction (PCR).** PCR confirms the presence of dermatophyte spores but, because of its unparalleled sensitivity, uninfected fomite carriers also show positive results.9 This test has an excellent turnaround time of two to three days,10 and it’s especially useful for ruling out infection in cats that are probably negative but have potential for infection. When negative results are confirmed, these healthy cats can be moved swiftly through the sheltering system.

**Culture.** In-house dermatophyte test medium (DTM) culture has been the inexpensive mainstay for ringworm diagnosis confirmation for many years. In 2006, researchers described a system for using culture (along with physical exam and Wood’s lamp) to determine whether cats were fomite carriers or truly infected.11 Under this system, cats with fewer than 10 fungal colonies per culture and no visible signs at re-examination are considered carriers. Others have used stricter criteria (such as fewer than four colonies per culture).3 This system has been used by shelters across North America for many years with consistently good results.
Once inoculated, fungal cultures grow fastest in a darkened incubator (or cabinet) at 75°F to 85°F (25°C-30°C) and at least 30% humidity. Daily monitoring for color or growth and identification of fungal species is always recommended, but waiting 14 to 21 days when no growth is seen is unnecessarily long. In a 2006 study of more than 4,000 cultures, all were positive by day 10 of inoculation (median, days 5 to 7); a 2019 study involving 291 cultures identified all infected cats by day 7 (median, day 5). For shelters with reliable culturing technique and consistent incubation, negative cats can be moved through after seven to 10 days.

How can I tell when the cat is cured?
False-positive PCR tests from dead spores and the high expense of serial testing mean that weekly fungal culture is the preferred instrument for confirmation of cure. Shelters are encouraged to hold in-treatment DTM for 14 days and to begin weekly testing after seven days of treatment, because in many cases this is the first negative culture. Furthermore, when cats are treated with appropriate oral antifungals daily and 8 oz/gal lime sulfur baths twice weekly, that first negative fungal culture in an otherwise healthy cat likely indicates successful cure.

How do I treat ringworm in the shelter?
While speed might not be the top priority in a permanent or foster home setting, the length of time a kitten spends in “ringworm isolation” directly affects its welfare and the shelter’s ability to serve more animals. Isolating and starting treatment whenever a cat (or its litter) is Wood’s-lamp-positive or lesions are characteristic is strongly recommended. Experts advise simultaneous administration of the following treatments:

- **Oral antifungals.** The fastest protocols to cure dermatophytosis from any fungal species include generic terbinafine at 30 to 40 mg/kg daily or commercially prepared itraconazole at 5 to 10 mg/kg daily. Both oral medications provide statistically similar efficacy and time to cure; both accumulate in fat and likely continue to have residual effects up to a week after stopping treatment.
- **Topical antifungals.** Using lime sulfur at 8 oz/gallon (twice the bottle recommendation) has been shown consistently to decrease time to cure for cats with any species of dermatophytosis when paired with oral antifungals. Fomite cats also benefit from bathing to eliminate spore carriage. Miconazole/chlorhexidine (0.2%/0.2%) shampoo has also been shown to be effective against *M. canis*, but it takes twice as long to achieve cure. Accelerated hydrogen peroxide shampoos have not been tested adequately to date; daily bathing may be necessary to achieve a similar effect.
- **Welfare provisions.** Social cats require human contact, especially during early life. Primary enclosures should be appropriate for long-term housing (we don’t want to treat dermatophytosis only to cause herpes recrudescence). Double-compartment housing and daily enrichment in isolation are musts. If a shelter can’t perform these treatments or house the cat in a manner that provides good welfare, cats should be sent to foster care, returned to the field to cure on their own, transported to a shelter that can provide good welfare or euthanized.

How do I decontaminate the shelter?
The most important part of decontamination is the aggressive removal of contaminated hair and dander. Once the facility is disinfected after use. Thoroughly drying laundry on the hottest setting will kill any remaining spores.

