Indications and Important Safety Information for Interceptor Plus

Indications
Interceptor Plus is indicated for the prevention of heartworm disease caused by *Dirofilaria immitis* and for the treatment and control of adult roundworm (*Toxocara canis*, *Toxascaris leonina*), adult hookworm (*Ancylostoma caninum*), adult whipworm (*Trichuris vulpis*), and adult tapeworm (*Taenia pisiformis*, *Echinococcus multilocularis*, *Echinococcus granulosus* and *Dipylidium caninum*) infections in dogs and puppies 6 weeks of age or older and 2 pounds of body weight or greater.

Important Safety Information
Treatment with fewer than 6 monthly doses after the last exposure to mosquitoes may not provide complete heartworm prevention. Prior to administration of Interceptor Plus, dogs should be tested for existing heartworm infections. The safety of Interceptor Plus has not been evaluated in dogs used for breeding or in lactating females. The following adverse reactions have been reported in dogs after administration of milbemycin oxime or praziquantel: vomiting, diarrhea, depression/lethargy, ataxia, anorexia, convulsions, weakness, and salivation. For full prescribing information call 888-545-5973 or see Interceptor Plus package insert.
Rabies: Making a dent in a deadly global problem

Rabies is the deadliest zoonotic disease, yet somehow it is also neglected. Learn how two organizations are giving the virus the attention it deserves—even as the world focuses on a certain other virus.

By Sarah Mouton Dowdy

“Rabies? Is that really still a problem?” My friend’s confusion is understandable. After all, rabies is entirely preventable. Louis Pasteur developed the first vaccine over 100 years ago, and the United States is one of several countries in which dogs are rabies free (although about $300 million is spent annually to keep it that way).

And yet, every year, rabies claims an estimated 59,000 human lives. This translates to about 1 death every 9 minutes, not to mention the devastation it wreaks in wild and domesticated animal populations. As rabies is the deadliest zoonotic disease, only a handful of people have ever developed symptoms and lived to tell the tale. By that point, it’s typically too late.

So, to answer the question above—yes, rabies really is still a problem, one that disproportionately affects the rural poor and children (about half of human deaths are in children under 15). Rabies is the world’s leading cause of death from an infectious disease.

Pain management: Spotting feline musculoskeletal pain

Dermatology: Erythema multiforme in dogs and cats

Emergency medicine: The technician’s role in trauma cases

An overdue awakening: Addressing systemic racism in veterinary medicine

The demand for equity, diversity, and inclusion is being heard throughout the nation. In the veterinary profession, affinity groups are demanding less talk and more action.

By Erica Tricarico, Senior Editor

#WakeUpVetMed

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Addressing systemic racism in veterinary medicine

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Emergency medicine: The technician’s role in trauma cases

Pain management: Spotting feline musculoskeletal pain

Theriogenology: Ideal sterilization ages by breed and gender

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See page 44
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¹ Data on file at Boehringer Ingelheim.
The guidelines stress the importance of individualized vaccine recommendations based on a host of factors related to patient exposure and susceptibility risk.

By dvma360* Staff

This dog experienced a third seizure one week after receiving the third dose. The dog remained encephalitically until the study. Another dog with a history of seizures had a seizure 18 hours after the third dose of NexGard. The dog remained encephalitically and completed the study. A third dog with a history of seizures was treated with NexGard and received the same dose as the other dogs throughout the study.

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• Contact Information:

For a copy of the Safety Data Sheet (SDS) or to report suspected adverse drug events, contact Bayer/Buffington Ingham Animal Health (USA Inc. at 1-866-627-4521 or www.weathertech.com for additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or www.fda.gov/reportanimalae.

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

T he American Animal Hospital Association (AAHA) and the American Association of Feline Practitioners (AAFP) have announced the release of the 2020 AAHA/AAFP Feline Vaccination Guidelines. The guidelines, which represent an update to the 2013 AAFP Feline Vaccination Advisory Panel Report, were published simultaneously in the Journal of Feline Medicine and Surgery and the Journal of the American Animal Hospital Association; they are also available online.

The guidelines offer these resources:

• A lifestyle-based feline vaccine calculator
• FAQs and tips for client and staff education
• Core and noncore vaccine recommendations for both pet and shelter cats

A webinar summarizing the most important sections of the guidelines will be available in October. Learn more at aaah.org/felinevaccination and at catsvets.com/vaccinations. dvma360*

The guidelines stress the importance of individualized vaccine recommendations based on a host of factors related to patient exposure and susceptibility risk.

By dvma360* Staff

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Veterinary medicine is the least racially and ethnically diverse profession in the United States today.

Dr. Evan M. Morse

An overdue awakening: Addressing systemic racism in veterinary medicine

The demand for equity, diversity, and inclusion is being heard throughout the nation. In the veterinary profession, affinity groups are demanding less talk and more action.

By Erica Tricarico, Senior Editor
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The advantages of virtual conferences

As we go to press with this September issue of dvm360®, just a few days remain for Fetch dvm360® virtual conference attendees to view sessions. The conference, held in late August, replaced 2 live Fetch dvm360® conferences in Baltimore and Kansas City, as well as the Hospital Design 360° conference. By all accounts the inaugural event was a resounding success, with something for absolutely everyone on the practice team. More than 2500 veterinary professionals took advantage of 240+ hours of continuing education offered during the conference. The most well-attended sessions welcomed an average of 500 attendees each. (Look for coverage on page 16 and in coming issues of some of these popular sessions.) While we changed the format of our typical conference because of COVID-19 concerns, it turns out that learning in a virtual atmosphere has a number of perks. With all sessions available on demand immediately following presentation, virtual conference attendees had the luxury of attending as many sessions as they wished, without having to choose between multiple exciting sessions happening at the same time. In addition, with sessions available for viewing 24/7 both during and for 2 weeks after the conference, attendees didn’t have to take time off from work, and more people from individual practices could attend. And, of course, the virtual format saves veterinary professionals big on travel expenses and conference admission costs.

We are pleased to announce that registration is now open for our second virtual conference, which is replacing the Fetch dvm360® conferences in San Diego and Indianapolis, and the Atlantic Coast Veterinary Conference®. More than 100 experts will share their insights at this event, including 4 inspiring keynote speakers who will renew your passion for the profession. We’re also adding a virtual daycare, joint presentations by veterinarians and technicians, controlled substance training, and a panel discussion on diversity. See this month’s cover story (page 22) highlighting the work being done now to tackle the diversity crisis head on.

As always, we welcome your feedback about our live and virtual events, as well as the topics we cover in our publications and on our website. We are here for you.

—Mike Hennessy Sr
Chairman and Founder,
MJH Life Sciences™

Maximizing virtual client touchpoints

One of the advantages in my role at MJH Life Sciences™ is that I get to speak with so many colleagues. I love hearing about the creative ways you are providing excellent client service. As we continue to evolve how we practice veterinary medicine, I want to share a golden “op-paw-tunity” you may be overlooking to improve client relationships, and it’s sitting right in your parking lot.

While their dog is being evaluated for lameness and arthritis, for example, consider sending push notifications to the client’s smart phone with video content about what causes lameness, and how it is evaluated and treated. Providing this information is known as priming the pet parent, and it increases client loyalty and trust while fostering better decision-making.

Push notifications are also a great way to send quick reminders to waiting pet parents. “Don’t forget Charlie’s heartworm prevention. Let us know what you need and we can get it ready for you while you are waiting.” Or “check out our online pharmacy while you’re waiting. Remember, heartworm disease is year-round both in dogs and cats.”

Make anxious pet parents as comfortable as possible in their vehicle by bringing them a cup of coffee or tea and having a staff member talk with them while remaining socially distant. Going the extra mile shows that you value your clients as people and not just as another “appointment.”

Consider having waiting pet parents take a survey on their smart phone. What do they like about the practice? What areas need improvement? What additional services would they like your clinic to provide? This type of feedback provides crucial information for you, and most clients will be happy to comply.

Send clients snapchats, Instagram stories, or pictures of their pets receiving wags and kisses from your hospital team. This not only provides comfort to nervous pet parents, it increases team morale and creates free marketing for your practice when clients share, post, comment, and engage.

Share educational content from your practice’s YouTube Channel (if you don’t have one, choose a team leader or marketing firm to help you with one) or from other sources your practice supports. This serves both to educate the client and provide effective distraction. You can even create and share a video from the pet’s perspective showing what the experience is like from curbside to physical exam.

These next 2 ideas may not be possible, depending on your location, availability, weather, and other factors, but are worth sharing because they showcase the amazing creativity of our profession. One hospital is requesting the help of waiting clients to create a mural of their logo on the side of their hospital. Pet parents receive a paintbrush and a number assigned to the tile(s) they can paint. Another hospital is asking waiting pet parents to plant a bulb in the hospital’s garden on behalf of their family. They then write their name on a tag so when the bulbs bloom, the hospital shows how it has “blossomed.”

These simple ideas do not cost much but go a long way. Take advantage of the time pet parents are waiting on you to help bond them further to your hospital and create peace of mind during uncertain situations. Keep on innovating. And always remember to take a deep breath…you’ve got this!

—Adam Christman, DVM, MBA
Chief Veterinary Officer
Surviving back to school in 2020

The year that most of us would rather forget is challenging us once again to adapt and overcome. Here is some advice for maintaining sanity in your home as kids return to school.

By Michele Leso, VMD

F or most families, the words “back to school” signify an end to the lazy days of summer and usher in an exciting time for children and their parents alike. Children get a fresh start, while us parents are jubilant for the return of more structured and disciplined days.

Yet here we are in 2020, where “normal” for most of us now includes masks, social distancing, cancelled sporting events, and remote learning. As a veterinarian, I am wired to follow the science. I work with what I know and, when faced with the unknown, I study all the latest journal articles, books, and theories I can get my hands on to help my patients. The mom part of maneuvering through this COVID-19 nightmare is far more harrowing.

Explaining 2020 to children in a way they can comprehend, keeping them safe, and preparing them for academic success are monumental tasks, and parents must lead the way with no books or articles to reference during this roller-coaster ride. My own children are in college and graduate school, but I wanted to share some thoughts to help moms and dads of younger kids navigate the beginning of this historic school and mind-blowing semester.

Make a game plan.
Every child is unique, and their “frazzled” alarm will go off at different times and at different decibel levels. Expectations for school performance, projects, timelines, and free time need to be well planned in a normal year, but setting these expectations in 2020, with its new guidelines from schools and teachers, is more important than ever.

Do not expect the school year to fall in a similar time-space continuum as last year, or even last spring. You simply cannot run a mile in the same amount of time on concrete as in deep sand. The key is to find out what works best for your family. Perhaps that means hanging a big spreadsheet in a central location in your home to keep everyone informed and accountable.

If you find that your game plan is not suiting your child, then stop, reset, and make a new plan. Make every effort to keep your own frazzled meter in check (easier said than done, I know), so that the upheaval that is bound to occur is less jolting to your child.

Have empathy.
Even in a typical school year there are missed opportunities, failures, broken relationships, conflicts, and other disappointments. Pile on that the tsunami of COVID-19, and you might start to feel like you are drowning. Take some time to assess not only your own worries, but your children’s as well.

My worries include loss of life, income, and savings. My children’s worries are, of course, different than mine, but they are no less important. Before addressing any problems that are plaguing the other members of my household, I have to remember to put on their shoes, so to speak, and see things from their perspective. Much of what is happening now has never happened before to our children, let alone to us parents. I will never know or understand what it feels like to have a graduation ceremony or a prom. I went to prom with the man who would later become my husband.

Spread kindness.
Little things that make people smile are needed now more than ever because these small acts of kindness can go a long way. Take the time to appreciate and find happiness in the little things you and your family can do for each other. Include in your week more of what will make them smile. Try inventing new popcorn flavors together, write fun notes on mirrors, or tuck candy into their sneakers. These seemingly simple acts will go a long way in reducing stress and promoting support as school gets underway.

You can do this.
We are all facing the unknown as we head into the final quarter of 2020, and it is going to be an emotional journey into 2021. I find that journaling can be a cathartic way to acknowledge both the good and the bad in your life before you move on. Let it flow onto paper as a way of making forward progress.

Another idea is to implement an emotion jar. Place an empty jar, slips of paper, and a pen in a central location and invite your family to write down their negative feelings and frustrations and tuck them into the jar as a way to release them. When the jar is full, you can decide as a family whether to dump them out and share them, shred them, or burn them—whatever fits your family’s needs.

Children, no matter their age, look to their parents in troubling situations. They will follow your cues, whether by word or action. In this crazy part of this epic year, I hope that we can all find it in ourselves to mirror how we want our children to act during school this semester and beyond.
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AVMA virtual convention keynote: Redefining wealth

During the opening keynote at the AVMA Virtual Convention last month, a financial expert discussed the true meaning of wealth and the importance of self-care in achieving success.

By Kate Boatright, VMD

K
nown as America’s Money Maven, Patrice Washington encourages people to chase purpose, not money, to achieve wealth. In her keynote address at the AVMA Virtual Convention last month, Washington shared her personal journey to understanding that true wealth means much more than money and material possessions. In fact, she noted, wealth was once defined as “a state of being well.”

“Even the most passionate people have the potential to burn out when they don’t think about themselves,” Washington said. And in a profession facing a well-being and mental health crisis, her words resonated deeply.

A journey to redefine wealth

In 2008, at age 25, Washington owned a seven-figure business. Then the real estate bubble burst. She was 20 weeks pregnant and hospitalized on bedrest as the economy fell and her business began to suffer. She was told by her doctor that the stress of work could cause her to lose her unborn child.

“I had to decide in that moment what was most important to me,” she said, “and I made the decision to surrender.” For Washington, however, surrendering did not mean giving up. It meant letting go of the things she could not control and focusing on her health and the health of her unborn child.

In the immediate aftermath of the recession, she struggled financially while raising an infant. By 2009, she was living on her brother’s couch. Today she is an award-winning author, speaker, and media personality. Washington got through those tough times and built the career she has today by prioritizing self-care.

“You invited me here today so that we can dig a little deeper…so you could put yourself first and not succumb to this idea that you have to be relentlessly stressing and striving and going through so much strife,” Washington said.

The veterinary profession is filled with passionate people, but even doing work we are passionate about can lead us to work to our own detriment if we are not careful, she said. We must pay attention to key areas of our life, which Washington calls the 6 pillars of wealth: fit, faith, space, work, money, and people. She discussed 3 of those pillars.

The fit pillar

The first pillar Washington discussed was the fit pillar, which focuses on becoming your best self. This goes beyond the education, titles, and achievements you have worked so hard to obtain. “If you have a vision [for your life], it is your responsibility and your duty to protect the only vessel you will get to execute that vision,” she said.

Self-care practices are the foundation of the fit pillar. That looks different to everyone, Washington said, so we must find what will help us recover and renew ourselves.

Veterinary professionals encourage clients to invest in preventive care and have treatment plans for their pets. Washington asked: “How many of you dish out that information but then don’t take it personally for yourself?” Are we taking the time to invest in our own health the way we want our clients to invest in the health of their pets?

While physical health is important, Washington said, self-care encompasses much more. We must care for ourselves by taking time to rest. Many of us got where we are by working hard and constantly pushing toward the next goal, which means we never really took time to learn how to rest and assess how we feel in the moment. Washington says we must take care not to put ourselves below everything on our to-do list.

“I’m here today to remind you to move yourself back up to the top of that list,” she said, “because without you, none of these other things are possible. Without you being at your best, the very thing you say you are so passionate about can become a burden.”

Washington encouraged attendees to think of self-care as a continuous learning process. She considers herself to be in recovery from an achievement addiction. In a profession where we were pushed to excel for so many years, make the grades, and gather the experiences just to make it into vet school, many of us have likely experienced this same addiction, and recovery is an ongoing process. As our careers and lives move forward, we may abandon the self-care skills we developed and need to take time to remind ourselves how important they are.

The final component of self-care is mental fitness. Because past experiences and traumas can limit our future potential, Washington encouraged attendees to enlist the help of a therapist to work through these events. A guest on Washington’s podcast once shared the words of a mentor: “Your business, your career, will only grow to the extent that you are willing to heal.” She encouraged us to take the time to acknowledge where we need healing and work on these areas so that we can succeed and build wealth in a healthy way by building our fit pillar.

The people pillar

The people pillar is built on creating relationships that matter both personally and professionally. To achieve this, we must master the skills of being present and setting boundaries.

When we look at personal relationships, it is not enough for us to be physically present with those we love and care about. “I was so guilty of confusing being present in the space physically with my daughter, with being present, which meant actually listening to her,” Washington said. She knows that when you are passionate about your work, it is easy to be focused on it even when you are with your family. We must learn to be intentional with our presence and focus on our loved ones when we are with them.

