An ever-changing profession

For most members of the veterinary industry, evolution unrelated to medicine is moving at the speed of light.

By Kyle Palmer, CVT

Many hospitals are very hungry for new doctors, which explains why the standards for those being considered for these positions are quickly changing. It was not long ago that those same owners or managers were sifting through piles of CVs with the luxury of only looking closely at those with 2 to 4 years of experience under their belts. The same practices that were slowly moving toward a business model that used only licensed veterinary technicians for the most critical tasks are now resigning themselves to the fact that a well-trained assistant will have to suffice whenever legally appropriate. Drovers of hospitals that have never had a single certified, registered, or licensed veterinary technician walk inside their building are now statistically distanced from the possibility of that ever happening.

See page 26
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Hope is on the horizon

Signs of better times ahead in veterinary medicine, plus a closer look at curbside care and how it’s transforming our profession.

With only 6 months left in 2021, many of us are elated about the direction in which the rest of the year is heading. As more people get vaccinated to help stop the spread of COVID-19 and Centers for Disease Control and Prevention guidelines slowly loosen, our profession is entering a “newer normal.” I never imagined that our profession would have had to implement curbside care. But we defined all odds and successfully adapted to the drastic, sudden protocols. Now, many practices are allowing clients to enter their facilities safely.

Webinars polling the veterinary community about curbside care preferences have revealed mixed responses. Some clients prefer this new method of care, whereas others opt for the traditional face-to-face interaction. Veterinary professionals also share opposing views. Some have expressed that patients have behaved better away from their owners; others have shared their frustrations and concerns about virtually communicating treatment plans, laboratory results, and radiographs, including a loss in translation.

Regardless of where you stand, curbside care appears to be here to stay, possibly into the years ahead. Some practices are utilizing it for surgery drop-offs, technician visits (such as nail trims, anal sac expressions, and subcutaneous fluids), and recheck visits to help increase workflow and provide better in-person client interaction during wellness checks and sick visits. In addition to providing curbside care, more hospitals are offering telehealth services to help offset their hectic schedules. Telehealth has given doctors the unique opportunity to see patients from the comfort of their homes.

These are just a few of the many exciting, innovative ways in which our profession has adapted and evolved during this worldwide crisis. I look forward to seeing how the rest of 2021 shapes up and wish you well. Please stay safe, and thank you as always for your essential work.

—Adam Christman, DVM, MBA
Chief Veterinary Officer

FROM THE CVO

Brief Summary: Before using NexGard® (afoxolaner) Chewables, please consult the product insert, a summary of which follows.

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

Description: NexGard® is a soft chewable for oral administration to dogs and puppies according to their weight. Each chewable is formulated to provide a minimum afoxolaner dosage of 1.14 mg/lb (2.5 mg/kg).

Indications: NexGard kills adult fleas and is indicated for the treatment and prevention of flea infestations (Ctenocephalides felis), and the treatment and control of Ixodes scapularis, Dermacentor variabilis, Amblyomma americanum, and Rhipicephalus sanguineus infestations in dogs and puppies 8 weeks of age and older, weighing 4 pounds of body weight or greater, for one month. NexGard is indicated for the prevention of Borrelia burgdorferi infections as a direct result of killing Ixodes scapularis vector ticks.

Dosage and Administration: NexGard is given orally once a month, at the minimum dosage of 1.14 mg/lb (2.5 mg/kg). See full product insert for dosing table and details.

Warnings: Not for use in humans. Keep this and all drugs out of the reach of children. In case of accidental ingestion, contact a physician immediately. Keep NexGard in a secure location out of reach of dogs, cats, and other animals to prevent accidental ingestion or overdose.

Precautions: Afoxolaner is a member of the isoxazoline class. This class has been associated with neurologic adverse reactions including tremors, ataxia, and seizures. Seizures have been reported in dogs receiving isoxazoline class drugs, even in dogs without a history of seizures. Use with caution in dogs with a history of seizures or neurologic disorders.

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

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

Over the 90-day study period, all observations of potential adverse reactions were recorded. The most frequent reactions reported at an incidence of >1% within any of the three months of observations are presented in the following table.

Table 1: Dogs with Adverse Reactions.