What about ringworm kittens in foster homes?
A foster home is a great place for a ringworm kitten socially, and it reduces the burden of treatment on shelter staff. However, the foster family must be informed of the zoonotic potential and prepared for medication administration, bathing and rechecks. Although foster programs also have a capacity affected by length of stay, better compliance in foster care may be achieved by using liquid formulations of oral medication and miconazole-chlorhexidine shampoo. Foster homes can be decontaminated safely using aggressive removal of hair and routine household cleansers labeled as effective against *Trichophyton* species.

When infected kittens leave a foster home, sweeping pads may be used to culture the foster’s kitten area to ensure future litters have a clean, safe environment.

Take-home message
Although most of these studies were performed in shelters, their application to owned cats diagnosed with dermatophytosis is
infection and fomite carriage

References

1. Cafarchia C, Romito D, Sasanelli M, et al. The epidemiology of canine and feline dermatophyto-
toses in southern Italy. Mycoses 2004;47:508-513.

Dr. DeTar is an assistant clinical professor with the Department of Population Medicine and Diagnostic Sciences and the Maddie’s Shelter Medicine Program at Cornell University College of Veterinary Medicine.
“Marketing” is a word that is used to give veterinarians a good case of the hives. Old-schoolers still worry that they’ve crossed an ethical line by creating an intentional strategy for boosting sales and services that’s beyond “good old word-of-mouth.” Regardless, more and more practitioners are recognizing that this is a competitive advantage that shouldn’t be overlooked.

Just saying, “We’re here” is no longer enough. You need to employ both internal and external marketing. Here are the differences and why you need both.

**Internal marketing**

Internal marketing refers to how you market your services to your own team and prepare them to carry that message on to clients. To start, you need to articulate the medical culture of your practice. Do you have a special focus? Are you aiming for affordable services that are accessible to everyone? Are you setting the bar for only the highest level of services and the clients who are committed to them?

All of these things need to be determined before you can begin any marketing strategy. Once some of those questions are answered, you can start drilling down to what that culture means in terms of specific approaches to care, and ultimately some very specific product and service choices. Some examples are:

- Will you recommend annual vaccinations or favor an extended vaccine protocol?
- What will your core vaccine recommendations be?
- Will you require a heartworm test annually or just at the initiation of continuous treatment?
- Will you require an intravenous catheter and fluids with every anesthetic procedure?
- Will you require full-mouth radiographs with every dental procedure?
- Will you declaw cats?
- Will you have a policy that guides the age that you spay or neuter, and will you proceed if the pet is pregnant?
- What flea, tick and heartworm preventives will you recommend?

This list could go on for miles, but these things must be decided by someone—or some group of people—and used for the foundation on which your practice will be built. >>

**Find marketing distasteful? Get over it with this simple approach**

Contrary to old-school belief, word-of-mouth is not enough to market your veterinary practice. Put together a simple plan to get your team on the same page and give clients the information they want.

*By Kyle Palmer, CVT*
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WARNINGS:
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Not for human use. Keep this and all drugs out of the reach of children. Consult a physician in case of accidental human exposure.

PRECAUTIONS:
Any dog presenting with severe hypovolemia, dehydration, pre-renal azotemia and inadequate tissue perfusion (“Addisonian crisis”) must be rehydrated with intravenous fluid (saline) therapy before starting treatment with ZYCORTAL Suspension. The effectiveness of ZYCORTAL Suspension may be reduced if potassium-sparing diuretics, such as spironolactone, are administered concurrently.

ADVERSE REACTIONS:
The field safety analysis included evaluation of 116 dogs. The most common adverse reactions reported are polyuria, polydipsia, depression/lethargy, inappropriate urination, alopecia, decreased appetite/anorexia, panting, vomiting, diarrhea, shaking/trembling, polyphagia, urinary tract infection, urinary tract incontinence and restlessness. Reports of anaphylaxis and anemia have been associated with a different desoxycorticosterone pivalate injectable suspension product.

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Dechra Veterinary Products
Once you have those first few bricks laid, it’s time to sell the message to your team. The great news is that you won’t have to do this alone. Nearly every manufacturer or distributor in our industry is chomping at the bit to come in and buy your team lunch, solely for the opportunity to speak to you about their products and services. Take them up on it, and do it often!