Parents often talk about feeling guilty about work or travel because they are not spending time with their kids, but they also feel guilty at home because they are not at work.
Washington found that once she realized her power to set her own schedule and boundaries, she was better able to honor the relationships that mattered most. She was also able to be more present at work because she no longer felt guilty about the time she spent away from her family. Washington challenged us to set up very focused, deliberate family time and see how our perceptions of work and home shift. She stressed that family time does not just apply if you are a parent; it can apply to anyone important in your life—parents, siblings, partner, even friends. By setting boundaries, we can build and maintain these important personal relationships and approach our work with joy and confidence.

The skills to improve our personal relationships can also be used in our professional lives. Many businesses become so focused on attracting new clients and growing that they end up neglecting their existing clientele. She stressed the importance of deepening the relationship with existing clients and putting systems in place to serve them better.

**The space pillar**

This pillar is about setting your life up to support you. We've all heard the phrase “time is money,” and that is true for many people. This led Washington to ask a pointed question: “How many of you waste time every day?” She shared that the average person spends about 76 hours every year looking for things they own but cannot find. By keeping our space clear, we can focus on the things that matter to us. Washington invited participants to find an area of physical clutter in their life and clean it up. “Clutter is the physical manifestation of chaos in your mind,” she said. By taking simple steps and clearing clutter, you are more likely to find clarity and shift the way you are thinking about the things that cause stress.

**Chase purpose, not money**

While Washington is not a veterinarian, the lessons she shared can be applied to create a successful life in the profession. She challenged us to develop these 3 pillars for ourselves. Washington knows that veterinary professionals are passionate, purpose-driven individuals. Her final piece of advice: “You've got to take care of yourself, your relationships, and your space so that you can do the work you were called to do.”

Kate Boatright, VMD, a 2013 graduate of the University of Pennsylvania, is an associate veterinarian and freelance speaker and author in western Pennsylvania. She is actively involved in organized veterinary medicine at the local, state and national levels and is a former national officer of the Veterinary Business Management Association.
E motions are tied to food, and most pet owners have strong feelings about how they feed their pets. But folding good information into those nurturing feelings can be tough for pet owners, especially with so much information—and misinformation—out there, explained Deborah Linder, DVM, MS, DACVN, a nutritionist at Tufts University Cummings Veterinary Medical Center.

At the Fetch dvm360® virtual conference, Linder provided guidelines for counseling cat and dog owners about choosing pet foods. The common question—“What is the best food?”—is a springboard for teaching clients how to select a food with their specific pet in mind, she said. “I don’t think there’s a one-size-fits-all choice.”

**The resources**

It is up to veterinarians to walk their clients through the evidence. The 2 places pet owners can go for food facts are the Association of American Feed Control Officials (AAFCO) and the World Small Animal Veterinary Association (WSAVA).

AAFCO is a voluntary membership organization that identifies safe pet food ingredients, outlines food label requirements, and builds nutrient profiles based on the latest findings in pet nutrition research. Although states use AAFCO guidelines as a basis for creating their pet food regulations, the organization has no enforcement role.

Using the latest research findings, AAFCO calculates nutrient profiles for commercial pet foods annually. These profiles set forth minimum and maximum percentages of nutrients, on a dry-matter (moisture-free) basis, required for a diet to be considered “complete and balanced” for the main life stages: growth (puppies and kittens), adult (1 year to end of life), and gestation/lactation.

Some foods are formulated to meet the needs of “all life stages.” However, no AAFCO nutrient profiles exist for specific population segments like “canine athletes” or “senior cats.” Such labeling is simply marketing, Linder noted.

WSAVA offers a toolkit for pet owners to procure nutrition information tailored to their pets. The kit also lists specific questions owners can ask food companies or their own veterinarian regarding product research, manufacturer quality control, etc.

“I like to give owners some agency so they understand how I’m selecting food and thinking through what’s best for pets,” she said. “I also give them information so they can be more active in the decisions.”

Neither organization makes brand recommendations, but owners can use AAFCO and WSAVA resources and guidelines to hone in on specific foods that are ideal for their pets by following these key steps:

- Identify responsible pet food manufacturers.
- Evaluate food quality control methods.
- Check labels to see how foods line up with a specific pet’s nutritional needs.
- Look for red flags on pet labels.

**Does the manufacturer measure up?**

How can you know if a company is responsible? Linder advocates phoning them directly. This is one way to find out if a company employs critical staff, such as a board-certified veterinary nutritionist, a PhD nutritionist, an animal food formulation specialist, and a toxicologist.

“At the end of the day,” she explained, “someone with expertise has to come up with the formulation for a food, think through that recipe, consider all the ingredients that should go into it and how these ingredients interact with each other, and know the biochemistry and nutritional physiology behind that.”

She cautioned against placing much credence in the celebrity spokespeople who represent specific pet foods or their manufacturers.

While on the phone with the company, one might also inquire about quality control testing in the processing of their foods. Also, has the manufacturer looked at how the ingredients interact with each other? Have digestibility and bioavailability been studied? Does the product travel well? Withstand the elements? Have adequate shelf life? One company, Linder pointed out, went so far as to store food samples in a sauna for a month and then cultured them for bacterial growth.

**Labeling labels**

Once the company and their quality control measures have been given the thumbs-up, it’s time to look at food labels. The AAFCO statement describes a food in 1 of 2 ways:

- “Complete and balanced” means the food contains all essential ingredients for a healthy puppy/kitten, adult, dog/cat in gestation/lactation, or dog/cat of any life stage. “For intermittent or supplemental feeding” indicates that the food was formulated for a specific health status and should be fed only under veterinary supervision.
- “At the end of the day,” she explained, “someone with expertise has to come up with the formulation for a food, think through that recipe, consider all the ingredients that should go into it and how these ingredients interact with each other, and know the biochemistry and nutritional physiology behind that.”

**Red flags**

Linder added that the pet owner perusing the food aisles should look out for common red flags on food labels, such as outlandish marketing tactics, lack of information, disregard for facts (ie, “Dogs get heart attacks just like people do”), and unfounded health claims (ie, “This food treats ear infections”).

By prodding clients to lift the emotion out of pet food purchases, she concluded, veterinarians can work with them to implement a team approach that highlights their mutual goal of doing what’s best for the pet.

Crunching the data on pet foods

Pet food labels are awash with unfamiliar ingredients, nutrient percentages, feeding directives, and marketing claims. Use these guidelines to help your clients understand the complexities of pet food labels and match dietary choices to pets’ nutritional needs.
Managing allergic dermatitis can be frustrating for veterinarians and owners alike. Diagnosis isn’t straightforward, as clinical signs for various types of allergic dermatitis (e.g., flea allergy, atopic dermatitis, food allergy) can overlap. Diagnosis of atopic dermatitis is generally based on consistent history, clinical signs and exclusion of other differentials. However, reaching a definitive diagnosis isn’t always practical due to the associated cost and the steps involved in ruling out all other possible causes. Often, veterinarians must treat atopic and allergic dermatitis without the benefit of a confirmed diagnosis.

Selecting the best treatment for a specific patient presents its own challenges, as some therapies are ineffective and client compliance can be an issue. Fortunately, newer targeted treatments offer fast response times and good efficacy.

**TRADITIONAL THERAPIES FOR ALLERGIC DERMATITIS**

Glucocorticoids have been a mainstay for managing allergic dermatitis for a long time, but they have limitations. Although they effectively relieve itching and inflammation, the side effects—primarily increased drinking, urination and appetite, as well as behavioral changes in some dogs—are intolerable for some pet owners. Some veterinarians reach for antihistamines because they are inexpensive and associated with minimal side effects. However, antihistamine monotherapy is frequently ineffective. Simply blocking histamines is often inadequate because it is primarily the key cytokine mediators that are causing the pet’s itch and inflammation. According to the International Committee on Allergic Diseases of Animals, antihistamines offer little or no benefit in treating flares of canine atopic dermatitis. Also, antihistamines tend to cause drowsiness, which some pet owners find objectionable. Inadequate treatments can prolong patient suffering and can contribute to owner dissatisfaction, disappointment and loss of confidence in the treatment process. Fortunately, veterinarians have newer options available, like targeted therapy.

**WHAT IS TARGETED THERAPY, AND HOW IS IT DIFFERENT?**

Newer targeted therapies work by inhibiting specific steps in the pathway that produces itching and inflammation in dogs with atopic and/or allergic dermatitis.

Cytokines are chemical signaling molecules that act as inflammatory mediators. Cytokines with a pivotal role in canine allergic dermatitis include interleukin-2 (IL-2), interleukin-4 (IL-4), interleukin-6 (IL-6), interleukin-13 (IL-13) and interleukin-31 (IL-31). These cytokines contribute significantly to itching and inflammation in allergic dogs. For example, when IL-31 binds to sensory neuron receptors in the skin, it triggers JAK enzyme-mediated pathways that stimulate the itch signal.1

One targeted therapy, CYTOPoint® (Zoetis), is an injectable, canienized monoclonal antibody that targets IL-31 specifically, stopping itching by inhibiting the binding of this cytokine to its receptors in dogs with allergic dermatitis and atopic dermatitis.2,3 Oclacitinib tablet (APOQUEL®—Zoetis) is a targeted therapy that works fast and provides good efficacy in dogs with atopic dermatitis and allergic dermatitis. APOQUEL is a JAK enzyme inhibitor that selectively targets JAK-1-dependent pruritogenic, proallergic and pro-inflammatory cytokines.4 APOQUEL stops itching and inflammation at the source by suppressing transmission of chemical signals that lead to clinical signs in dogs with atopic and allergic dermatitis.

**WHY CHOOSE APOQUEL?**

Following oral dosing, APOQUEL starts to relieve allergic itch within 4 hours,5 significantly controls itch within 24 hours6 and, with continued use, relieves inflammation and improves skin lesions.7,8 APOQUEL is safe and effective for short-term flare-ups or long-term use.9,10 It can be used concurrently with NSAIDs, vaccines, allergen immunotherapy, antibiotics, parasiticides and antifungals.11 The use of APOQUEL has not been evaluated in combination with glucocorticoids, cyclosporine or other systemic immunosuppressive agents. APOQUEL does not interfere with results of serum allergy testing or intradermal testing.12 APOQUEL is also easy for pet owners to use. It can be given with or without food,13 making dosing easier. And once-daily therapy following initial twice-daily dosing up to 14 days14 means better owner compliance.

In a short-term clinical study the most common adverse events were vomiting and diarrhea.15

**EFFICACY STUDIES**

APOQUEL’s efficacy for the treatment of atopic dermatitis was assessed in a multicenter, randomized, placebo-controlled trial involving 18 dermatology referral practices in the United States.16 Dogs with atopic dermatitis received APOQUEL or placebo and were followed for 112 days. Treatment success was based on owner assessments of improvements in itching and various dermatologists’ assessments of improvements in skin lesions. Dogs receiving APOQUEL improved significantly compared with dogs receiving placebo.17

Although APOQUEL’s efficacy for atopic dermatitis has been well documented, dogs with other forms of allergic dermatitis also respond well. In a 30-day multicenter study,18 436 dogs with atopic dermatitis, flea allergy dermatitis, food allergy, contact allergy or unspecified allergic dermatitis were given APOQUEL or a placebo and assessed for improvement in pruritus. After 7 days of treatment, 84.6% of dogs receiving APOQUEL had improved, compared with 42.5% of dogs given a placebo. Based on owner assessment, dogs receiving APOQUEL had lower mean pruritus scores on each of the seven evaluation days compared with dogs receiving a placebo. For dogs that continued receiving APOQUEL throughout the 30-day study, veterinarians-assessed dermatitis scores continued to improve until the end of the trial.19

**THE BOTTOM LINE**

Allergic itch isn’t just a nuisance. Itching is an urgent medical condition that needs fast and effective therapy. Itching can make pets and their owners miserable, which contributes to poor quality of life and adversely affects the human-animal bond. The good news is that targeted therapies, like APOQUEL, are making a difference and changing the lives of allergic dogs and their owners.

**IMPORTANT SAFETY INFORMATION:**

Do not use APOQUEL in dogs less than 12 months of age or those with serious infections. APOQUEL may increase the chances of developing serious infections, and may cause existing parasitic skin infestations or pre-existing cancers to get worse. APOQUEL has not been tested in dogs receiving some medications including some commonly used to treat skin conditions such as corticosteroids and cyclosporines. Do not use in breeding, pregnant, or lactating dogs. Most common adverse effects are vomiting and diarrhea. APOQUEL has been used safely with many common medications including parasiticides, antibiotics and vaccines. See Brief Summary of Prescribing Information on the next page.

**REFERENCES**

Brief Summary of Prescribing Information

For oral use in dogs only

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

Indications: Control of pruritus associated with allergic dermatitis and control of atopic dermatitis in dogs at least 12 months of age.

Dosage and Administration: The dose of APOQUEL (oclacitinib maleate) tablets is 0.18 to 0.27 mg oclacitinib/lb (0.4 to 0.6 mg oclacitinib/kg) body weight, administered orally, twice daily for up to 14 days, and then administered once daily for maintenance therapy. APOQUEL may be administered with or without food.

Dosing Chart

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<th>Weight Range</th>
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<td>Low</td>
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Warnings: APOQUEL is not for use in dogs less than 12 months of age (see Animal Safety). APOQUEL may not be used in dogs with serious infections.

APOQUEL may increase susceptibility to infection, including demodicosis, and exacerbate neoplastic conditions (see Adverse Reactions and Animal Safety).

Human Warnings: This product is not for human use. Keep this and all drugs out of reach of children. For use in dogs only. Wash hands immediately after handling the tablets. In case of accidental eye contact, flush immediately with water or saline for at least 15 minutes and then seek medical attention. In case of accidental ingestion, seek medical attention immediately.

Precautions: APOQUEL may be used alone or in combination with other treatments, including glucocorticoids or cyclosporine. It is recommended to monitor the patient for adverse reactions and adjust the dosage as necessary.

Adverse Reactions: Control of Atopic Dermatitis

In a masked field study to assess the effectiveness and safety of oclacitinib for the control of atopic dermatitis in dogs, 152 dogs treated with APOQUEL and 147 dogs treated with placebo (vehicle control) were evaluated for safety. During the 112-day study by Day 16, adverse reactions were reported (and percent of dogs affected) during Days 0-16 included diarrhea (4.6% APOQUEL, 3.4% placebo), vomiting (3.9% APOQUEL, 4.1% placebo), anorexia (2.6% APOQUEL, 0% placebo), new cutaneous or subcutaneous lump (2.6% APOQUEL, 2.7% placebo), and lethargy (2.0% APOQUEL, 1.4% placebo). In most cases, diarrhea, vomiting, anorexia, and lethargy spontaneously resolved with continued dosing. Of these 283 dogs, two dogs were withdrawn from study due to suspected treatment-related adverse reactions: one dog that had an intense flare-up of dermatitis and severe secondary pyoderma after 19 days of APOQUEL administration, and one dog that developed generalized demodicosis after 28 days of APOQUEL administration. Two other dogs on APOQUEL were withdrawn from study due to suspected or confirmed malignant neoplasia and subsequently euthanized, including one dog that developed signs associated with a heart base mass after 21 days of APOQUEL administration, and one dog that developed a Grade III mast cell tumor after 60 days of APOQUEL administration. One of the 147 dogs in the placebo group developed a Grade I mast cell tumor and was withdrawn from the masked study. Additional dogs receiving APOQUEL were hospitalized for diagnosis and treatment of pneumonia (one dog), transient bloody vomiting and stool (one dog), and cystitis with urinalithiasis (one dog).

In the 283 dogs that received APOQUEL, the following additional clinical signs were reported after beginning APOQUEL (percentage of dogs with at least one report of the clinical sign as a non-pre-existing finding): pyoderma (12.0%), non-specialized dermal lumps (12.0%), otitis (9.9%), vomiting (9.2%), diarrhea (6.0%), histiocytoma (3.9%), cystitis (3.5%), anorexia (3.2%), lethargy (2.8%), least skin infections (2.5%), pododermatitis (2.5%), lipoma (2.1%), polydipsia (1.4%), lymphadenopathy (1.1%), nausea (1.1%), increased appetite (1.1%), aggression (1.1%), and weight loss (0.7).