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>N</th>
<th>N (%)</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afoxolaner Oral active control</td>
<td>17</td>
<td>41</td>
<td>25</td>
</tr>
<tr>
<td>Vomiting (with and without blood)</td>
<td>13</td>
<td>3.1</td>
<td>7</td>
</tr>
<tr>
<td>Dry/Flaky Skin</td>
<td>7</td>
<td>1.7</td>
<td>4</td>
</tr>
<tr>
<td>Lethargy</td>
<td>5</td>
<td>1.2</td>
<td>9</td>
</tr>
</tbody>
</table>

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

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

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

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

The following adverse events reported for dogs are listed in decreasing order of reporting frequency for NexGard: Vomiting, pruritus, lethargy, diarrhea (with and without blood), anorexia, seizure, hyperactivity/ restlessness, panting, erythema, ataxia, dermatitis (including rash, papules), allergic reactions (including hives, swelling), and tremors.

Effectiveness: See full product insert for details regarding Effectiveness.

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

In a well-controlled field study, no adverse reactions were observed from the concomitant use of NexGard with other medications.

Contact Information: For a copy of the Safety Data Sheet (SDS) or to report suspected adverse drug events, contact Boehringer Ingelheim Animal Health USA Inc., at 1-888-627-4251. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or www.fda.gov/reportanimalmeds.

The information provided here is not comprehensive. The full FDA-approved product insert is available at www.nexgardfordogs.com. Consult your veterinarian for further information.

Product approved by FDA under NADA # 141-406.

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Reference package insert: 1050-4983-09 Rev. 11/2019

Brief preparation date: 08/2020

US-PI-0735-2020
The rapid, open, and transparent sharing of data on this outbreak is now being threatened by rumors and misinformation around its origins,” wrote the authors, who all declared no competing interests in their communication by their Disclaimers as Recommended by the International Medical Journal Editors. “We stand together to strongly condemn conspiracy theories suggesting that COVID-19 does not have a natural origin.”

And although it’s true that the genomic sequence of the virus subsequently pointed to natural origins, the questions regarding China’s role persisted, led by pesky conspiracies and conflicting reports.

Fast forward to June 2021 and new evidence has breathed new life into those origin questions. In an update to the February 2020 letter, The Lancet has published an addendum with revised disclosure statements from virologist and investigator Peter Daszak, one of the 27 authors. In the revised document, Daszak noted that his remuneration is paid solely in the form of a salary from EcoHealth Alliance, a New York-based nonprofit research foundation of which he is president. The company has reportedly worked directly with Wuhan laboratories and funded gain-of-function research at China’s Wuhan Institute of Virology, which they believe could have resulted in the spillover that catapulted the emerging virus into a pandemic.

Consider, too, other odd associations. Recent reports have uncovered financial ties between Google and EcoHealth Alliance. This has come after accusations that the tech giant was the spark that lit the fuse?

Debate and discussion about the origin of the virus that causes COVID-19 have been at the forefront of the global consciousness since the first cases were reported in 2020. Early on, whispers of a potentially engineered virus quickly grew to a roar and fueled speculation that China was behind the pandemic. This narrative was so pervasive that, in February 2020, a group of 27 public health scientists published a letter in The Lancet disputing the lab leak theory and announcing their support for their counterparts in China: the scientists, public health officials, and medical practicing teams. Some even considered posting the letter to Facebook.

The open sharing of data on this outbreak is now being threatened by rumors and misinformation around its origins. It is likely that this narrative will continue. However, the current evidence suggests that COVID-19 does not have a natural origin.

As its natural zoonotic spillover that catapulted SARS-CoV-2 from an emerging virus into a pandemic - pathogen or was it something much more sinister? Is it all at once that a lab leak in Wuhan, China, was the spark that lit the fuse?
was censoring lab leak “conspiracy theory” stories in its search results. Google's health lead, David Feiberg, has dismissed those reports, insisting that the company is simply taking steps to protect users from unverified information.

Are these coincidences or “where there’s smoke, there’s fire” situations? It’s unclear. But they add to the bank of troublesome questions standing in the way of the truth about COVID-19.