Provide your team with specific strategies for increasing their ability to educate (market to) your clients. Create Q&A sheets, FAQ sheets and scripts your team can use, and train through role-playing. Remember, the quickest way to torpedo your clients’ confidence is to have team members on different pages on an issue or, worse, on no page at all.

**External marketing**

Once you have internal marketing down, it’s time to move on to external marketing. This is strategic client-focused outreach, and it may be where some of you start to get queasy. You may be wary of the “hard sell” or appearing to be too pushy, but you need to remember two things:

1. **Clients really, really want to understand their options and know what you recommend.**
2. **If you aren’t providing No. 1, someone else is—a competitor, the internet, staff at a feed store, their neighbor … you name it. If you want clients to have the information needed to make an informed decision, it has to come from you.**

The great news is that you won’t have to do this alone either (or at least all of it). The same industry partners who are more than willing to parade in front of your team members with lunch and an educational presentation will provide many of the physical marketing materials you need.

Next, it’s time to put together a plan to reach your clients. First, your plan must include vaccine and wellness reminders (either mailed or emailed) and actual callbacks from your team (or you) related to specific case management. Clients should receive reminders using a three-tier system—send a reminder a month before the vaccine is due, send a reminder once the vaccine is overdue, and send one more a month after the vaccine is due. Studies have shown that this is the best method of creating compliance with your vaccines.

Now that we’ve identified what you must do, let’s talk about what else you can do. I personally am a huge believer in Facebook, but much of the same value can be found in Twitter, Instagram and, to a lesser extent, NextDoor. These platforms allow something your website can’t: interaction and engagement. Yes, your website is vital and, yes, it must be up to date with detailed information and some great visual elements. But your website isn’t you. A website is the brain of a business, but in this day and age, social media is the heart.

I would absolutely use social media for announcing your new initiative for pet wellness, a program focusing on heartworm prevention or even a special on some product or service. That said, if those types of posts occupy more than 20% of your total posts, it’s time to change things up. Clients value the information contained in that 20%, but it’s not why they came. Clients visit your social media page because it makes them feel like they’re part of your hospital. They want to get to know you via this platform, and they want it to be a window into the hospital.

To use social media—which is arguably the greatest business marketing tool ever invented—simply follow these guidelines:

- **Educational posts:** no more than 20% of your total posts
- **Non-educational posts:** no more than 80% of your total posts

Additionally, to fully leverage the external-marketing brilliance of social media, share pictures of your team doing difficult things. Share pictures of your doctors in surgery. Share pictures of your technician doing a tough nail trim. When a patient comes in, ask the owner for permission to use their images on social media, then do it. Pick a pet of the day. Focus on a difficult situation in the practice then build your week talking about it. Be sure to share updates on patients that were subjects of previous posts.

In short, open the doors of your hospital to your clients via social media, and you won’t have to advertise anywhere else (if you still have Yellow Page ads, kill them now). Use that external marketing portal to increase your practice’s client roster by leaps and bounds.

There are other forms of marketing, but there’s really nothing like these strategies both to introduce you to the community and to continue that relationship. If you’re not doing them deliberately, it’s time to create some internal strategies to shape your culture in the practice and external strategies to share that culture with your clients. You’ll be surprised how often they engage with you—and share you with others.

**Longtime dvm360 magazine and Firstline contributor Kyle Palmer, CVT, is hospital manager for VCA Salem in Salem, Oregon, as well as a practice management consultant for a number of other hospitals.**
There’s a lot of confusion about CBD use in pets – plenty of anecdotes, hundreds of products, but very little data. Canopy Animal Health is working hard to change that by replacing confusion with facts. We’re using a multimillion-dollar R&D budget to conduct rigorous safety and efficacy studies and support investigations by leading university researchers. To date, more than 20 studies have been completed or are underway. Eventually we will launch products, but not until we know more about how CBD may improve the lives of animals and how it may affect them in the short- and long-term. Meanwhile, we offer this brief primer to help foster good communication and to keep the conversation going.

Today, there is enormous interest in exploring the potential of CBD in veterinary medicine. However, while the pace of research is accelerating, it is still in its early stages. Even so, the scarcity of safety and efficacy data hasn’t stopped countless pet owners from giving widely available CBD chews and oils to their cats and dogs. Others who have not yet used CBD products turn to their veterinarians for guidance.