Control of Pruritus Associated with Allergic Dermatitis

In a masked field study to assess the effectiveness and safety of oclacitinib for the control of pruritus associated with allergic dermatitis in dogs, 216 dogs treated with APOQUEL and 220 dogs treated with placebo (vehicle control) were evaluated for safety. During the 30-day study, there were no fatalities and no adverse reactions requiring hospital care. Adverse reactions reported (and percent of dogs affected) during Days 0-7 included diarrhea (2.3% APOQUEL, 0.9% placebo), vomiting (2.3% APOQUEL, 1.8% placebo), lethargy (1.8% APOQUEL, 1.4% placebo), anorexia (1.4% APOQUEL, 0% placebo), and polydipsia (1.4% APOQUEL, 0% placebo). In most of these cases, signs spontaneously resolved with continued dosing. Five APOQUEL group dogs were withdrawn from study because of: darkening of skin and fur (1 dog); diarrhea (1 dog); fever, lethargy and cystitis (1 dog); an inflamed footpad and vomiting (1 dog); and diarrhea, vomiting, and lethargy (1 dog). Dogs in the APOQUEL group had a slight decrease in mean white blood cell counts (neutrophil, eosinophil, and monocyte counts) that remained within the normal reference range. Mean lymphocyte count for dogs in the APOQUEL group increased at Day 7, but returned to pretreatment levels by study end without a break in APOQUEL administration. Serum cholesterol increased in 25% of APOQUEL group dogs, but mean cholesterol remained within the reference range.

Continuation Field Study

After completing APOQUEL field studies, 239 dogs enrolled in an unmasked (no placebo control), continuation therapy study receiving APOQUEL for an unrestricted period of time. Mean time on this study was 372 days (range 1 to 610 days). Of these 239 dogs, one dog developed demodicosis following 273 days of APOQUEL administration. One dog developed dermal pigmented viral plaques following 266 days of APOQUEL administration. One dog developed a moderately severe bronchoepididymitis after 272 days of APOQUEL administration; this infection resolved with antimicrobial treatment and temporary discontinuation of APOQUEL. One dog was euthanized after developing abdominal ascites and pleural effusion of unknown etiology after 450 days of APOQUEL administration. Six dogs were euthanized because of suspected malignant neoplasms: including thoracic metastatic, abdominal metastatic, splenic, frontal sinus, and intracranial neoplasms, and transitional cell carcinoma after 17, 120, 175, 49, 141, and 286 days of APOQUEL administration, respectively. Two dogs each developed a Grade II mast cell tumor after 52 and 91 days of APOQUEL administration, respectively. One dog developed low grade B-cell lymphoma after 392 days of APOQUEL administration. Two dogs each developed an apocrine gland adenocarcinoma (one dermal, one anal sac) after approximately 210 and 320 days of APOQUEL administration, respectively. One dog developed a low grade oral spindle cell sarcoma after 320 days of APOQUEL administration.

To report suspected adverse events, for technical assistance or to obtain a copy of the MSDS, contact Zoetis Inc. at 1-888-963-8471 or www.zoetis.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.

Storage Conditions: APOQUEL should be stored at controlled room temperature between 20° to 25°C (68° to 77°F) with excursions between 15° to 40°C (59° to 104°F).

How Supplied: APOQUEL tablets contain 3.6 mg, 5.4 mg, or 16 mg of oclacitinib as oclacitinib maleate per tablet. Each strength tablets are packaged in 20 and 100 count bottles. Each tablet is scored and marked "APOQUEL". Distributed by Zoetis Inc., Kalamazoo, MI 49007.
A road map for antimicrobial stewardship

A team from the University of Minnesota College of Veterinary Medicine has released a free, first-of-its-kind handbook on antimicrobial stewardship for companion animal veterinary clinics.

By Sarah Mouton Dowdy

T oo much of a good thing can be disastrous. The Centers for Disease Control and Prevention estimates that at least 2.8 million people get antibiotic-resistant infections each year in the United States, resulting in more than 35,000 deaths.1 And with widespread antibiotic use—both appropriate and inappropriate—as the main culprit in this growing resistance, attention in human medicine (as well as in agriculture) has rightly shifted in recent decades to pursue more responsible antimicrobial practices.

And yet, a crucial gap persists in this One Health issue. According to a team from the University of Minnesota College of Veterinary Medicine (CVM), a truly comprehensive approach would need to consider the millions of household pets that are prescribed antimicrobial medications from the same drug classes as their owners.

In fact, the American Veterinary Medical Association (AVMA) estimates that the frequency of inappropriate antimicrobial use in human medicine and companion animal veterinary medicine is comparable, and a veterinary teaching hospital study found that 40% of canine antibiotics were prescribed for patients with no evidence of infection.2 The AVMA also recently released a report that details the critical role veterinary professionals play in preserving the effectiveness of antimicrobials and includes species-specific report cards summarizing pathogens of concern.3

The CVM team launched the Antimicrobial Resistance and Stewardship Initiative (ARSI) last fall. According to its website, ARSI exists to “[provide] high-quality and evidence-based resources for antimicrobial resistance and stewardship and [conduct] research to advance knowledge of companion animal diseases (dogs, cats, horses) and treatment.”

Less than a year after its formation, the initiative has released a free, downloadable guide to implementing the AVMA’s 5 core principles of antimicrobial stewardship in companion animal veterinary clinics.4 The Handbook of Antimicrobial Stewardship in Companion Animal Settings provides a self-paced, step-wise approach to improving antimicrobial use, complete with concrete actions, tools, and examples.5

Do I really have time for this?

If the thought of implementing new antimicrobial standards sounds overwhelming, Jennifer Granick, DVM, MS, PhD, DACVIM, associate professor in the Department of Veterinary Clinical Sciences at the University of Minnesota CVM, wants to reassure you. She and her team haven’t designed the handbook for an idealized world. It was crafted with your daily obstacles in mind.

“For many veterinarians, the biggest hurdle in implementing an antimicrobial stewardship (AS) program is just knowing where to start,” says Granick. “In human health care, hospitals have AS teams with dedicated effort and resources. We just don’t have that in vet med, so we need to adapt AS implementation to our reality—limited time!” That’s why, she says, the handbook aims to provide a roadmap of small actions that can be used to build a robust AS program.

How to get started

Here’s a quick snapshot of what it would look like for your clinic to take the first step in implementing the standards outlined by the handbook.

The guide is divided into 3 categories—basic, intermediate, and advanced—each with a clear set of tasks dedicated to addressing the AVMA’s core principles of AS. The activities completed in the basic category position you for beginning the intermediate one, and so on.

The first core principle to tackle in the basic category is to commit to AS, which is broken into 4 tasks:

1. Form your AS committee.
2. Identify an AS champion.
3. Make a public commitment to your clients.
4. Define (and redefine) your hospital AS priorities.

Perhaps the hardest part of the handbook is that it is full of links to free tools, templates, and resources that are ready to go and easy to use, says Granick. For example, she notes that it provides a link to a sample commitment poster (part of making a public commitment to your clients) that you can download, customize for your practice, and print and post in your lobby. “This is the same idea as telling your friend that you made a commitment to exercise daily,” Granick explains. “It provides easy accountability, making it more likely you will stick with a plan.”

Small steps matter

The fight against antimicrobial resistance needs veterinary professionals. While your clinic may not be able to implement each and every strategy the handbook recommends, the CVM team says it’s possible for all clinics to make important incremental changes. As Granick puts it: “One small step at a time.”

REFERENCES
Fauci discusses the 3 major categories of vaccine platforms currently being tested for COVID-19: nucleic acid, viral vector, and protein subunit vaccines. Three vaccine candidates entered phase 3 clinical trials at the end of July. Based on the preliminary data, he is “cautiously optimistic” that a safe and effective vaccine will be approved by early 2021 and that adequate doses will be available throughout the year.

One Health

Fauci then reflected on the important role that animals and the veterinary profession play in understanding zoonotic diseases. He referenced a study published recently in *The New England Journal of Medicine* in which mRNA vaccination in nonhuman primates was shown to reduce viral replication in the lungs as well as in the upper airway, a finding with “very important implications for the transmissibility of the virus,” he said.

To close his address, Fauci gave a “shout-out” to One Health. Emerging and re-emerging zoonotic pathogens are truly a zoonotic challenge, he said, with 70% to 75% of all new infections emerging from an animal host. “I want to thank all of the [attendees] for their part in taking care of the health of the United States by studying animals,” he concluded.

WVC moves to fall in 2021

Viticus Group announced last month that the WVC 93rd Annual Conference will take place from September 6 to 9, 2021. Based on survey feedback from the veterinary community, the organization feels that moving the conference from winter to late summer will provide ample time for attendees to adjust to life in postpandemic conditions. Holding the conference in September also avoids flu season.

“We’re making the adjustments that are best for veterinary professionals under the circumstances,” says Viticus Group CEO Andrea Davis. “We look forward to having another amazing WVC Annual Conference next fall.”

In addition to the change in timing, the organization will introduce a virtual feature in the 2021 conference, although no details were provided.

The conference will return to its regular schedule for the 2022 event, which will be held at the Mandalay Bay Convention Center and Viticus Center campuses in Las Vegas on March 6 to 9, 2022. For more information, visit info.viticusgroup.org/wvc-conference.
Private-sector veterinary hospital ratifies union contract

This historic agreement will address the low wages and unjust policies within the profession, thus making veterinary medicine a more viable career.

By Erica Tricarico, Senior Editor

Employees at Columbia River Veterinary Specialists (CRVS) in Vancouver, Washington ratified the first-ever private-sector veterinary union contract last month, according to the International Longshore and Warehouse Union (ILWU). The overwhelming victory (53-1 vote) came after more than a year of bargaining with CRVS management, according to an ILWU press release.

“This is only the first step toward making veterinary medicine a viable career during this time of corporate greed,” says CRVS employee Kat Bennett, LVT, VTS (SAIM), in the release. “[Our contract] will provide veterinary workers with protections, wage equality, and establish a foothold for continued improvements in working conditions.”

Although union contracts have been ratified in a couple of corporate-owned practices to date, this is the first to be ratified in a privately held veterinary hospital.

What this contract means for the profession

Liz Hughston, MEd, RVT, CVT, LVT, VTS (SAIM) (ECC), president of the National Veterinary Professionals Union, echoes Bennett’s sentiments. “Having a contract that provides for fairness in the workplace, and one that raises the bar on wages and benefits, is an amazing and critical first step toward sustainability of this profession for credentialed veterinary technicans, veterinary assistants, customer service representatives, and all of the hard-working people caring for pets every day,” she tells dvm360.

Massive consolidation, low wages, long hours, and workplace hazards have caused many to leave the profession in hopes of finding a more sustainable career. According to 2018 Bureau of Labor Statistics data, veterinary technicians in the United States earn about $33,000 per year—not nearly enough to support a family of 4.

Tracie Vestal, LVT, also employed at CRVS, had not received any meaningful wage increase from the hospital in more than 5 years of employment there. “I had considered substandard pay par for the course as a veterinary technician and had been debating leaving the industry,” Vestal says in the release. “This was an agonizing consideration given my deep and abiding love and dedication to the veterinary profession.”

Benefits of this historic contract

The CRVS contract, which is retroactive to January 1, 2020, includes a “just cause” standard of protection (rather than “at-will” employment) and fair policies for determining layoffs and recalls based on seniority. It also includes annual cost-of-living wage adjustments over the next 3 years. Once the contract is implemented, workers can expect to see an average wage increase of about 7%, and by the end of the agreement in June 2023, current CRVS employees can expect a 17% increase in pay, on average.

Additionally, workers will be “compensated via an agreed-upon wage structure, including differentials for overnight work, additional certifications and demonstrated proficiency, and seniority tier,” says ILWU.

Looking to the future

Despite this win, “there is still much work to be done, both at the bargaining table, as well as across the country in this industry when it comes to our rights in the workplace, and creating sustainability and longevity in the veterinary profession, and we are excited to be a part of that movement,” says Hughston.

“We are hopeful that this contract will serve as a model and a cornerstone on which we can build a sustainable movement throughout our industry,” dvm360*

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An overdue awakening: Addressing systemic racism in veterinary medicine

The demand for equity, diversity, and inclusion is being heard throughout the nation. In the veterinary profession, affinity groups are demanding less talk and more action.

By Erica Tricarico, Senior Editor

The recent deaths of George Floyd, Breonna Taylor, and Ahmaud Arbery, among many others, have sent shockwaves of anger, sadness, disbelief, and frustration across the nation. For some, these tragedies have served as a testament to the pain and unfair treatment that people of color have experienced for years. For many, they serve as a rude awakening that there is a long way to go in the fight for equality.

The resurgence of the Black Lives Matter movement has refocused efforts on tackling the diversity crisis in veterinary medicine, a profession in which less than 1% of veterinarians are Black, 6.1% are Asian, and 1.6% are Hispanic or Latino, according to 2019 US Bureau of Labor Statistics data.2 AVMA data differ somewhat—according to 2019 census numbers provided by the organization, approximately 2% of veterinarians are Black, 6.1% are Asian, and 3 to 4% are Hispanic—but regardless of the precise number, minorities make up a very small proportion of veterinarians.

According to 2018-2019 data from the American Association of Veterinary Medical Colleges (AAVMC), only 2.1% of veterinary school applicants are Black.2 “I was only 1 of 5 [Black students] in my class of 127,” says BlackDVM Network founder and 2020 graduate Tierra Price, DVM. “I felt pretty alone and distant from other students who looked like me and decided to create an Instagram page to bring us together.”

Krista Miller, DVM, who’s been practicing in Baton Rouge, Louisiana, for more than a decade, says she was 1 of just 2 Black students in her class of 70 at Mississippi State University College of Veterinary Medicine. “Being one of the only Black students in a predominantly White program constantly makes you think more, more...do more, work harder, study longer, dress well, be neat, don’t break a rule, you’re good enough, you’re not here because of your skin color, you
EdD, as associate executive director of AAVMC named Lisa Greenhill, MPA, in veterinary medicine. In 2004, the efforts have been made over the years to address the dismal lack of diversity in veterinary medicine. Daniel, PhD, founder of the National Association of Black Veterinarians, some of whom had no other choice but to go to Tuskegee (the only historically black college/university with a veterinary school),” says Annie Daniel, PhD, founder of the National Association for Black Veterinarians. “I think that is changing, especially since our organization and others have really boldly presented how racism and discrimination are affecting the profession. The profession is going to have to think long and hard after all these years about how are they going to level the playing field.”

The experiences of Price and Miller reflect the overall picture of race in the veterinary profession today. For years, veterinary students and professionals of color have felt isolated, misunderstood, and subject to racism by clients, colleagues, and professors alike. Some say they were qualified for but not accepted into veterinary programs, or advised to find a different career. Others say they have been mocked for their accents or “ethnic” names, or told by clients that their dogs don’t like Black people.

“I have talked to a lot of veterinarians, some of whom had no other choice but to go to Tuskegee (the only historically black college/university with a veterinary school),” says Annie Daniel, PhD, founder of the National Association for Black Veterinarians. “I think that is changing, especially since our organization and others have really boldly presented how racism and discrimination are affecting the profession. The profession is going to have to think long and hard after all these years about how are they going to level the playing field.”

The history of diversity efforts in veterinary medicine
Efforts have been made over the years to address the dismal lack of diversity in veterinary medicine. In 2004, the AAVMC named Lisa Greenhill, MPA, EdD, as associate executive director of diversity and, in 2005, the American Veterinary Medical Association (AVMA) commissioned a Diversity Task Force and launched Diversity Matters, a national plan devoted to increasing diversity in academic veterinary medicine.

The AAVMC has long been engaged in promoting diversity, equity, and inclusion (DEI) in academic veterinary medicine, Greenhill tells dvm360. Some of the association’s efforts include conducting and publishing diversity-related research; offering lectures, workshops, and symposia; and providing access to numerous additional resources for member institutions.

Greenhill also hosts AAVMC’s Diversity & Inclusion On Air podcast, which features conversations with veterinary professionals, students, sociologists, educators, and other guests of diverse races, backgrounds, and genders about a wide array of topics from the cultural nuances of dressing for interviews to discrimination in the workplace to how to have conversations about race.

“Given our work at AAVMC, I think the colleges of veterinary medicine are further ahead than the rest of the profession. Colleges are actively recruiting students from a wider variety of backgrounds. They are using evidence-based methods to more holistically assess applicants,” says Greenhill.

According to AAVMC data, the number of racially underrepresented veterinary students enrolled at US veterinary colleges now stands at just under 20%.2

“We are making strides, but when those 20% graduate, what happens? Are they making their way to leadership? They should,” Christina V. Tran, DVM, associate professor and clinical relations lead veterinarian at the University of Arizona College of Veterinary Medicine, and president of the Multicultural Veterinary Medical Association (MCVMA),” tells dvm360.

“I think diversity, and specifically inclusion, are a continuum. You don’t get to an endpoint,” Tran says. “Just like in veterinary medicine, you don’t ever get to a point where you’ve learned everything there is to know. You can’t just learn some diversity vocabulary and not apply it.”

Coming together to create change
In recent years and even months, many DEI groups have cropped up across the nation to promote under-represented populations and create a safe space for minorities to connect and elevate one another. Recently, these affinity groups have united to help create permanent change within the profession.

“The AAVMC has long been engaged in promoting diversity, equity, and inclusion (DEI) in academic veterinary medicine, Greenhill tells dvm360. Some of the association’s efforts include conducting and publishing diversity-related research; offering lectures, workshops, and symposia; and providing access to numerous additional resources for member institutions.