The questions extend beyond origin theory, though. With the US Food and Drug Administration's green lighting of vaccines for adolescents and young adults comes hesitation over long-term effects. What is the effect on fertility? Do the vaccines cause heart inflammation? Dr. Robert Malone, the inventor of the mRNA technology, appeared on television recently, expressing strong concern over the risk-benefit analysis of vaccines for young adults, and the Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices recently met to discuss instances of myocardi- or pericarditis in people aged 30 and younger who have received an mRNA COVID-19 vaccine.

Of course, the ultimate question is that we may never know.

We may never know where this virus came from. We may never know where the global pandemic is believed to have had more than 3.8 million lives. And we won’t know the long-term effects until enough time has elapsed. What we do know for certain is that the incredible strength and collaborative community have allowed us to regain some semblance of normalcy. The development and rollout of multiple effective vaccines have been the medical miracle of our lifetime. That, right now, will have to be the only answer that matters. Thank you for reading.

—Michael Hennessy Jr Chairman and Founder, MJH Life Sciences®
COMMUNITY

3
» From the CVO
  Hope is on the horizon

4
» Chairman’s letter
  Questions linger around COVID-19’s origin

66
» Products360
  Supplements, innovative devices, and more

68
» AVMA Eye on economics
  Telehealth: More than a Pandemic stopgap
  Matthew Saloia, PhD, director, AVMA Veterinary Economics Division; and Gail Gelab, dvm, phd, manzcvs (Animal Welfare), dacaw

72
» Steve Dale’s vet world
  Demystifying the many myths about cats
  Steve Dale, cabc

73
» The dilemma
  COVID-19 vaccine resentment
  Marc Rosenberg, vmd

74
» Stampede
  Mark versus gopher: A battle of wit
  Bo Brock, dvm

Why are veterinarians unhappy?
Meeting veterinarians’ needs can help practices develop happy, motivated associates.
By Ivan Zak, DVM, MBA

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NEWS

12
» Education
Merck Animal Health grants $270,000 in veterinary scholarships

AAFP releases new Feline End of Life Educational Toolkit

13
» AAVMP president sheds light on recent hate crimes against the Asian American community

14
» Diversity
Finding a safe place within the veterinary profession

18
» Technology
PetDx launches new multicancer screening test

20
» Industry
Massachusetts veterinary hospital goes green

AVMA appoints new JAVMA/AJRC editor in chief

New WSAVA committee to offer veterinary oncology a global boost

22
2021 Practice Manager of the year

26
» Evolving industry
An ever-changing profession

medicine360

30
» Surgery
Exploring minimally invasive surgery
Sarah Mouton Dowdy

34
» Dermatology
The itchy cat challenge
Amanda Carrozza

36
Image Quiz:
What is causing these skin lesions?
Judy Seltzer, BVetmed, MRCVS, DACVD

38
» Internal medicine
Heatstroke involves multiple risk factors
Patricia M. Leff, DVM

39
» Integrative medicine
When and why: The CBD debate
Janelle Overholser, CVT

43
» Parasitology
Dear Toxoplasma gondii, Do you feel neglected?
Jenifer Chatfield, DVM, DACVIM, DACVPM

48
» Gastroenterology
Management of the blocked cat for veterinary technicians
Kate Boatright, VMD

50
» Practice management
Diversity and inclusion: My journey
Carolyn C. Shadle, PhD

52
» Marketing
How to improve Google rankings by getting more practice reviews
Andrew Chirico, BBA

55
» Practice management
The 2-minute phone call
Emily Shiver, CVPM, CCPP

56
» Marketing
How to maintain client loyalty by utilizing effective retention marketing
Peter Weinstein, DVM, MBA

60
» Marketing
Marketing to millennial clients and beyond
Robert Sanchez, CEO of Digital Empathy

62
» Tech innovation
3 safeguards for managing social media
Kelsey Gustafson, Associate Editor
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In avermectin sensitive dogs, pupils, incoordination, panting, and generalized muscle tremors. Adverse reactions including depression, salivation, dilated pupils, hypoglycemia, tremors, and generalized muscle tremors. In long-term use, these signs may occur more frequently and may include inappetence and death. b. Some dogs may experience ataxia due to a mutation in the MDR1 gene. Dogs with this mutation may develop signs of ataxia, especially vestibular signs. c. Abnormal papillary position is a known adverse reaction associated with the use of avermectin. This reaction includes nystagmus and nystagmus-like signs. d. There is no specific antagonist for avermectin toxicity. e. Do not use the Dog product (containing 2.5% imidacloprid + moxidectin) or the Cat product (imidacloprid + moxidectin) if you have a child or pets with sarcoptic mange or demodic mange. Take appropriate measures to prevent re-infestation. f. 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Merck Animal Health grants $270,000 in veterinary scholarships

The company joined forces with the American Veterinary Medical Foundation for the eighth year in a row to offer veterinary scholarships to students worldwide.