Are CBD products safe for pets?
Safety is a primary concern for pet owners and veterinarians. Margins of safety for CBD for pets have not yet been determined – a particular concern for chronic dosing. Canopy Animal Health is currently conducting escalating dose studies to evaluate the short- and long-term use of CBD in pets and will publish the data when available.

Is it legal?
Laws vary state to state, so please check with your local Veterinary Medical Association before dispensing CBD or discussing its use with your clients. Even in states where recreational use of marijuana is approved, veterinary use of CBD may be prohibited and discussions between veterinarians and their clients about CBD may not be allowed. However, laws regarding CBD are evolving. Please consult the Canopy Animal Health website regularly for updates.

What is the quality of current products on the market?
Quality assurance standards for CBD have not yet been set. Some CBD products being offered may be contaminated. The biological nature of the Cannabis sativa plant makes products susceptible to pesticide and heavy metal contamination, as well as inconsistent formulation. Some CBD products on the market do not contain the levels of CBD claimed on the package. In fact, some products made from hemp seeds don’t contain any CBD at all. Clear regulations are needed to guarantee safe, pure and accurately labeled products.

What’s the difference between marijuana and hemp?
Many pet owners don’t understand the difference between marijuana and hemp, especially because both are classified as Cannabis sativa. The distinction is legal. Hemp contains less than 0.3% tetrahydrocannabinol (THC) – the psychoactive component of the Cannabis sativa plant.

Many veterinarians have seen THC toxicosis and how dogs respond much differently to exposure than humans. One reason for their greater sensitivity may be that dogs have a higher number of CB1 receptors, which mediate the effects of THC. CBD contains so little THC that exposure is not an issue. Researchers are still establishing appropriate CBD dosing for both dogs and cats.

What are the indications for CBD?
There are no approved CBD drugs for animals and no efficacy claims can currently be made for their use. Current and planned studies are investigating the effects of CBD on osteoarthritis pain, appetite stimulation, seizure disorders and other conditions. Publication of these studies may eventually provide valuable insight into the safety and efficacy of the compound.

More information
The Canopy Animal Health website offers additional helpful information for veterinarians and veterinary technicians: https://www.canopyanimalhealth.com/en

A RACE-approved continuing education course is also available on Canopy’s website: https://connect.canopyanimalhealth.com/ce/primer-for-cannabis-and-pets/
There’s no denying that social media is an invaluable marketing tool for veterinary practices. In fact, most would argue that it’s vital for success today. But anyone with a Facebook page or a Twitter account knows that reaching peak popularity is not as simple as sharing a photo or adding a hashtag. So, how can you run a successful practice while managing winning social media pages?

We got answers from six veterinary social media mavens who’ve proven they have the know-how to navigate the intricacies of social media and create content that sparks engagement.

**Which social media platform should veterinary practices be using?**

**Ernie Ward, DVM:** The four main social media platforms today are Facebook, Instagram, YouTube and Twitter—almost in that order as far as reaching pet owners at large. That’s pretty much where you want to be.

**Bill Schroeder:** The most important platform is still Facebook because of the channel’s reach and a veterinary practice’s ability to target their audience. Close behind are Instagram and YouTube.

**How has social media had a positive impact on the veterinary hospitals you work for?**

**Karin Kandur:** Social media lets us showcase the care we provide at Red Bank, highlight some of the patients who’ve benefited from our medicine, show behind-the-scenes aspects of our work and educate pet owners so they can take better care of their pets. It also allows us to highlight the team and let others get to know them as both veterinary professionals and members of the community.

**Kate Lawrence:** Social media is one of the most important ways we...
Think you can’t do video?
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Serraino: We find that success stories about critically ill patients do the best. A few years ago, CARE Center posted a story about a dog named Carmen that suffered severe smoke inhalation during a house fire. Her story, images and updates were shared globally and throughout the news media, including on CNN.

Are blogs a necessary part of social media marketing?

Dr. Ward: You need to own your content, and there’s no better content to own than blog posts. From them, you can link to Facebook memes, Instagram photos and YouTube videos.