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According to AAVMC data, the number of racially underrepresented veterinary students enrolled at US veterinary colleges now stands at just under 20%.2
• **Investment:** Provide financial and structural commitments to improve the state of DEI in veterinary medicine.

• **Outreach and engagement:** Advance lasting DEI initiatives between AVMA partners, state veterinary medical associations, constituent allied veterinary organizations, academic institutions, veterinary practices, and associates.

“That videoconference was a first step toward the AVMA working collaboratively with the DEI affinity organizations to address systemic racism in the profession,” Tran says. “And while it was a good call, there is much work to be done.”

The DEI groups also put out a call to action asking AVMA members to contact their House of Delegates representative to address systemic racism within the profession.

At the request of the AVMA, the 10 affinity groups (led by the MCVMA) created a powerful video illustrating why these DEI initiatives are so important and why these efforts need to be made now. It's fair to say that the video, which was shared widely on social media, made an impact. (Check it out at www.youtube.com/watch?v=7P4XY_QgNc).

“Everyone I spoke with was greatly moved by these searing personal accounts,” AVMA President Douglas Kratt, DVM, tells dvm360®. “These types of stories—not only in veterinary medicine, but across our society—illustrate the need for action to advance DEI and fight racism wherever it is found. We’re committed to using our platform and voice to promote diversity and inclusion.”

“We know that words not backed by action are hollow,” Kratt continues. “I am confident that we are on the path to meaningful and lasting change. That means barriers are removed, opportunities are expanded, and everyone is appreciated for what they bring to veterinary medicine and to society.”

At its meeting on July 29, the AVMA Board of Directors committed to hiring an external DEI consultant to help identify areas of greatest need, set priorities, and use resources most effectively. The board also approved the formation of an industry-wide commission to examine DEI issues affecting veterinary medicine. Two days later, during its annual meeting, the House of Delegates approved these actions and asked the Board to also implement the following:

• Establish DEI as its own strategic focus for the association.

• Communicate regularly with the House of Delegates and AVMA/Student AVMA (SAVMA) membership about progress addressing DEI within both the association and the profession as a whole.

• Promote AVMA DEI resources to its professional and student members.

**Where do we go from here?**

So, what changes can the profession expect in the coming months? According to Kratt, many. Among the AVMA’s immediate goals: to define its scope of work and identify DEI consultant candidates by September 15, and by October 1 to have consensus on and a description for the DEI entity it has promised to create.

The AVMA says it is also committing to develop new educational programming and bring Black leaders in veterinary medicine.

**How to discuss diversity issues in the workplace**

• **Start by listening:** If you have a question, don’t ask it in a way that assumes something. “Just be open to the fact that you just don’t know, and be open to the answer that you will probably get,” says NABV founder Annie Daniel, PhD.

• **Be the student in the conversation:** Don’t get offended when someone tells you the hard truth about some of their experiences with racism within the profession. “Sometimes the truth is difficult,” says Daniel.

• **Self-reflect after the conversation:** Think about how you can make things better in your workplace.

• **Offer support:** Having support is key.
to the forefront to share their experiences and help make the profession more accessible to the Black community and other underrepresented groups.

“Diversity, equity, and inclusion are essential for a thriving, healthy veterinary profession that serves all communities across the nation,” says Krak.

While Greenhill is hopeful about the future of veterinary medicine, she says there are still many in the profession who see [diversity and inclusion] issues as identity politics, almost as if “forcing change is somehow detrimental to White populations,” she explains. “Our individual identities shape the way we see the world, underpin how we process and use new knowledge, how we problem solve, how we see clients and engage with them and them with us, and colors our inter-and intra-professional identities. As we all plan for the next 50-plus years, I’m hopeful that more professionals will read the tea leaves, note the global population changes, the increasing desire for more people of color to pursue veterinary careers and conclude that there are still many in the profession who see [diversity and inclusion] issues as identity politics, almost as if “forcing change is somehow detrimental to White populations,” she explains. “Our individual identities shape the way we see the world, underpin how we process and use new knowledge, how we problem solve, how we see clients and engage with them and them with us, and colors our inter-and intra-professional identities. As we all plan for the next 50-plus years, I’m hopeful that more professionals will read the tea leaves, note the global population changes, the increasing desire for more people of color to pursue veterinary careers and conclude that there is a need to pay attention,” Greenhill concludes. “Resistance to change with respect to diversity and inclusion is going to leave the profession vulnerable to radical external change.”

**10 affinity and beyond!**

The dire need for increased diversity, equity, and inclusion in veterinary medicine is clear when you consider that there are currently 10 affinity organizations—many of which are quite new—supporting underrepresented groups in the profession. Here’s an introduction.

**Association of Asian Veterinary Medical Professionals (AAVMP)**
facebook.com/asiavisvetmed
The AAVMP Instagram page, launched in April by veterinary students Hira Basit and Stephanie Kuo, is promoting diversity and inclusion by showcasing Asians navigating their way through veterinary medicine. “We hope to inspire future generations of underrepresented populations to join the field and create a profession that really reflects the community that we serve,” says Kuo.

**BlackDVM Network**
blackdvnetwork.com
As a student in 2018, Tierra Price, DVM, launched the BlackDVM Network Instagram page to connect Black veterinarians, technicians, students, and clients. The organization regularly features Instagram Live video interviews on such topics as how to get into veterinary school, overcoming your obstacles, finding your passion, and more.

**Latinx Veterinary Medical Association (LVMA)**
latinxvma.org
Veterinary students Juan Orjuela and Yvette Huizar co-founded the LVMA in February with a mission to empower Latinx veterinary professionals and support Latinx students. The group primarily uses Instagram and Facebook to share its 4 pillars: community outreach, scholarship, mentorship, and professional development.

**Multicultural Veterinary Medical Association (MCVMA)**
mcvma.org
Co-founded in 2014 by Cara Williams, DVM, and Rachel Cezar-Martinez, DVM, the MCVMA aims to foster a community of veterinary professionals from diverse backgrounds and cultures to create a network for its members, provide support for each other within the profession, and harness the collective knowledge of its members to address the needs of both MCVMA members and the multicultural society.

**National Association for Black Veterinarians (NABV)**
nabvonline.org
Annie Daniel, PhD, director of veterinary instructional design and outcomes assessment in the Office of Student and Academic Affairs at Louisiana State University School of Veterinary Medicine, founded the NABV in 2016 to build a network of individuals and organizations that advocate for Blacks in the profession. “The state of affairs for Blacks in veterinary medicine cannot continue on the current trajectory,” Daniel says. “The NABV will work collectively toward a more diverse and inclusive profession for both current and future Black veterinarians.”

**Native American Veterinary Association**
facebook.com/
groups/753809451452278
Evelyn Galban, DVM, MS, DACVIM (Neurology), associate professor of clinical neurology at the University of Pennsylvania School of Veterinary Medicine, created the Native American Veterinary Association as a Facebook group in 2017, and today the group includes more than 100 members. Among its goals are to provide resources, support, and mentorship for indigenous people in the profession.

**Pride Veterinary Medical Community (PrideVMC)**
pridevmc.org
This long-running organization, founded in 1978, has been known by many names over the years, including the Association for Gay Veterinarians, the International Membership of Gay and Lesbian Animal Doctors, and the Lesbian and Gay Veterinary Medical Association. In 2018, the association rebranded itself as the Pride Veterinary Medical Community. “We will continue to strive to be more inclusive and be open to the entire rainbow.”

**Pride Student VMC**
pridevmc.org/pridesvmc
Pride Student VMC (Pride SVMC, formerly Broad Spectrum Student Veterinary Medical Association, founded in 2011) is the student-run arm of PrideVMC. Its mission is to connect, support, and empower LGBTQ+ people and allies within the academic veterinary community by fostering an understanding of the LGBTQ+ community within the profession, educating students on contributions of the LGBTQ+ community, encouraging healthy, supportive relationships, advocating for respect and equality, and helping to create safe and welcoming veterinary school environments.

**VOICE**
vetoicenational.org
In spring 2001, students at Cornell University College of Veterinary Medicine founded an organization to increase awareness and sensitivity to sociocultural issues in the field of veterinary medicine. Originally known as Veterinary Students for the Promotion of Socio-cultural Awareness, the name was changed in 2004 to Veterinary Students as One In Culture and Ethnicity (VOICE).

**Women's Veterinary Leadership Development Initiative (WVLDI)**
wvldi.org
Founded in 2013, WVLDI supports women in seeking and achieving leadership, policy, and decision-making positions within all areas of the profession. The organization is “dedicated to helping develop those leaders—in organized veterinary medicine and from practice owners to academia to corporate boards—and to achieve a stronger, more effective, and personally rewarding profession.”

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**REFERENCES**

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dvm360.com | September 2020 | 25

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Cover story | NEWS
rabies cases are in children under the age of 15). It remains particularly deadly in Asia and Africa, where the numbers of human deaths from dog-mediated rabies each year are in the tens of thousands. A staggering 35% of global human rabies deaths occur in India alone.2

The World Health Organization (WHO) has classified rabies as a neglected tropical disease,3 a category made up of bacteria and viruses that affect more than a billion people and cost developing economies billions of dollars a year. As WHO puts it, these diseases “pose a devastating obstacle to health and remain a serious impediment to poverty reduction and socioeconomic development.”

But despite rabies’ neglected designation and the current worldwide focus on a certain other virus (namely, SARS-CoV-2), there are organizations that are keeping the disease at the forefront of their missions. dvm360® had the opportunity to speak with team members from 2 of them—Andy Gibson, BVetMed MRCVS, director of strategic research at Mission Rabies, and Terence Scott, PhD, rabies technical lead at Global Alliance for Rabies Control (GARC)—to learn more about how they are working to end rabies, how the coronavirus pandemic is affecting their efforts, and how veterinary professionals can join their efforts on World Rabies Day in September 28 and beyond.

**Rabies**

> Continued from cover

**Mission Rabies: Boots on the ground in rabies-endemic areas**

Rabies is a true One Health issue. Exposure to rabid dogs accounts for more than 90% percent of human rabies cases and 99% of human deaths from the disease.1 Researchers have demonstrated that rabies can be controlled successfully in an area and human deaths can drop to zero if just 70% of dogs are vaccinated.2 That’s where Mission Rabies comes in.

**A 3-pronged approach**

The nonprofit organization, originally an initiative of the Worldwide Veterinary Service, has a 3-pronged approach for eliminating rabies, says Gibson. First, not surprisingly, dog vaccinations top the list. Second, Mission Rabies seeks to educate the communities in which it works, predominantly through teaching schoolchildren. “Children are overrepresented in human deaths, and they’re more likely to take on the messages and adapt their behavior,” Gibson explains. “We teach them how to be safe around dogs, how to not provoke dogs, how to avoid getting bitten and, if they do get bitten, how to avoid rabies infection.” The third, final, and crucial prong is surveillance. “If we don’t have information on where the virus is circulating, we’re just working in the dark,” he notes. “How else can we know if we’re making improvements?”

Mission Rabies started vaccinating in Goa in a big way, and after just 3 years, they saw a 90% decrease in rabies cases. Human rabies deaths in Goa have been at 0 for the past 2 years (the state previously averaged 17 deaths per year). “Every year Goa
doesn’t have a human death is an amazing feeling,” says Gibson. “You’ll never know the people who are still alive because of your work.”

Balancing care for 2 viruses

Gibson and his team now vaccinate about 100,000 dogs a year in Goa—that is, when there isn’t a worldwide pandemic going on. “The lockdowns have affected our ability to run our vaccination camps,” he explains. “We can’t send teams street by street like we usually would, but we’ve been adapting and following government guidance to try to get our teams working in a way that’s safe, and we’ve largely been able to keep vaccinating dogs in most of the places we work in some way or another.”

At the moment, that looks like focusing on stray populations and social distancing as much as possible. In Malawi, where Mission Rabies typically vaccinates another 100,000 dogs each year, teams have been working in more rural, less densely populated areas instead of running city campaigns from a central point.

Still, Gibson is concerned about increases in dog rabies cases at some of the project sites. “I wonder if this might be due to the big government lockdown in India,” he says. “India has a huge stray dog population, and there are a lot of people who go out and feed these strays. But with the lockdown, no one could go out and feed them. This could lead to an increase in dog aggression and dogs roaming farther distances to find food, and that is the perfect environment for rabies to spread.”

Although the travel ban has prevented Gibson from supporting teams in person, it hasn’t dimmed his passion (or lightened his workload). In addition to helping further the initiatives of both Mission Rabies and the World Veterinary Service, he is also working toward his PhD at the Roslin Institute at the University of Edinburgh in Scotland and is hoping to publish research on methods of rabies control in India soon.

“Rabies is a real problem for so many people, and for so little, a lot can be done to change [that],” he says. “We’re really trying to come at it with solutions we’ve developed from experience in the field and replicate them in new areas. We want to make people aware that they shouldn’t have to live with this problem. At the same time, we want to provide support for governments as well—writing proposals and plans for vaccination campaigns [and] providing them with methods and monitoring tools.”

GARC: Remote capacity building

GARC was established in 2007, and although its goal is similar to that of Mission Rabies—to prevent human deaths from dog-mediated rabies and to relieve the burden of rabies in other animal populations—it takes a slightly different approach.

“We’re trying to help governments with rabies elimination any way we can,” Scott explains. “We help them assess the rabies situation in their countries; determine priorities; and build their capacity to fight rabies themselves through training, support, and surveillance resources. All of these things are designed to be run remotely because it’s physically impossible to have teams in every country where we work.”

And GARC works in a lot of different countries. It is divided into 3 networks: ARACON (Asian Rabies Control Network), MERACON (Middle East, Eastern Europe, Central Asia and North Africa Rabies Control Network), and PARACON (Pan-African Rabies Control Network).

Innovation in isolation

Despite being largely remote, the GARC team has not remained unaffected by this new pandemic paradigm. “We typically do face-to-face training and workshops where we help governments develop national strategies,” Scott explains. “Obviously, that’s been heavily affected, so we’re creating new ways to do these things remotely. While travel will eventually resume at some point, this situation has challenged our perceptions on the need for in-person interactions. We want to adapt as best as possible now while we have the opportunity to develop these workshops as being feasible in an online situation.”

A young dog owner in Blantyre, Malawi, carries his newly vaccinated pet. Dogs that have been vaccinated are marked on top of the head with animal-friendly paint. Animal handlers from Mission Rabies vaccinate and place a reflective collar on dog in Goa, India.
Necessity is the mother of invention, and a lack of travel has provided time for it. Scott created the Rabies Epidemiological Bulletin (REB), a surveillance tool that is designed to be a “one-stop shop for rabies surveillance data reporting and analysis,” long before the coronavirus pandemic arose. But with more time in his home office and less time on the road, he has been working on improving user experience and, importantly, how training is done. “We’ve developed detailed protocols [with step-by-step screenshots] that enable us to begin implementation without face-to-face training,” Scott explains.

“Because of this,” he continues, “we’ve actually managed to work with a couple of governments in Africa to get REB up and running using our remote training and implementation. They may not be able to go out into the field to vaccinate or to collect samples or anything, but they can start adding their retroactive data into the system to make sure it’s up to date and [they] can see trends over time. So, when things kick off again, they can continue from [the] present and [they] can see trends over time. And finally, because pandemics can be particularly hard on nonprofit finances, you can also join the fight by donating to Mission Rabies and GARC. dvm360*

Another GARC tool that has received some attention in the midst of travel bans is the Stepwise Approach towards Rabies Elimination (SARE), which helps governments assess their country’s current rabies situation and develop a national strategy and work plan to eliminate the disease. The assessment aspect of the tool is composed entirely of yes/no questions, and Scott says that once it has been filled out, the tool generates a clear work plan with key performance indicators, timelines, responsible authorities, objectives, and other outputs that help government rabies personnel find a way forward. “We’re currently working with some of our partners to create a way to undertake an entirely remote workshop for implementing SARE, something that’s never been done before,” he explains.

Despite these accomplishments, Scott is concerned about the long-term effects of COVID-19 on rabies. “Rabies is labeled as a neglected disease, and it’s exactly that,” he laments. “And as soon as something else comes along that’s perceived to have a greater public health impact or greater impact on livestock and animals that have a market value (as opposed to dogs, which aren’t seen as valuable), it becomes even more neglected.”

Join the global fight
It would be cruel to outline the horrific suffering rabies is causing without offering ways to get involved, and with World Rabies Day coming up on September 28, it is a particularly prudent time to join the cause at a global level.

Although Goa and Malawi are year-round sites for Mission Rabies, the organization also has pilot projects in places like Sri Lanka, Uganda, Cambodia, and Tanzania, where they run short-term vaccination programs in a particular community to reach about 5000 dogs. Both the year-round and pilot sites take volunteers of all backgrounds. Fair warning: Like Gibson, you may get hooked. Visit missionrabies.com/volunteer to learn about future trips.