By dvm360 staff

T

his year, Merck Animal Health and the American Veterinary Medical Foundation (AVMF) provided $5,000 scholarships to each of their 54 veterinary student recipients—for a total of $270,000 in aid—through the Merck Animal Health Veterinary Student Scholarship Program, according to a company release. The selected second- and third-year students are pursuing careers in companion animal or large animal medicine.

“Veterinarians play a critical role in both caring for our companion animals and ensuring a safe and sustainable food supply,” says Scott Borman, senior vice president, North America, Merck Animal Health, in the release. “We are proud of our partnership with the AVMF to award these scholarships each year to deserving students around the world. We look forward to the impact they will make throughout their careers, both in the animal health industry and beyond.” 

The AVMF is the charitable arm of the American Veterinary Medical Association (AVMA) and has assisted veterinary students for more than 50 years. Students awarded a scholarship through the AVMA from the United States, Canada, and Caribbean veterinary schools plus those from other select international schools were chosen based on academic excellence, financial need, leadership, and area of interest within the field. “The AVMF is so pleased to have partnered again with Merck Animal Health to recognize exceptional veterinary students through much-needed educational scholarships,” says John Howe, DVM, chair, AVMF Board of Directors, in the release. “Thanks to Merck Animal Health’s generous commitment, scholarship recipients have additional resources to help them pursue their educational and professional goals and opportunities. We congratulate the outstanding 54 scholarship recipients and thank Merck Animal Health for its continued support of students and the veterinary profession.”

AAFP releases new feline End of Life Educational Toolkit

This online tool offers veterinary professionals a useful guide for ensuring a smooth, calm, and compassionate experience for cats and their owners during the end-of-life transition.

By dvm360 staff

T

he American Association of Feline Practitioners (AAFP) recently released a digital End of Life Educational Toolkit to help veterinary professionals facilitate a well-planned, peaceful, and painless end-of-life transition for cats.

“Successful end-of-life feline care is about more than just medicine; it is about creating a peaceful transition for our patients and their owners,” says Wendy Simpson, DVM, AAFP Task Force chair, in an association release. “The AAFP Task Force is committed to compassionate end-of-life care and is pleased to offer a new educational resource for veterinary professionals to help guide them through this process,” she adds.

According to the release, the easy-to-read resource explains how to best broach this difficult and often emotional conversation with cat owners. It also addresses several frequently asked questions, and client resources.

“The End of Life Toolkit covers topics such as recommended sedatives and anesthetic protocols for cats and strategies for setting up the practice environment with comfort in mind,” says Simpson.
AAVMP president sheds light on recent hate crimes against the Asian American community

By Julia Burke, Assistant Editor

In honor of Asian Pacific American Heritage Month in May, the American Association of Veterinary Medical Colleges (AAVMC) hosted a special Diversity and Inclusion on Air segment. The show focused on the rise in hate crimes against the Asian American and Pacific Islander (AAPI) population and how the Association of Asian Veterinary Medical Professionals (AAVMP) is promoting diversity and inclusion within the profession.

The podcast, hosted by Lisa Greenhill, EdD, MPA, senior director of institutional research and diversity at AAVMC, featured Hira Basit, a Pakistani American fourth-year veterinary student at the University of Florida College of Veterinary Medicine and president and cofounder of the AAVMP. Basit offered insight on the hate crimes, discussed the goals of the AAVMP, and provided strategies for better supporting AAPI colleagues.

During the COVID-19 pandemic, there has been a spike in hate crimes against the AAPI community. A study examining such incidents in 16 major US cities revealed that in 2020, anti-Asian hate crimes increased by 149%.

Basit told Greenhill that veterinary medicine doesn’t always provide an escape from this discrimination and harassment, adding that some of her AAPI colleagues have felt victimized, hypervigilant, and silenced in the workplace regarding current anti-Asian incidents they or others have faced.