Schroeder: Absolutely. Not only are blogs a great way to share information, but they have tremendous search engine optimization value, because the keywords and phrases used demonstrate a practice’s offerings and make the content very attractive to Google and other search engines.

Do you schedule content in advance?

Dr. Ward: The first thing to do is look out a month ahead to see whether there is a day or a celebration, such as Pet Dental Health Month or National Veterinary Technician Week. Then decide what content, if any, you want to build around that event, whether it’s a video or a blog or just a couple of memes. If we can plan in advance, we’ll use Hootsuite, TweetDeck or another social media scheduler. I think every veterinary clinic should take advantage of that.

Dr. Hess: Seasons and holidays drive a lot of what we post. Around holidays and school vacations, for example, there’s an increase in boarding, so we schedule posts about boarding during those times. Also, certain holidays drive particular kinds of posts. For example, people buy rabbits around Easter, so we have posts leading up to Easter about how you really need to think twice before buying a rabbit.

How do you react to negative feedback online?

Dr. Ward: Being able to deal with negativity on social media is a must. The internet runs on hate, and you need to develop a mechanism to tune that out. If you’re going to put yourself out there, be aware that you’re going to encounter negativity—that I can guarantee. The best advice I can give somebody is that if you give in to the haters, they’ve won.

Kandur: I think the biggest downside to social media, including review sites such as Google and Yelp, is negative reviews. We probably make it more difficult for ourselves because we honor the confidentiality of the veterinarian-client-patient relationship and choose not to respond with case details for all to read. People don’t understand the far-reaching effects of their words. Taking the professional road can be agonizing.

Dr. Hess: Striking out or being negative in your response never helps. I always try to contact people who have written a negative post offline to discuss their concern so we can try to come to a satisfying conclusion. If they’re happy, I ask them to remove the negative post. But there have been times when I have failed at that, and sometimes there’s nothing you can do. If I feel like I’ve responded correctly and politely, but the person persists in wanting to leave the post or won’t respond to me at all, then I create a public reply so that other people understand I’ve made my best efforts to work things out.

What’s your No. 1 piece of social media advice?

Dr. Hess: It’s important that posts have some regularity. We’ve created themes for certain days of the week where people expect certain things—Monday is Mammal Monday and Tuesday is Tank Tuesday [highlighting pets that call aquariums and terrariums home]. Related to these themes, we might offer a discount or a special gift because someone brought their ferret in on a Friday because they saw a Ferret Friday post. Once every week or two, we also post a “Did you know?” video where we mention a cool fact related to an exotic animal. Team members take turns creating these posts so people begin to recognize our staff while learning something interesting.

Schroeder: Bottom line: Create good, honest content that helps your audience, and interact naturally. ●
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Journal Scan: 
What’s the power behind catnip?

Though catnip may not attract all cats, this study examines the chemical geekery that results in a feline purr and points to future pharmaceuticals.

By Michael Nappier, DVM, DABVP

Why they did it
Catnip is well known for its effects on the approximately two-thirds of cats that can smell it. We have come to associate catnip with the intoxicated-like behavior of rolling, rubbing, purring and general feline happiness it produces. However, the synthesis of the active compound, nepatalactone, is not completely understood. Nepatalactone belongs to a class of compounds called terpenes and it’s thought that some plant-derived chemotherapeutics are synthesized in a similar fashion.

What they did
The specific chemistry behind the isolation of the intermediate steps for synthesizing nepatalactone is somewhat beyond the interest level of the average veterinarian. However, a detailed description is available in the full text article if you would like to geek out on some chemistry. Structure of the products was analyzed by x-ray crystallography.

What they found
Nepatalactone is created using a unique two-step process involving a series of NEPS enzymes that appear to be unique to nepatalactone synthesis.

Take-home points
As esoteric as these findings may sound, they have significant potential beyond the understanding of nepatalactone synthesis. Understanding this unique pathway opens the door for use of a similar process to create synthetic molecules as well as a better understanding of how other plant-derived terpenes are created. Such processes may lead to the discovery of new pharmaceuticals.

Reference
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