If you would rather battle rabies from your home office, you have options. GARC has several free online educational courses, including one specifically designed for those who work in animal health. Scott encourages anyone who handles and vaccinates animals to go through the course. There is also an introductory course that empowers people of all backgrounds to become rabies educators. “I’m horribly biased, but I think it’s especially important in countries like the US that are dog rabies free,” he says. “People forget that rabies is still a possibility, and it can be missed.”

In addition to these courses, GARC has a wealth of free resources, including a World Rabies Day social media toolkit and posters, videos, and factsheets aimed at increasing rabies awareness at the community level. You can even check out what people around the world are doing on World Rabies Day and register an event of your own.

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Sarah Mouton Dowdy, a former associate content specialist for dvm360.com, is a freelance writer and editor in Kansas City, Missouri.

REFERENCES
Take control of patient protection with a once-a-year injectable

Does your practice have the power to combat a silent but deadly disease?

By Emily Shiver, CVPM, CCFP, CVBL

BUSY LIVES, PET RESISTANCE, AND FORGETFULNESS are among the top reasons given by clients who have the best of intentions yet often fail to comply with veterinary recommendations about parasite protection.

Your practice has the power to achieve 100% preventative compliance with a once-a-year injectable like ProHeart® 12 (moxidectin). With a year-round offering, clients no longer have to worry about monthly visits to pick up a dose, or missed doses, yet their canine companions will be protected for an entire year.

You may be thinking that taking away the need for clients to pick up a heartworm disease preventive each month may reduce client visits and, as a result, potentially reduce retail profits. As client compliance typically averages around 30%, a quick crunch of the numbers reveals that the benefits of year-round compliance far outweigh this concern. You don’t need to obsess over the client visiting the practice every month. Instead, aim for the goal of protecting the 70% of dogs that are not receiving any prevention. It’s a win-win for both parties. The client has protected their dog for 12 months even before setting foot outside your practice, and, in turn, they aren’t stopping by your practice taking up valuable staff time, asking them to order their prevention online or administer their purchased doses every month. Your practice then realizes the revenue that would otherwise never have been seen.

TEAM BUY-IN

By training the members of your team to see ProHeart 12 as a valuable service, they are not only educating the client on the benefits of a once-a-year preventive, but also ensuring compliance and healthier outcomes.

IMPLEMENTATION TIPS

Your team will be on board for this, and successful implementation can be accomplished using these tools:

• Reference guides: Provide quick reference guides on pricing. These guides need to include comparisons of popular heartworm preventives both stocked in-house and online (don’t forget the Zoets rebates).

• Team challenge: One of my favorite ways to implement new ideas or products is with team challenges. A little healthy competition is good for everyone!
  – Run the challenge for 90 days. We can do anything for 30 days, but it becomes a habit after 90 days.
  – Think outside the box. Your team may be used to lunches and Yeti cups as coveted prizes. Add new perks to show that the profits from ProHeart 12 can also offer added value for them, while meeting everyone’s goal of protected patients. Some fresh ideas would be profit sharing, extra continuing education opportunities, or tuition reimbursement.

PRICING TO MAXIMIZE PROFITS

It is time to rethink the standard percentage markup across the board and move toward margin pricing. Commonly, the preventives that adorn your shelves are sold in single doses, and in 6- and 12-month supplies. They are probably marked up by a percentage based on the quantity of months sold. This is a standard industry pricing strategy, but ProHeart 12 (moxidectin) can make way for a new pricing strategy. Margin pricing allows you to create a target price based on weight ranges, which keeps ProHeart 12 affordable. If you shift your thinking from ProHeart 12 being a product to being a service, it should be priced and treated as such. You’re no longer buying a product to mark up and resell. Instead, you’re providing a convenient, affordable service for your clients.

Clients may be more price-savvy than ever before, with pricing available to them through online giants offering free shipping and coupons, but by following some simple steps to achieve the right pricing structure, you can come in well below the online retailers, while securing a healthy profit for your practice.

Step 1: Create weight ranges

• 0-25 lb
• 26.1-50 lb
• 50.1-75 lb
• 75.1-100 lb
• 100.1 and up

Step 2: Prepare to implement

• Compare prices on your current preventives with those of popular online pharmacies.
• Determine your target price and desired profit.

Step 3: Train the team

• Train and educate your staff so that they are comfortable with explaining the pricing structure and benefits to clients.

The result? Heartworm prevention for which you’ve been profiling 75% or less can now easily and significantly increase your profits.

MAINTAIN PHARMACY REVENUE

Times have changed, and some of your pharmacy revenue may have decreased over the years. We have all tried to think up ways to keep pharmacy revenue within the walls of our practice while maintaining a strong bond with our clients. Even with our best efforts it can still turn sour if you are declining prescription requests or charging to approve a prescription request. Time to pivot! Evaluate and provide what your clients expect: easy, convenient, affordable care and services.

ProHeart 12 checks all of those boxes and can change the landscape of your current pharmacy and client woes.

DECREASE THE PHYSICAL AND FINANCIAL FOOTPRINT

When was the last time you evaluated the footprint of the heartworm disease preventives currently on the shelf or shoved in random cabinets and drawers? It may be time.

First, footprint isn’t just about space, it’s financial as well. Profitability should be considered when you are streamlining the products you stock. Are you considering the profitability of your current stock of heartworm disease prevention, along with the time it takes the team to manage it? Putting in the effort to run the numbers so that you can effectively reorganize your heartworm disease preventives will help your practice soar to financial pharmacy success. A good starting point would be bringing in ProHeart 12 (moxidectin) and moving out the products that end up expiring before you finish a carton. Plus, there are added benefits your clients don’t think of until it is time to shove a pill down their pet’s throat or realize that they forgot last month. Pair this with pricing strategies that are not only favorable to the practice but also the client, and this can strengthen the bond you try so hard to keep with your clients.

A CHANGE WORTH ITS WEIGHT IN GOLD

Although change can be difficult, don’t let the fear of change stop you from doing something great for your practice, your team, your clients and, most importantly, their canine companions. After all, increased compliance, boosted revenue for your practice, and healthier pets are what your team shows up for every day.

IMPORTANT SAFETY INFORMATION: Use PROHEART 12 in dogs 12 months of age or older. Do not administer to dogs that are sick, debilitated, underweight, have a history of weight loss, or to those previously found to be hypersensitive to the drug. Hypersensitivity reactions may occur in some dogs when PROHEART 12 is administered alone or with vaccines. Anaphylactic and anaphylactoid reactions can result in death and should be treated immediately with the same measures used to treat hypersensitivity reactions to vaccines and other injectable products. Reported side effects in clinical trials included vomiting, lethargy, diarrhea, anorexia, and hypersensitivity reactions. People should avoid inhalation, contact with eyes, or accidental self-injection. Certification is required before veterinarians and staff administer these products. See brief summary of Prescribing Information on next page.

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ProHeart® 12 (moxidectin) for Extended-Release Injectable Suspension for Dogs

ADVERSE REACTIONS

A well-controlled field study was conducted, including a total of 593 dogs (297 received two doses of ProHeart 12, 12 months apart and 296 received a monthly oral heartworm preventive as a single dose from 1 to 14 years. Over the 605-day study period, all observations of potential adverse reactions were recorded.

Table 2: Number of Dogs* with Adverse Reactions Reported During the ProHeart 12 Field Study

<table>
<thead>
<tr>
<th>Adverse Reaction</th>
<th>ProHeart® 12</th>
<th>Active Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=297 (%)</td>
<td>n=296 (%)</td>
<td></td>
</tr>
<tr>
<td>Vomiting</td>
<td>75 (25.3)</td>
<td>78 (26.4)</td>
</tr>
<tr>
<td>Lethargy</td>
<td>46 (15.5)</td>
<td>34 (11.5)</td>
</tr>
<tr>
<td>Diarrhea (with and without blood)</td>
<td>43 (14.5)</td>
<td>46 (15.5)</td>
</tr>
<tr>
<td>Anorexia</td>
<td>41 (13.8)</td>
<td>31 (10.5)</td>
</tr>
<tr>
<td>Seizures</td>
<td>10 (3.4)</td>
<td>7 (2.4)</td>
</tr>
<tr>
<td>Hepatopathy</td>
<td>8 (2.7)</td>
<td>3 (1.0)</td>
</tr>
<tr>
<td>Hypersalivation</td>
<td>7 (2.4)</td>
<td>3 (1.0)</td>
</tr>
<tr>
<td>Anaphylactoid/Hypersensitivity Reactions</td>
<td>6 (2.0)</td>
<td>4 (1.4)</td>
</tr>
</tbody>
</table>

*Some dogs may have experienced more than one adverse reaction or more than one occurrence of the same adverse reaction during the study.

HUMAN WARNINGS

Not for human use. Keep this and all drugs out of the reach of children. If contact with skin occurs, wash thoroughly with water. May be irritating to the eyes. If product accidentally gets into your eyes, flush eyes thoroughly with water. In case of accidental ingestion, or if skin or eye irritation occurs, contact a Poison Control Center or physician for treatment advice and show the package insert to the physician.

Take care to avoid accidental self-injection. In case of accidental self-injection, seek medical advice and show the package insert or the label to the physician. The Safety Data Sheet (SDS) contains more detailed occupational safety information.

WARNINGS

Anaphylactic and anaphylactoid reactions may occur in some dogs following administration of ProHeart 12 alone or with vaccines. In some cases, these reactions have resulted in death following administration of moxidectin microspheres (see POST-APPROVAL EXPERIENCE). Anaphylactic and anaphylactoid reactions should be treated immediately with the same measures used to treat hypersensitivity reactions to vaccines and other injectable products.

Always provide Client Information Sheet and review with owners before administering ProHeart 12. The owner should be advised to observe their dog for adverse drug events and report them to the veterinarian. The Safety Data Sheet (SDS) contains more detailed occupational safety information.

INFORMATION FOR DOG OWNERS

For a copy of the Safety Data Sheet (SDS) or to report suspected adverse reactions, contact Zoetis at 1-888-963-8471. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or http://www.fda.gov/AnimalVeterinary/SafetyHealth.

Two ProHeart 12 (moxidectin) - treated dogs experienced anaphylactoid/hypersensitivity-related clinical signs within the first 24 hours following the initial treatment. Both dogs responded to symptomatic treatment. One dog experienced hives and facial swelling that resolved in 24 hours. The second dog experienced redness and swelling of the face and paws, followed by vomiting, polydipsia, and elevated heart rate and was treated symptomatically.

Some dogs may have experienced more than one adverse reaction or more than one occurrence of the same adverse reaction during the study.
An old gas station—a mere 800 square feet—housed the original Deer Park Animal Hospital in Deer Park, Texas. Dale Lonsford, DVM, joined this mixed-animal practice in its early days, around 1978. The practice called this tiny place its home until 1986, when Lonsford bought it as well as another practice. He moved into the second practice, which was 3500 sq ft, and combined the 2 clinics, focusing mostly on small animals at that time.

That space served him well until 2005, when he moved the practice to a 4500-sq-ft print shop that he remodeled into a more spacious veterinary hospital. In 2012, Charmel Rodick, DVM, CVPM—Lonsford’s daughter—joined her father as co-owner after practicing elsewhere for 10 years. By this time, the practice was growing by leaps and bounds, and it soon became evident that a bigger space was needed again. “And this time, we knew exactly what we wanted,” Lonsford says.

A clear plan with detailed objectives drove the design for the latest incarnation of Deer Park Animal Hospital, which earned a Merit Award in the 2020 dvm360® Hospital Design Competition. Best of all, because the hospital finally has the design and space it so desperately needed, Lonsford doesn’t think another build will be necessary for a long, long time.

Veterinary hospital design honed by experience

Nearly 40 years of practice ownership gave this veterinarian a clear picture of what he wanted in his brand-new facility.

By Sarah A. Moser

Wish list granted

Must-have amenities in the new facility are best categorized under 4 purposes: patient care and comfort; client convenience and appreciation; clinical efficiency; and staff comfort and pride in their workplace. The doctors at the practice came prepared with a detailed list of everything they wanted the hospital to include, and this list shaped the overall design of the hospital. A few of the top requested features were:
A circular reception desk greets clients upon entry, encouraging a smooth traffic flow from intake to discharge. Four receptionists can sit at the counter at once to manage check-in, medication pickups, boarding admissions, and patient discharge. A lightly textured porcelain tile floor helps pets find their footing. The lobby is decorated in warm earth tones and features a children’s nook (inset) with seating, videos, and a craft area, as well as a refreshment counter with coffee, chilled bottled water, and packaged treats.

The hospital has 6 exam rooms, 3 of which are larger with lift tables for dogs. All exam rooms have background music, the doors have windows, and the rooms have supplemental exhaust ventilation to use as needed. To put all the focus on clients and pets, there are no computers in the exam rooms. Instead, doctors and staff access records and make notes at the many workstations in the hallway, treatment area, and doctors’ offices.

As a certified Fear Free feline facility, the hospital includes a few cat-specific features, including a private cats-only waiting area (shown here), separate cat exam rooms, and a feline boarding area separated from dog noises and smells.

The spacious treatment area features 6 treatment tables (2 wet, 2 wet exam, and 2 countertop exam) with built-in electrical outlets, drawers, and cabinets. An open above storage equipment on rollers, making it easy to roll items in and out of the way as needed. In-house laboratory equipment is housed along 1 wall of the treatment area, and 7 computer workstations line another wall.

Computer workstations are plentiful at Deer Park Animal Hospital, with 6 in the hallway adjacent to the exam rooms, 2 in the telephone room, 4 along the circular reception counter, 2 in the boarding areas, 1 in the grooming area, 1 in the administrative office used by the hospital manager and procurement technician, and 1 in each of the owners’ and associates’ offices (shown here).

A large viewable kennel area adjacent to the treatment suite gives staff easy access to pets that are hospitalized for the day. Fifteen stainless-steel compartments and 2 runs viewable behind glass windows with a large sliding-glass door house hospitalized patients.

As a certified Fear Free feline facility, the hospital includes a few cat specific features, including a private cats-only waiting area (shown here), separate cat exam rooms, and a feline boarding area separated from dog noises and smells.
• An entry vestibule to keep the lobby cool and cut down on air-conditioning costs
• An employee lounge with windows
• An exotics ward and a hospital ward
• An intensive care unit suite adjoining the treatment area with a glass-paned door and windows to better monitor patients. “My first impression of this design element was that it would be noisy, but we like it and it better allows us to keep an eye on patients hospitalized for the day,” Dr. Lonsford says.
• At least 6 exam rooms, plus 1 for comfort and consultation. Three of those rooms include a lift table for handling larger dogs.
• A special procedures room for performing endoscopy, ultrasound, and more. “Our biggest use of this space is for animals that are disagreeable, because we can take them into a…quieter room with subdued lighting,” says Lonsford. “Also, the female doctors wanted this space for nursing or pumping for their babies, because the room has no windows [but has] subdued lighting and locks for privacy.”
• A “beachfront” recovery area in the treatment room, which allows postsurgical patients to lie on the floor within easy reach of staff for monitoring. “The architect recommended putting a glass barrier around the area as well as glass walls that come up 3 feet so we can easily look over and check our patients, who rest on baby mattresses,” Lonsford explains.
• Storage space for anesthetic, dental, ultrasound, and laser equipment. “Basically, I wanted a parking space for all the equipment so it can be pushed out of the way when not needed,” he says. “We have all the equipment on casters and push it into an open area in the treatment room when we need it.”

Overcoming obstacles
A clear design plan didn’t safeguard Deer Park Animal Hospital against a handful of challenges along the way. Lonsford offers this piece of advice: “When the city says they have utilities at the location where you plan to build, verify that they mean all utilities,” he says. In his case, the city meant that water and sewer lines were available, but not gas, telephone, or electricity, and that created an expensive and time-consuming challenge.

The detention ponds on the property also caused some trouble. “When I bought the land, I thought an acre would be plenty—it’s double what we had before—but it gets eaten up quickly when you add in drainage,” he says. The design called for a pond both in the front and back of the practice, cutting into space Lonsford had hoped to use for parking. He is now looking to buy some land adjacent to the practice to add more parking spots.

Lastly, it took more than 3 months after they moved in to get the fiber optic cable wired to the practice and connected to the system. “Some utility companies move on their own schedule, and there was nothing I could do about this issue,” he says.

Challenge yourself
In 2015, Lonsford learned this key piece of advice at a veterinary conference: One way to figure out how big your hospital should be is to build so that your mortgage will cost you about 7% of your gross income. But you also need to factor in growth that will come with a new practice, so he was advised to build to 10% to 15% of his gross income to start with, assuming that within 5 years of growth that number would come back down to 7%.