“I want to say that I’m lucky in that I am South Asian and I haven’t experienced the same form of discrimination...but you know my heart still goes out to them [other Asian communities] and I still advocate for them as much as I can,” Basit told Greenhill.

AAVMP, founded in April 2020, has provided Asian veterinary professionals and students a platform for voicing their concerns and finding solidarity during these trying times, although the hate crimes were not the impetus for launching the organization.

A closer look at the AAVMP

The idea for the AAVMP was ignited by Basit’s realization that the AAPI community remains considerably underrepresented in veterinary medicine. “No colleagues look like me. No professors look like me. I still have yet to, in person, meet a South Asian veterinarian,” said Basit.

In addition to this lack of representation, Basit was inspired to encourage other AAPI individuals that pursuing a veterinary profession is attainable and an excellent path. Some of the organization’s short-term goals include creating diversity and leadership roles for the AAPI population and breaking the stigma that veterinary medicine is not a successful medical career. Basit’s long-term goals for the organization are forming AAVMP student chapters at each university, achieving international growth, offering scholarships and grants, and more.

REFERENCE
Finding a safe place within the veterinary profession

One hospital administrator tells his story of self-acceptance and finding a safe place within the veterinary community by nourishing an inclusive and diverse environment in which everyone can shine.

By Paul Miranda

This is a story about a gay Cuban kid who spoke with a lisp and was taught to hide his true identity. This is also a story about a young professional who strived to unlearn falsehoods about how the world worked and who set out on a journey of self-acceptance, authenticity, and belonging within the veterinary community.

Setting the scene

Like many from Cuba, my parents landed on the shores of Miami, Florida, as they would often remind us, nothing to their name. From them I learned the value of hard work, appreciation for the little things in life, and how to be a caring individual.

It was 1986, and my mom called me Pablito Miranda Vargas Almira. I had a strong Cuban accent and was forced by my school into therapy for a speech impediment. I had a heavy lisp and found it difficult to pronounce many words—most difficult being girl. To me, girl was girrro. While correcting my impediment, I also learned that a lisp equated girrrro.

While I mastered my speech impediment to the best of my ability, I discovered that a lisp equated girl to me. I began to feel like I belonged. It was my manager. They saw me. I began to flourish.

Many years later, in 2013, I joined BluePearl Specialty + Emergency Pet Hospital in New York, New York. At first, I struggled with my team interactions, attempting to balance professionalism, openness, and authenticity. I was not being myself and my team could pick up on it. It was not until I found a certain psychological refuge and allowed myself to open up that I began to flourish.

Finally, someone saw, heard, and appreciated me for all my unique contributions, and I began to feel safe. It was my manager; they saw me. I began to feel like I belonged.

Creating safe spaces

When we create a safe place for our employees, we create a place where everyone can succeed. We create a space that allows everyone to be themselves. We create a place of belonging, inclusivity, and togetherness. We create a place where hospital administration, veterinarians, veterinary technicians, and paraprofessionals want to be, not just need to be. We create a better place for our patients and clients. Perhaps most importantly, we create a better profession for those within it and for those who follow.

When we open our doors to diversity and deliberately work to build more equitable and inclusive veterinary environments, great things happen. Let us not shy away from our differences but instead actively acknowledge and honor what makes each of us unique. Notice what makes me a person. Notice the color of my skin. Notice the way I speak. Tell me that you see me, that you recognize my attributes, and that I matter as a person, as a human being on this Earth.

In the end, that is what equity, inclusion, and diversity (E&I&D) is and why it matters. That is why E&I&D works, and the work I do as a member of BluePearl’s E&I&D Council (whose team members represent the voices of more than 7000 veterinary associates nationwide) is vitally important. Let’s remind one another to really see the person beside you and say, “Tell me more about yourself.”

Paul Miranda is a hospital administrator with BluePearl Specialty + Emergency Pet Hospital, supporting operations in multiple hospitals throughout Kansas and Missouri. In addition, he works with numerous veterinary affinity groups in the equity, inclusion, and diversity space, and is a member of BluePearl’s E&I&D Council, where he identifies, addresses, and advocates for sustainable and scalable change.
Because we’re stronger together.

To purchase a T-shirt, visit vet.trupanion.com/trucuddle/.