“That guideline helped us feel comfortable with the size we needed and our anticipated growth. Sure enough, we are right about 9% of gross income right now, a year into owning the practice,” he says. “I’m very pleased with how this worked out for us. Those numbers challenged us a bit, but it was doable. If it’s not challenging you a bit, you probably built too small; if it’s becoming a huge burden, you probably built too big. We think we built just right.”

Sarah A. Moser is a freelance writer in Lenexa, Kansas.

By the numbers:
Deer Park Animal Hospital, Deer Park, TX
Owners: Dale Lonsford, DVM, and Charmel Rodick, DVM, CVPM
Number of doctors: 4 full-time, 2 part-time
Exam rooms: 7
Total cost: $1,906,532
Cost per square foot: $218.01
Square footage: 8745
Structure type: New, freestanding
Architect: BDA Architecture, Albuquerque, NM

A large consultation and comfort room features shaded exterior windows and allows for privacy when meeting with clients or when clients visit their noninfectious hospitalized pets. The room can double as an extra exam room when needed.

Lonsford chose to include 4 large luxury runs with full-glass front panels and glass doors. The remaining runs are 6 ft long and also have clear door panels. The boarding area also features stacked 4 x 4-ft runs for smaller pets. The flooring is epoxy with a slight texture to make it easier for pets to find traction.

The employee lounge has 2 windows, a large conference table, refrigerator, dishwasher, microwave, and employee lockers—a big improvement over the lounge at the previous facility.

A large consultation and comfort room features shaded exterior windows and allows for privacy when meeting with clients or when clients visit their noninfectious hospitalized pets. The room can double as an extra exam room when needed.
During COVID-19, the practice has been following what they call the “big 4” rules: curbside visits, strict hygiene, social distancing as much as possible, and masks at all times.

Lucille asked Richard for some direction concerning the negative feedback she was receiving from some staff members. He understood why some employees might feel this was an invasion of their privacy, and he agreed that what they did during their nonworking hours was their personal business. However, he also believed the pandemic required extraordinary precautions. If a staff member were participating in what he considered risky behavior while outside of work, he would have to make a decision based on the well-being of the practice. After all, he reasoned, a single COVID-19–positive staff member could bring all practice activity to a halt. As the sole practice owner, Richard was determined to see that no one endangered the health and well-being of his staff.

If he determined that a team member was not abiding by accepted medical community safety standards, that person would be required to take paid leave, be tested for COVID, and agree to adhere to mask wearing, social distancing, and hand washing while away from the workplace. If anyone felt that these requirements were an invasion of their privacy and personal space, they would have to part ways with the practice. Despite the resentment of several staff members for being treated “like children,” most agreed to Richard’s requirements. One staff member chose to leave the practice.

Rosenberg’s response
Richard had to take a stand. COVID-19 prevention rules differ not only from state to state, but also from county to county. If staff members began to fall ill, he had neither a realistic nor remote treatment option for his patients. Regardless of the circumstances, veterinarians have to physically see and touch their patients to provide quality medical care. As the practice owner, Richard determined that the buck stops with him. He was responsible for the health and welfare of his staff, as well as the continued viability of his practice. Until the pandemic subsides, this practice owner was right to take extreme caution in the day-to-day management of the clinic, even if it meant offending some short-sighted staff members in the process.

Marc Rosenberg, VMD, is director of the Voorhees Veterinary Center in Voorhees, New Jersey. Although many of the scenarios Rosenberg describes in his column are based on real-life events, the veterinary practices, doctors, and employees described are fictional.

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Were Richard’s rules too harsh? Was he treating his staff unfairly? We would like to know what you think. Email us your thoughts at dvm360news@mmhgroup.com.
**Your go-to for fighting *Pseudomonas* ear infections**

**ENROFLOXACIN**
- Attacks on the inside
- Destroys bacterial DNA
- Effective against Gram (+) cocci and Gram (−) rods

**SILVER SULFADIAZINE**
- Attacks on the outside
- Breaks down cell walls/membranes
- Effective against Gram (+) cocci, Gram (−) rods and budding yeast

Only Baytril® Otic (enrofloxacin/silver sulfadiazine) Emulsion fights *Pseudomonas* with two mechanisms of action. **Stock Baytril® Otic** for your toughest otitis externa cases.

**CAUTION:** Available only from a licensed veterinarian. Federal law prohibits the extra-label use of this drug in food-producing animals.

**PRECAUTIONS:** The safe use of Baytril® Otic in dogs used for breeding purposes, during pregnancy, or in lactating bitches has not been evaluated. The use of Baytril® Otic in dogs with perforated tympanic membranes has not been evaluated. Therefore, the integrity of the tympanic membrane should be evaluated before administering this product. If hearing or vestibular dysfunction is noted during the course of treatment, discontinue use of Baytril® Otic. **CONTRAINDICATIONS:** Baytril® Otic is contraindicated in dogs with suspected or known hypersensitivity to quinolones and/or sulfonamides.

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Baytril® Otic
(ENRIOXACIN/SILVER SULFADIAZINE)
ANTIBACTERIAL-ANTIMYCOTIC EMULSION
FOR OTITIC USE IN DOGS

In clinical field trials, Baytril® Otic demonstrated elimination or reduction of clinical signs associated with microbial diseases of the external auditory canal. 

MICROBIOLOGY:
The quinolones are a class of antibacterials which are highly active against a wide range of Gram-negative and Gram-positive bacteria as well as against some fungi and some anaerobic bacteria. They work by inhibiting the bacterium’s ability to replicate its DNA, which is essential for cell division.

ACTIONS:
Baytril® Otic (enrofloxacin/silver sulfadiazine) is a topical systemically administered antibiotic. The effectiveness of Baytril® Otic was evaluated in a controlled, double-blind, multi-site clinical trial. One hundred and sixty-nine dogs (n=169), with naturally occurring otitis externa participated in the study. The presence of active disease was verified by aural cytology, microscopic culture and otoscopic examination.

INDICATIONS:
Baytril® Otic is indicated as a treatment for canine otitis externa complicated by bacterial and fungal organisms susceptible to enrofloxacin and/or silver sulfadiazine (see Microbiology section).

EFFECTIVENESS:
Due to its combination of active ingredients, Baytril® Otic provides antimicrobial therapy against bacteria and fungi (which includes yeast) commonly encountered in cases of otitis externa.

The effectiveness of Baytril® Otic was evaluated in a controlled, double-blind, multi-site clinical trial. One hundred and sixty-nine dogs (n=169), with naturally occurring active otitis externa participated in the study. The presence of active disease was verified by aural cytology, microscopic culture and otoscopic examination. Qualified cases were randomly assigned to either Baytril® Otic treatment (n=113) or to a comparable placebo-based regimen (n=56). Treatments were administered twice daily for up to 14 days. Assessment of effectiveness was based on the resolution of clinical signs in 3-4 days following administration of the last dose.

At study conclusion, Baytril® Otic was found to be a significantly more effective treatment for canine otitis externa than the placebo regimen. Based on the same system used to assess treatment response, therapeutic success occurred in 67% of Baytril® Otic-treated infections compared to 14% with placebo (p-value 0.001) after 14 days of treatment.

CONTRAINDICATIONS:
Baytril® Otic is contraindicated in dogs with suspected or known hypersensitivity to quinolones and/or sulfonamides.

HUMAN WARNINGS:
For animal use only. Keep out of the reach of children. Aupix contact with eyes. In case of contact, immediately flush with copious amounts of water for 15 minutes. In case of dermal contact, wash with soap and water. Consult a physician if irritation develops or persists following ocular or dermal exposure. Individuals with a history of hypersensitivity to quinolones or sulfonamides should avoid handling this product. Human use is a risk of systemic photo-sensitization within a few hours after excessive exposure to sunlight. If excessive accidental exposure occurs, avoid direct sunlight.

PRECAUTIONS:
The use of Baytril® Otic in dogs with perforated tympanic membranes has not been evaluated. Therefore, the safety of the tympanic membrane should be evaluated before administering the product. If perforation or vestibular dysfunction is noted during the course of treatment, discontinue use of Baytril® Otic.

Susceptibility of quinolone class drugs has been associated with carriage reactions in weight-bearing joints and other forms of arthritis in immunocompromised animals of various species. The safe use of Baytril® Otic is in dogs used for breeding purposes, during pregnancy, or in lactating bitches, has not been evaluated.

ADVERSE REACTIONS:
During clinical trials, 2 of 113 (1.7%) dogs exhibited reactions that may have resulted from treatment with Baytril® Otic. Both cases displayed local hypersensitivity reactions of the external ear canal and perineum. For medical emergencies or to report adverse reactions, call 1-800-422-9874. For customer service or to obtain product information, including Material Safety Data Sheet, call 1-800-633-3796.

SAFETY:
General Safety Study:
In a target animal safety study, Baytril® Otic was administered in both ears of 24 clinically normal beagle dogs at either recommended or exaggerated dosage: 10, 30 or 50 drops applied twice daily for 24 consecutive days. A control group of 8 beagle dogs was treated by administering 50 drops of vehicle in one ear twice daily for 24 consecutive days, with the contralateral ear untreated. Erythema was noted in all groups, including both treated and untreated ears in the control, which resulted following termination of treatment.

Oral Safety Study:
In order to test safety in case of ingestion, Baytril® Otic was administered, twice daily for 14 consecutive days, to the dorsum of the tongue and to the left buccal mucosa of 6 clinically normal dogs. No adverse local or systemic reactions were reported.

DOSAGE AND ADMINISTRATION:
Shake well before each use.

Tilt head so that the affected ear is presented in an upward orientation. Administer a sufficient quantity of Baytril® Otic to the ear canal at the dorsal auricular surface of the ear. A single droplet of Baytril® Otic is sufficient for the external ear canal of a small dog. For large dogs, administer 1-2 drops per treatment in dogs weighing 20 lb. or less and 2-3 drops per treatment in dogs weighing more than 20 lb. Following treatment, gently massage the ear canal to ensure complete and uniform distribution of the medication throughout the external ear canal. Apply twice daily for a duration of up to 14 days.

STORAGE:
Store between 4°C and 25°C (39°F - 77°F). Store in a cool, dry place. Do not store in direct sunlight.

HOW SUPPLIED:
Baytril® Otic is supplied in sterile single-dose vials of 5 mL.

References:
Understanding damages in veterinary employment contracts

Before you sign that shiny new contract, make sure you understand all of its provisions.

One of the many reasons veterinarians choose to have a lawyer review their employment contracts prior to signing is that these agreements often are chock full of legalese. And while the terminology and provisions in veterinary employment contracts are largely standard, and the practice has no intention of fooling the associate, it can be risky to ignore legal wording you do not understand. I advise veterinarians not to sign any type of contract (employment, partnership, leasehold) that contains hard-to-follow terminology unless they fully understand the provisions.

This is particularly sound advice when it comes to agreements that provide for the assessment of specific consequences for failing to adhere to stated obligations (known as “breach of contract”). These consequences, or “damages,” appear in all sorts of contracts, from employment agreements and mortgages to buy-in offers and clinic sale documents.

‘Damages’ defined

Simply stated, damages in a contract law are the amount of money the losing party in a contract dispute is obligated to pay if a breach has been committed. When an agreement between 2 parties contains a specific “price to pay” if one of those parties does not follow through on their end of the deal, the law recognizes the potential for unfairness and will proceed on deciding consequences.

Bad things can happen when contracting parties decide their own penalties in the event of a breach.

Consider a provision in an associate employment contract that provides for a $10,000 signing bonus. The contract specifies that if the associate stays for less than 1 year, the bonus must be repaid to the employer on a pro-rata basis. This doesn’t sound unreasonable, or difficult to calculate. The language looks, smells, and tastes like damages, a fair price to be exacted from the breaching party to compensate the aggrieved side.

Now consider this contractual noncompetition prohibition term: “If, within 2 years of leaving employment, associate provides veterinary services anywhere within 5 miles of employer’s clinic, the associate will pay to employer the sum of $200,000.” Is this a fair provision, a reasonable pecuniary figure? Or is it just a heavy hammer to pound the associate in the event of an alleged breach?

Many courts consider these types of stipulated damages not to be damages at all, but rather a penalty. And the law generally prefers penalties to be inflicted by the government, not by private individuals or companies.

Contract lawyers understand this dichotomy of terminology and often draft contracts with provisions that would normally be considered a penalty but include this additional sentence: “Parties agree that the amount of $200,000 is reasonable and agreed upon liquidated damages for a violation of this noncompetition term and as such it does not constitute a ‘penalty.’”

Nice try. But plenty of courts ignore that categorization, electing instead to decide for themselves whether a “damages” term indeed actually amounts to a penalty. Generally, the more unduly onerous the “damages,” the more likely they are to be deemed not legally enforceable.

Damages vs ‘liquidated damages’

As noted earlier, damages are the money the losing party in a contract dispute must pay if a breach has occurred. Like the alleged breach itself, the amount and/or mathematical formula for the calculation of damages typically must be pleaded and proven in court. It is a question for the judge or jury: “How much, in dollars, did the breach actually hurt the aggrieved side?”

“Liquidated damages” set forth in a contract represent an effort to sidestep the judicial determination of appropriate compensatory damages by setting forth an amount (or a formula for calculating reasonable damages) that both parties agree is fair. In court, assuming the “price” set for a breach manages to overcome the hurdle of being categorized as a penalty, there is still no guarantee that the specified liquidated damages amount will be accepted by a judge. If the amount set forth as liquidated damages appears unreasonable—even confiscatory—judges often can and will do look past the “agreed damages” and make an effort to determine the actual injury to the aggrieved party. Liquidated damages are not popular in American jurisprudence, as they are often seen as an effort to make an end-run around both the typical requirement to prove damages and the option of a court to determine what is fair.

Liquidated damages in employment contracts are not as common as they once were. Both the attorneys who draft employment agreements and employment law litigators know that judges commonly look dubiously at this sort of provision.

Most attorneys who do draft such terms into their employment agreements try to make the liquidated amount as close to fair as possible. They know that straying into ridiculous amounts is an invitation to have the language stricken or “reconfigured” by a court if the agreement is challenged.

Some attorneys (and quite a few individual veterinary practice owners) employ liquidated damages clauses because they tend to instill fear in the associate. Many new hires will sign any employment contract containing a stratospheric liquidated damages term, assuming that they will have no plans to ever challenge it—especially if they see the job as short-term.

Later on, however, when local relationships develop and that veterinarian becomes part of the community, the noncompete may get a closer look. At that point, the duration or distance may finally be recognized as excessive or overly broad.

The associate might be willing to go to court and challenge the noncompete, if the damages determination has to be pleaded and proven by the employer. Even so, if the liquidated damages clause specifies 3 years’ gross salary of the associate as the price for violating the noncompete, that same associate might be scared away from litigating. They could easily become worried that doing so could trigger the huge pecuniary damages set out in the employment contract.
A new study connects disease risk for joint disorders, cancers, urinary incontinence, and pyometra with reproductive status and sterilization timing in different canine breeds and both sexes.

By Joan Capuzzi, VMD

Recent research links sterilization in some dog breeds with various maladies. One study of over 40,000 dogs found that neutered males and females were more likely to die of cancer than those left intact.\(^1\) Another highlighted the absence of estrogen in spayed females as an accelerator for brain aging.\(^2\) In dachshunds, neutering was reported to be a risk factor for intervertebral disk disease (IVDD).\(^3\) All-breed data to be a risk factor for intervertebral disk disease (IVDD).\(^3\) All-breed data revealed higher rates of hip dysplasia and cranial cruciate ligament tears in neutered than intact males and females.\(^4\) Focusing specifically on golden retrievers, Labrador retrievers, and German shepherds, studies have demonstrated an increased incidence of 1 or more joint disorders in dogs neutered before 1 year of age, which is 2- to 4-fold higher than in intact dogs.\(^5\) Spaying appeared to increase cancer risk significantly.

**Probing perils**

The aim of the present study\(^6\) was to expand this database by an additional 32 canine breeds (including 3 varieties of poodle). Using retrospective data from medical records at the William R. Pritchard Veterinary Medical Teaching Hospital at the University of California, Davis, investigators tracked 3 joint disorders (hip dysplasia, elbow dysplasia, and cranial cruciate ligament rupture) and several cancers (lymphoma, mast cell tumor, hemangiosarcoma, and osteosarcoma). They also looked at mammary cancer, pyometra, and urinary incontinence in female dogs, as well as IVDD in Welsh corgis (Pembroke and Cardigan) and dachshunds.

Disease rates were recorded for intact subjects and for those neutered within each of the following age periods: less than 6 months of age, 6 to 11 months, 12 to 24 months, and 2 to 8 years. Diseases were tracked until dogs were 12 years of age or were last seen at the hospital, whichever came later.

The researchers then incorporated these data into guidelines for neutering decisions that minimize disease risk. For almost 40% of the breeds studied, sterilization did not appear to increase the risk for cancer or joint disease; the study authors concluded that owners wishing to neuter individuals of the following breeds should decide for themselves on the appropriate age to do so:

- Cavalier King Charles spaniel
- Chihuahua
- Dachshund
- English bulldog
- Great Dane
- Jack Russell terrier
- Maltese
- Miniature schnauzer
- Pomeranian
- Toy poodle
- Pug
- West Highland white terrier
- Yorkshire terrier

**All in the breeding**

For a number of breeds, and particularly for small breeds, neuter age did not appear to impact the risk for joint disorders or cancers. But for 3 of the largest breeds—German shepherds, rottweilers, and Labrador retrievers—the investigators extrapolated their findings into a concise admonition: Sterilize males and females late. Waiting beyond 6 to 12 months of age in rottweilers and Labrador retrievers, and at least 2 years in German shepherds, cut the risk for the joint disorders studied. In male beagles, golden retrievers, and miniature poodles, the risk for joint disorders was reduced by delaying neutering until at least 1 year of age, and 2 years in Bernese mountain dogs. For female cohorts, sterilization age did not impact the risk for joint disease. However, for female Australian cattle dogs and Saint Bernards, the chance of joint problems was significantly lowered by waiting until at least 6 months of age to spay.

When it comes to cancer, the results were similarly breed-centric. The 2 breeds for which both males and females demonstrated vulnerability were the border collie and the boxer. In boxers, spaying before age 2 increased cancer risk from 11% (intact females) to 20%; for males, the corresponding risk increased from 17% (intact males) to 32%. Both sexes carry the recommendation to delay sterilization until after age 2. For border collies, cancer prevalence dropped in both genders when sterilization was delayed past 1 year of age.

For males alone, delaying neutering apparently cut cancer risk in Boston terriers, golden retrievers, Irish wolfhounds, and standard poodles. For females, collies and shih tzus seemed to benefit similarly from deferred spaying. Surprisingly, female golden retrievers experienced significantly lower cancer rates when left intact.

Looking specifically at mammary cancer, however, Welsh corgis and rottweilers left intact were at particularly high risk (>8%). But in other breeds, spaying during certain age intervals—6 to 11 months, for example—wrought a greater likelihood of mammary cancer than not spaying at all.

In several breeds, the reproductive tract was shown to be something of a menace. Left intact, female Saint Bernards, rottweilers, and Shetland sheepdogs were heavily (>12%) plagued by pyometra.

Perhaps nowhere is the horse-power of hormones more evident than for urinary incontinence, which is often associated with estrogen loss from spaying. The investigators found that, for certain breeds, spay timing can impact this risk. In the Shetland sheepdog, for example, one-third of dogs spayed at age 1 year experienced urinary incontinence (hence the directive to delay spaying these dogs past 2 years of age). Similarly, the authors advocate postponing spay surgery until age 2 in German shepherds and until after 1 year in collies, English springer spaniels, and West Highland white terriers.

The investigators also looked at IVDD in the chondrodystrophic breeds. For dachshunds, altering did not increase IVDD occurrence in males or females. In corgis, there was also no increase with spaying females. But for males neutered before 6 months of age, the rate skyrocketed from 3% to 18%.

Understanding hormone play

This study illustrates the breed differences and gender impact with regard to cancer and joint disorders, pyometra, and urinary incontinence associated with altering at various ages. This information can be used by dog owners and their veterinarians to earmark ideal sterilization ages for their companion dogs.

The mechanism by which early sterilizing may precipitate joint problems
likely is the disruption of long bone growth plate closure by gonadal hormone secretion in maturing juveniles. The authors conclude that this continued growth enables the bones to reach greater length, which may disturb joint alignment.

For joint maladies, body size appears to impact vulnerability. Small-breed dogs, such as Yorkshire terriers, Pomeranians, Chihuahuas, and toy poodles, rarely experience joint problems, nor do they manifest neutering-related increases in joint disorders compared with larger breeds. Small breeds are also somewhat spared of cancer, whether intact or sterilized.

When looking at cancers, the results of this study may not reflect actual neutering-related risk. Cancers generally occur in later life stages, but the number of dogs in this study over age 8 was small; in fact, the mean age of last hospital record entry was 4.5 to 5.5 years. For mammary cancer, in particular, the mean age at last hospital visit fell short of the late-onset mean age for mammary cancer in intact females. Hence, the low occurrence of mammary cancer in intact females studied herein may not reflect actual lifetime incidence.

Another limitation of the study is that it incorporates relatively few of the recognized registered breeds. Those included were chosen either because they were the most popular—providing a data set of 200 to 500 cases, sufficient for statistical analysis—or because they enabled sampling of the largest range of breed sizes.

Although the study substantiates the variable impact of hormones on several disease processes in different breeds of dogs, it concludes that for many of the breeds studied, sterilization can be done at any age without affecting risk for joint diseases and cancer. dvm360

Joan Capuzzi, VMD, is a small animal veterinarian and journalist based in the Philadelphia area.

REFERENCES
MEDICINE | Pain management

There's no place like home for spotting musculoskeletal pain in cats

The Feline Musculoskeletal Pain Index recognizes that your clients are in the best position to notice when their pet is impaired and provides a way to put their expertise to use in the exam room.

By Elizabeth Colleran, DVM, DABVP (feline practice)

Cats are hard to read, and there’s a biological reason for that. As solitary hunters, these independent creatures have no need to be outwardly demonstrative. (Dogs, on the other hand, are clear about their status and needs because communication between members of the pack is critical.)

The reason cats meow at people and rarely at each other is that humans are poor observers of the methods cats typically use to communicate. We tend to ignore their visual and olfactory cues and respond largely to sounds. The resulting problem is twofold: We have a creature who doesn’t need to provide minute-by-minute status updates and people who don’t pay attention.

In the veterinary setting, assessing a cat’s emotional and physical characteristics is often confounded by the stress of taking this territorial animal out of its territory and surrounding it with strangers. It can be especially challenging to assess gait and chronic musculoskeletal pain in an animal that is inclined to freeze or flee in the face of these threats.

Further complicating matters, stress masks pain in cats, and they rarely walk on command. Moreover, palpating painful joints may result in significant resistance from the cat or even injury to the person doing the assessing. Yet, we know that nearly half the species—or about 40 million cats—has some form of musculoskeletal pain in an animal that is inclined to freeze or flee in the face of these threats.

There’s no place like home

One commonly cited advantage of veterinary house calls is that cats can be observed in their own territory, meaning they are less stressed and more willing to move around.

For even better results, an invisible veterinarian who could observe the cat unseen would be ideal. With this in mind, veterinary pain specialists, feline ethologists, and behavior specialists joined forces to create the Feline Musculoskeletal Pain Index (FMPI), which gives the power of observing these opaque creatures to their beloved owners.

Using language accessible to cat owners, the questionnaire asks a series of simple questions about movement, behavior, sleep, and mood. Pain associated with bones, joints, and muscles results in compensatory behavior alterations that can be seen by a caregiver who has known the cat for a period of time. A score attached to the completed form is used to evaluate the degree to which the cat has changed over time.

Power to the (cat) people

Pain assessment is a critical component of evaluating a cat’s health and quality of life, and you can make your job easier by encouraging the owners of your purring patients to partner with you on the FMPI. Generally, we know that cats are at risk for osteoarthritis at age 9, so that milestone may mark a good time to start using the assessment. Have clients visit painfreecats.org to either download the questionnaire or fill it out online so the results can be part of the physical exam.

The questionnaire can be repeated over time to assess whether the pain management modalities you’ve chosen for the patient are working. Each “score” is compared with previous ones to visualize trends, identify patterns of behavior, and improve outcomes. You may find you need to make adjustments, or you may see evidence that the plan is improving the life of the patient. Pain management plans tend to have several components, including pharmaceuticals (eg, nonsteroidal anti-inflammatory drugs, analgesics), nonpharmacological anti-inflammatory devices (eg, laser therapy, Assisi Loop), and nonpharmacological additions (eg, heat, furniture adjustment, ramps), so a reliable, verifiable, and validated survey for judging which combination of multimodal pain management is best for a particular patient is a tremendous step forward.

More to love (and learn)

Painfreecats.org has more resources that can be helpful to you and your clients. For example, an FAQ section addresses common cat owner questions (eg, “My cat is slowing down—isn’t that just old age?”) in a thoughtful way and uses language intended for public consumption. Another section of the website is intended for veterinarians and discusses the validation techniques used for the survey.

Elizabeth Colleran, DVM, DABVP (feline practice) is the owner and hospital director of 2 exclusively feline practices and is an ABVP diplomate in feline practice. Before veterinary school, she worked in sales and marketing management for IBM, where she helped Fortune 500 companies streamline internal networks. Her passions are her crazy husband, 2 equally crazy Burmese cats, bicycling, and Indian cuisine.
Checking all the boxes in veterinary wellness visits

The diagnostic power of veterinary wellness visit screenings is undeniable, but deciding what tests should be run for all your patients is daunting. Here’s a guide to doing it right.

By Michael Nappier, DVM, DABVP

Does deciding what wellness tests to run for your patients make your head spin? After all, there are so many panels to choose from, and it seems like the diagnostic labs are coming out with new tests, combinations, and specials every day. To maximize your diagnostic power during wellness visits, you need to organize your thinking on wellness testing. Here’s how.

First things first
Before you delve into the catalogs of available lab tests, bring some order to your thinking by categorizing patients according to age/life stage, lifestyle, and infectious disease risk. Start with age/development stage. Generally, this is broken into 4 or 5 categories: puppy/kitten, junior, adult, senior, and geriatric. (Some practices choose to combine puppy/kitten and junior, or senior and geriatric.)

Once you’ve organized your patients by life stage, you can categorize their other needs based on lifestyle and infectious disease risk. For example, does the dog travel frequently or does it lead a walk-around-the-block type of lifestyle? Does the cat roam the great outdoors, or does it stay in the window perch?

Once age, lifestyle, and infectious disease risk are defined, it’s time to fill in the details. First, consider how much lab work you want to do in house versus sending out. In-house diagnostics have a distinct speed advantage, but we rarely need speed when it comes to wellness testing. Sending the wellness lab work out saves technicians’ time and usually affords a greater profit margin. Once you’ve decided where you will be performing your testing, start by finding a combination panel for basic bloodwork that you feel is life stage appropriate. Then add on infectious disease testing such as tickborne disease, heartworm, feline leukemia virus/feline infectious peritonitis testing, fecal parasite screening, and others as necessary.

Putting life stage guidelines into practice
Fortunately for us, the American Animal Hospital Association (AAHA) has done much of the work of determining appropriate wellness screenings by publishing the canine and feline life stage guidelines.1 2 Easy to read and packed full of information about what to discuss with clients and what lab work to consider at each life stage, the guidelines can help you create customized wellness plans for your patients at every visit regardless of life stage.

Keep in mind that the AAHA guidelines were created to fit every practice in the United States. Of course, what is needed in one area of the country may be irrelevant and unnecessary in another. This is especially true for lab work, and most especially infectious disease testing. So, the key to using the guidelines is to customize them to your practice.

I know many of you just let out a big sigh and immediately put this project on the bottom of your mental to-do list but, trust me, it’s not that hard.

The AAHA guidelines already have it all laid out for you; all you need to do is go through the recommendations one by one and decide exactly what they mean for your practice and your patients. This is easily accomplishable in over 1 or 2 lunch meetings. Gather the doctors and technicians in a room, order lunch, and knock it out. Maybe try 1 lunch for dogs and 1 for cats.

How checklists help
At the Small Animal Community Practice at the Virginia-Maryland College of Veterinary Medicine, that’s pretty much what we did. We prepared for the meetings by having 1 person create an initial rough draft based on the guidelines, which we then went over as a group point by point for each of the life stages. But we didn’t stop there. It’s difficult to remember the many things that need to be accomplished during a wellness visit. To ensure that our hard work and good intentions didn’t end up sitting in a binder gathering dust, we turned our practice life stage guidelines into a set of laminated checklists that we can take into the exam room with us and go over box by box to make sure we don’t leave anything out.

The checklists are a hit with clients as they feel that we are being more thorough with meeting their pets’ needs. They are also great for new graduate associates because it allows them to complete a thorough wellness visit more easily. We even proved the effectiveness of checklists for wellness visits with a study.3

Dive in
So, dive right into organizing your wellness visits and unleash the diagnostic power of screenings to maximize their value for your patients and clients. Don’t go it alone though; AAHA has your back with their life stage guidelines. All you need to do is customize them to your practice and check those boxes to make sure they are being followed the same way every time.

REFERENCES
Erythema multiforme (EM), an uncommon inflammatory skin disease, is often sudden in onset and can affect the skin, the mucous membranes, and the junction between the two (mucocutaneous junction). The condition can wax and wane, can be self-limiting, or can require a more in-depth diagnostic workup and therapeutic intervention.

Pathogenesis
It is currently thought that EM is a cell-mediated hypersensitivity reaction directed against certain antigens (eg, infectious organisms, medications, foods, other substances). In dogs and cats, a variety of drugs and medications have been implicated. Antibiotics include penicillins, amoxicillin, cephalosporins, and trimethoprim-potentiated sulfonamides. Other implicated medications include diethylcarbamazine, levamisole, levothyroxine, griseofulvin, aurothioglucose and propylthiouracil, d-limonene—based flea dip, and zonisamide. Many reports of these medications causing EM are anecdotal, however, as provocation testing has not been conducted.

A variety of foods such as beef or soy, certain commercial dog foods, and nutraceuticals have been identified as triggers. EM may be associated with neoplasia (paraneoplastic syndrome), connective tissue disorders, or infections (eg, with *Staphylococcus* or *Pseudomonas* spp). In more than 25% of patients, the underlying cause may be idiopathic.

Although the exact pathogenesis of EM is not fully understood, these antigens can alter skin cells (keratinocytes), leading the antigens to release different substances or reveal them on their cell surface. T-cell (lymphocyte) attraction to antigen-altered keratinocytes eventually leads to individual cell death (apoptosis) in the affected area due to direct cytotoxicity.

Classifying erythema multiforme
In human medicine, EM has been organized into several categories based on disease severity and how much of the skin is affected. A classification scheme for animals was extrapolated from human data as follows:

- **EM** is defined as flat or raised, focal or multifocal, target or polycyclic, erythematous or purpuric, macular or patchy eruptions that affect less than 50% of the total body surface area.

  » **EM minor** is defined as lesions affecting 1 (or no) mucosal surface and less than 10% of the total body surface area.

  » **EM major** is defined as involvement of more than 1 mucosal surface.

- **Stevens-Johnson syndrome (SJS)** is described as erythematous or purpuric,
macular or patchy eruptions affecting more than 50% of the total body surface area. (Toxic epidermal necrolysis [TEN] overlaps with SJS when epidermal detachment affects 10% to 30% of total body surface area. Once epidermal attachment involves more than 30% of total body surface area, the disease is labeled as TEN.)

The raised lesions of EM will distinguish it from SJS and TEN, in which lesions are flat in the majority of patients. The similarity between canine and human EM is more historical than clinical. Canine EM is most similar to human EM major or SJS in terms of skin lesions, systemic illness, and progression of disease.

Clinical presentation
A variety of lesions can be noted in affected dogs and cats with EM. Early lesions may present as papules, erythematous macules, and plaques. Lesions can progress to serpiginous or classic target lesions that are raised on the borders and have a red center. Secondary infection may also involve scaling, crusting, or discharge from lesions. The most affected areas of the skin include the ventral, groin, and axillary regions; oral cavity; pinnae; and foot pads.

Almost 50% of patients have mucocutaneous involvement. Mucosal lesions often present as vesicles and bullae, with eventual progression to ulcerations. In some cases of mild disease, lesions may regress spontaneously over time. Removal of the suspected trigger may lead to an improvement of clinical signs in some patients.

In one form of the disease seen in older dogs, the lesions can persist for years with an unknown cause. In one form of the disease seen in older dogs, the lesions can persist for years with an unknown cause. In others lifelong immunosuppressive therapy may be needed to maintain remission. Depending on the selected treatment, a complete blood count, biochemistry profile, and urinalysis will need to be carried out every few weeks to check for hepatotoxic or myelosuppressive adverse effects.

Management and treatment
Ideally, the goal in treating EM is to remove the causative antigen. This may include stopping oral and topical medications and supplements or changing the patient’s diet (eg, starting a novel protein or hydrolyzed protein diet). Although there are reported cases of spontaneous resolution of lesions, a majority of patients will require treatment with corticosteroid or other immunomodulatory medications. Management medical care may include one or more of the following:

- Oral glucocorticoids, azathioprine, cyclosporine, tacrolimus, chlorambucil, pentoxifylline, retinoids, and human intravenous immunoglobulin
- A combination of vitamin B (niacinamide) and an antibiotic (doxycycline or tetracycline), which have been used in recent years for their synergistic immunomodulatory effects
- Immunosuppressive medications, which can be tapered slowly once the disease is in remission

Every case should be treated on an individual basis (ie, medication doses can be lowered at different rates). In some patients, medications can be stopped after several months, whereas in others lifelong immunosuppressive therapy may be needed to maintain remission. Depending on the selected treatment, a complete blood count, biochemistry profile, and urinalysis will need to be carried out every few weeks to check for hepatotoxic or myelosuppressive adverse effects.

Additional supportive therapy includes the prevention and treatment of secondary infection. Bathing once a week with an antimicrobial shampoo can help lower surface bacteria. Oral antimicrobials may be required if a secondary infection is already present; these medications must be chosen carefully, based on previous antibiotic history, along with the results of culture and sensitivity testing. For patients that are systemically ill, hospitalization may be necessary.

Prognosis
The prognosis for patients with EM is variable. If the underlying trigger can be identified and removed, there is a better chance of resolution. In patients with severe cases or those with idiopathic disease, lifelong therapy is more likely to be necessary. Likewise, disease relapse is more common in these patients.

REFERENCE
The veterinary technician’s role in trauma cases

Technicians can be a huge asset when emergent patients are brought into a veterinary hospital, as this case report illustrates.

By Marlaina Hrosch, LVT, RVT, VTS (ECC) Eligible

When a trauma patient presents to a veterinary hospital, many things must be done immediately to stabilize the animal, determine the primary problems, and figure out how to correct them. Practices that utilize their credentialed veterinary technicians to the fullest extent possible will run much more smoothly during emergency (and many other) situations. Trauma can be daunting due to the dynamic and potentially critical nature of the patient, but with our thorough knowledge of emergency medicine, technicians can help navigate these cases efficiently and effectively.

The following case highlights the cruciality and extent of a technician’s involvement in trauma cases. One day, a 10-year-old spayed toy poodle named Ellie was presented into the Veterinary Emergency Group in White Plains, New York after being attacked by another dog.

**Triage**

Technicians should be performing physical examinations on patients presenting for emergency care. Because we are the team members primarily responsible for monitoring the patient, it is crucial for us to obtain baseline parameters. Although technicians may not be able to grade a heart murmur, we should know what one sounds like so we can monitor for any changes. Our assessment during triage also helps us determine whether the patient is critical and needs immediate attention or is stable enough that it can wait to see a doctor.

On presentation, Ellie was laterally recumbent, obtunded, and wrapped in a blood-soaked towel. She was in late, decompensated, hypovolemic shock. The dog had pale mucous membranes, with a capillary refill time of less than 2 seconds, and was hypothermic (body temperature 97°F), tachycardic (heart rate 180 bpm), and hypotensive (blood pressure 43 mm Hg). She had a grade IV/VI heart murmur and was having increased respiratory effort. Upon further evaluation, the triage team found loops of exposed intestines jutting from an abdominal wound.

**Stabilization**

When a critical patient arrives, the veterinarian must evaluate the animal and then communicate with the owner. Depending on the severity of the case, the doctor may assist in stabilizing the patient. If the situation is not immediately critical, the doctor may give the technician a list of tasks to complete while they speak with the owner.

In Ellie’s case, as the doctor spoke with her owner, I began to stabilize the dog. I placed an intravenous (IV) catheter, started isotonic crystalloids, obtained serial blood pressure measurements, and administered flow-by oxygen via face mask. I also started the dog on a constant-rate infusion (CRI) of pain medications (ketamine, lidocaine, and fentanyl) and antibiotics (ampicillin/sulbactam and enrofloxacin), as ordered. Some tasks, such as setting up for wound management, were delegated to assistants.

The veterinarian lavaged the exposed organs copiously, and elected to place the intestines into the abdominal cavity temporarily until the full extent of the trauma could be determined. The doctor then packed the wound with sterile lap sponges and applied a bandage around the dog’s abdomen; technicians checked the wound frequently overnight for strikethrough of blood.

Due to the tachycardia, hypotension, and significant blood loss, Ellie received a packed red blood cell transfusion, after which she was more alert and could sit upright, her heart rate decreased to 120 bpm, and her blood pressure improved to 80 mm Hg. She became stable enough for anesthesia, and full surgical correction was planned for the following morning.

**Pharmacology and fluid therapy**

It is also important for technicians to have some understanding of pharmacology in emergency situations. When we understand how medications work and what receptors they work on, technicians can anticipate changes in the patient’s status based on the medication administered. Knowing a patient is on certain medications can also help us anticipate associated adverse effects and adjust our monitoring of parameters accordingly.

Technicians should also be experts in administering medications, including calculating doses, knowing when medications require dilution, and being aware of any special considerations. Doctors will inform us of the doses, but they also trust that we understand how these medications work and the potential adverse effects they may cause.

In Ellie’s case, as noted, pain medications were administered via CRI. On her second night in the hospital, the CRI dose was decreased in an effort to help increase the dog’s blood pressure. However, Ellie became vocal and tachycardic once the pain medications were decreased, so they were increased again.

Most technicians can set up and administer IV fluids, but we must also have a full understanding of how those fluids can affect the patient. Ellie had a grade IV/VI heart murmur, which means her heart was not pumping properly and she was at risk for fluid overload. Technicians must know how to determine whether a patient is becoming fluid overloaded.
Emergency medicine | MEDICINE

**Diagnostics**
It can become easy for technicians to fall into a role where we only complete tasks when asked, but there are many things we can do independently during emergency situations. In addition to performing a physical exam, we can provide supplemental oxygen, apply pressure to sites of active hemorrhage, and obtain many diagnostic measurements (e.g., blood pressure, electrocardiogram [ECG], blood oxygen saturation [SpO2] level). Additionally, we can place an IV catheter when we know a patient is going to be hospitalized or euthanized.

Ellie’s packed cell volume (PCV) was 53% on presentation, but this was presumed to be due to her shock state and was expected to decrease following reperfusion. Her lactate level was elevated at 13.3 mg/dL but improved following the administration of IV fluids. In addition to sinus tachycardia, her SpO2 was 98%. I obtained thoracic and abdominal radiographs, which showed that Ellie had a large amount of gas along the left lateral abdominal wall consistent with her wounds.

A PCV of 53% may not seem concerning, but a knowledgeable technician understands that 53% means there are additional considerations for the patient. Critical thinking skills help us see the bigger picture and, in Ellie’s case, plan for increased PCV monitoring and prepare for a blood transfusion due to significant blood loss.

**Anesthesia**
Anesthetizing a critically ill patient can be unnerving, so it is crucial that technicians understand how the anesthesia will affect our patients. In critical patients under anesthesia, ECG, SpO2, capnography, blood pressure, and temperature measurements should be obtained regularly. Technicians should also be evaluating anesthetic depth manually by assessing reflexes, pupil size and position, and muscle tone. The heart and lungs should be auscultated manually.

A fellow technician anesthetized Ellie for surgery, and the dog remained stable throughout exploratory laparotomy and wound repair.

**Nursing care**
Hospitalization and nursing care are where technicians can really make a difference for patients. Because the technician is the primary person monitoring the patient, we are usually the first to notice changes. This is true especially for patients that are hospitalized for several days. Ellie remained at our hospital for 3 days, where she was monitored by 3 to 4 experienced technicians.

Ellie had continuous ECG monitoring throughout her hospitalization. She had sustained sinus tachycardia and remained hypotensive despite aggressive fluid therapy and pain medication. Manual auscultation was used to monitor for worsening of Ellie’s heart murmur, which did not occur.

Following surgery, Ellie received a fresh-frozen plasma transfusion to provide clotting factors and proteins. A recheck of her PCV showed a 15% decrease, likely due to further blood loss and hemodilution resulting from IV fluid administration. A second packed red cell transfusion was administered following the fresh-frozen plasma transfusion.

On Ellie’s second night of hospitalization, she began regurgitating and was treated with anti-nausea medication. She became hypoglycemic (74 mg/dL) and was started on a 5% dextrose CRI in her IV fluids. On day 3, she was transported to a 24-hour critical care facility, but her overall status declined and she was euthanized owing to the poor prognosis.

**Conclusion**
Veterinary technicians are skilled and knowledgeable. We are nurses, phlebotomists, anesthesiologists, and patient care advocates. When used to the greatest extent possible, we can take on a wide variety of roles in the practice, and pet owners expect us to be the best we can be. In Ellie’s case, I came to understand that adequate patient care in emergency situations cannot be achieved without technician involvement. We performed a large part of her care, while also attending to several other hospitalized patients.

Veterinarians should never underestimate the significant role veterinary technicians play in patient care. And we technicians should always strive to educate ourselves and fulfill our potential.

Marlaina Hrosch, LVT, RVT, VTS (ECC) Eligible, is a technician training manager at Veterinary Emergency Group in White Plains, New York. Her areas of interest include trauma and toxins. Marlaina is focused on training technicians in emergency veterinary medicine. She is sitting for her veterinary technician specialty exam in emergency and critical care this month.

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Here are the CE opportunities coming in the next few months

**Fetch dvm360® second virtual conference November 12-14**

**THE FIRST VIRTUAL FETCH DVM360® CONFERENCE**, held in late August, combined 3 of our 6 annual live events—Hospital Design 360®, Fetch Kansas City, and Fetch Baltimore—in a single virtual conference. From Thursday, November 12 through Saturday, November 14, we’re hosting a second virtual conference, replacing Fetch Indianapolis, Fetch San Diego, and the Atlantic Coast Veterinary Conference®.

This unique virtual event will again feature a robust mix of prerecorded, live, and interactive sessions featuring a wide array of topics relevant to the entire veterinary team, with a focus on technology and well-being. We will also be offering a virtual daycare, with video and interactive activities to keep children occupied while their parents learn. Other additions to our November conference include joint presentations by veterinarians and technicians on several topics, controlled drug substance training, and a panel discussion on diversity.

You’ll also have the opportunity to hear from 4 keynote speakers and tour our virtual exhibit hall.

Conference attendees will have the opportunity to earn nearly 175 CE credits, with all sessions available on demand for 2 weeks after the conference. For additional details and to register, visit fetchdvm360.com. And stay tuned on our website and social media channels for conference updates and announcements.

**NOTE:** Many 2020 and early 2021 CE events are now being held online. Please visit individual event websites for details.

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| ABVP Symposium |                            |
| Chicago, IL |                            |
| abvp.com/symposium |                            |
| 800-697-3583 |                            |
| abvp@navc.com |                            |
| **October 17** |                            |
| Photomedicine Principles and Practices |                            |
| Loveland, CO |                            |
| info@curacare.org |                            |
| 970-818-0851 |                            |
| **October 29-November 1** |                            |
| Veterinary Dental Forum |                            |
| Dallas, TX |                            |
| veterinarydentalforum.org |                            |
| 208-461-9045 |                            |
| **December 5-9** |                            |
| AAFP 2020 |                            |
| Las Vegas, NV |                            |
| aafp.org |                            |
| 859-233-0147 |                            |
| aafpeoffice@aaafp.org |                            |

**September 2020**

- **September 21-22**
  - VMC’s Human Resources Boot Camp
  - Philadelphia, PA
  - vmc-inc.com
  - 303-674-8169

- **September 23-26**
  - WSAVA Congress 2020
  - Warsaw, Poland
  - wsva2020.com

- **September 24-October 27**
  - Southwest Veterinary Symposium
  - Fort Worth, TX
  - swvs.org
  - info@swvs.org

- **September 30-October 3**
  - Connexity 2020
  - Denver, CO
  - aaha.org

- **October 2-4**
  - Pacific Northwest Veterinary Conference
  - pnwvc.wsvma.org
  - info@wsvma.org
  - 800-399-7862

- **October 10-18**
  - ABVP Symposium
  - Chicago, IL
  - abvp.com/symposium
  - 800-697-3583
  - abvp@navc.com

- **October 10-17**
  - Photomedicine Principles and Practices
  - Loveland, CO
  - info@curacare.org
  - 970-818-0851

- **October 10-21**
  - AAFP 2020 Virtual Conference
  - catvets.com/education/conference
  - 800-876-0498

- **October 29-November 1**
  - Veterinary Dental Forum
  - Dallas, TX
  - veterinarydentalforum.org
  - 208-461-9045

- **December 5-9**
  - AAFP 2020
  - Las Vegas, NV
  - aafp.org
  - 859-233-0147
  - aafpeoffice@aaafp.org

- **January 24-27**
  - Small Animal Alaska
  - Mushing CE Experience
  - Big Lake, AK
  - 907-892-7899

- **January 25-29**
  - Lake Tahoe Equine Conference
  - Incline Village, NV
  - lake tahoe equine conference.com

- **January 7-10**
  - AVMA Leadership Conference
  - Chicago, IL
  - avma.org/events/veterinary-leadership-conference

- **January 16-20**
  - Veterinary Meeting & Expo
  - Orlando, FL
  - navc.com/vmx

- **February 11-14**
  - Midwest Veterinary Conference
  - Columbus, OH
  - mvconf.info
  - info@mvconf.info

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Earning your reputation

As the new veterinarian in town, Brock wanted to cultivate a good reputation. But would he fail before he even got started?

Josh was a fuzzy old gray dog with eyes like Marty Feldman and a raging underbite. I estimated him to be about 25 pounds and 15 years old when I first saw him tucked under his owner’s left arm as she stood in the waiting room. The woman holding Josh had the look of a stereotypical diner waitress, and her face was torqued into a worried expression that I assumed was related to her dog.

The client did not utter a word, but her raised eyebrow suggested I had no idea what to do as a veterinarian if that stuffed animal did not reveal the problem.

She stood there tapping her toe as she waited for her turn to check in, holding Josh securely in her left arm and a white plastic sack in her right. I had only been in Lamesa a few days and knew almost no one. Every client who came through the door was a brand-new relationship to cultivate, and I looked at each one as a new friend.

When we met in the exam room, I went to work examining Josh, who I learned was actually 16 years old. As the client jabbered on about how worried she was, I checked the dog’s temperature, heart, lungs, eyes, ears, throat, lymph nodes, and skin. Everything was normal, but Josh did appear to be a little arthritic.

I went on to the next phase of the exam, the history, and began quizzing this worried lady about her dog’s clinical signs: Has he been vomiting? No. Has he had any diarrhea? No. Has he stopped eating or drinking? No. Does he cough or wheeze? No. Is he stumbling around or acting crippled? No. I was just about out of questions and had not even a clue as to why she was so worried about ole Josh. But just as I was about to ask a second round of questions, the woman reached into that sac of hers, pulled out a grungy stuffed bear, and handed it to me.

I held it in my hand and examined for a moment the gross-looking little bear with matted hair. It looked like some low-quality stuffed animal from the carnies row at the county fair. I was waiting to hear how this matted toy had anything to do with Josh, but she just stood there and looked at me like I was holding the obvious answer to the entire world’s health problems.

The client did not utter a word, but her raised eyebrow suggested I had no idea what to do as a veterinarian if that stuffed animal did not reveal the problem. I began looking close at it again during the uncomfortably long pause. I looked to see if maybe it had button eyes and one of them was missing (maybe Josh had eaten it). I checked to see if it was chewed or torn (maybe he had eaten some stuffing). Nope on both counts.

Finally, after what felt like 5 minutes, she began to speak. “That is Sweetie Pie,” she said, referring to the stuffed animal. “Josh humps that bear two to three times a day and has for the last 15 years. I am extremely worried about Josh because he hasn’t humped it one time in the last two weeks. I am completely sure something very bad is wrong with him.”

I quickly released my grip on the bear and handed it back gently to the client. What the heck am I supposed to do about this, I wondered. Dang, Josh is something like a 90-year-old human. I am not 90 yet but, from what I’ve heard, 90-year-old dudes aren’t doing much twice-a-day humping.

I was brand new in town and I wanted people to like me and refer their friends to Brock. I could tell by her look that she was not going to have any sort of respect for me if I didn’t get ole Josh back to his business. I scanned my brain for any information they gave me back at veterinary school that would help me, but came up empty.

Come on, Bo, I said to myself. Think of something here, buddy. You can fix this. Use your common sense if you can’t find any science. These were the thoughts rushing through my head as I stood there trying to act like this was a common problem.

I had seen commercials on television for men with low testosterone, and all those fellas seemed to be totally happy after a few doses of the hormone. So, I decided to give Josh a little shot of testosterone in the muscle. I didn’t give much—I didn’t want to cause health problem—but just enough to make Sweetie Pie look as beautiful to Josh as it did 15 years ago. I had no idea if it would help, but this lady had not bought into my logic about 90-year-old men when I tried that first.

After about a week, the client called the practice. She was happy as could be as she informed me that I was the best veterinarian Lamesa had ever seen, adding that Josh would sometimes hump Sweetie Pie up to 4 times a day now.
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