We rate dogs’ #EarstoVets T-shirts sold between July 1 and October 31 will be donated to TruCuddle™, Trupanion’s worldwide movement that raises funds for organizations that empower and support veterinary professionals through grants, scholarships, and educational programs, including Not One More Vet (NOMV) and the Multicultural Veterinary Medical Association (MCVMA).

Wear your cuddle for veterinary professionals!

Just like each pair of dog ears, the challenges faced by veterinary professionals are unique. The #EarstoVets campaign aims to increase awareness of these challenges so veterinary teams get the support, recognition, and love they deserve.

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A new worldwide movement—TruCuddle—launched on Veterinary Appreciation Day, June 18. The movement is designed with the future of the veterinary profession at the forefront and aims to address critical challenges that pervade the veterinary industry, with a specific emphasis on educational gaps, mental well-being, diversity, and inclusion within the profession.

TruCuddle recognizes the 24/7/365 dedication and support the veterinary community provides for the common good of pets, families, and the veterinary professionals entrusted with their care.

TruCuddle is leveling up their commitment to support veterinary professionals with this special fundraising campaign by offering additional opportunities to raise much-needed funds that will go directly to support grants, scholarships, and educational programs.

“We know that the veterinary profession is physically and emotionally demanding,” says Margi Tooth, Co-President of Trupanion. “With TruCuddle we aim to help overcome important challenges the veterinary community faces together for pets, their families, and the veterinary profession. It’s a genuine ‘cuddle’ where we hope that we can put our arms around a profession in need of some TLC.”

TruCuddle will run through National Veterinary Technician Appreciation Week (October 17-23, 2021) and is a partnership between Trupanion, MightyVet, the Multicultural Veterinary Medical Association (MCVMA), Not One More Vet (NOMV), and WeRateDogs, with the shared goal to empower, support, and educate the veterinary community.

“We realize we can do more to support a healthier veterinary ecosystem by working with organizations like NOMV, MCVMA, WeRateDogs, and MightyVet, who are aligned with our core values, and the TruCuddle movement is a start,” says Travis Worra, Trupanion General Manager.
Statistics tell part of the story
Although the conversation around mental health in the veterinary profession has been amplified in recent years, the statistics surrounding the reality of the crisis are still harrowing.

Suicide ideation remains significantly higher among veterinarians when compared to the general population. This is according to the Merck Animal Health Veterinary Wellbeing 2020 Study.1 The number of veterinarians who contemplated suicide in 2019 was more than double that of the national average (7,455 per 100,000, compared to 3,600 per 100,000). Overall, the rate of suicidal ideation and attempted suicide among veterinarians as a whole remained mostly unchanged from the group's previous study. But that unaffected statistic is not viewed as good news.

In 2017, 24.9% of respondents indicated they had contemplated suicide. That figure decreased slightly to 21.9% in 2019. In segmenting the responses by age and gender, the survey found that women are more likely to experience higher levels of serious psychological distress than men. Younger veterinarians are also much more likely to suffer from serious psychological distress.

On a positive note, the study found significant improvement in perceived attitude towards those with mental illness, from 24% in 2017 to 57% in 2019. The study's investigators believe this is an indication that there is now less stigma around mental illness. This notable increase can be viewed as a testament to the work accomplished by groups like NOMV and MightyVet and their benefit to the industry.

Mental health is a significant crisis for the veterinary profession but is not the only concern TruCuddle addresses. The lack of diversity in the industry is palpable, and is the focus of groups like the MCVMA. There is no arguing that minorities comprise only a small percentage of veterinarians. According to a 2019 census provided by the AVMA, approximately 2% of veterinarians are Black, 6.1% are Asian, and 3 to 4% are Hispanic.2 What’s more, 2018-2019 data from the American Association of Veterinary Medical Colleges (AAVMC) highlights that only 2.1% of veterinary school applicants are Black.3

“Beyond the indisputable fact that our profession is one of the least racially and ethnically diverse in the nation, it can no longer be ignored that the future relevance of our field hinges upon the growth and development of a workforce that more closely resembles the American population at large,” the MCVMA website reads.

The work done by leaders in the industry, and collaborative efforts like TruCuddle, will continue to pave the way for future veterinary professionals.

Get to know the TruCuddle partners

Trupanion: Trupanion is a leader in medical insurance for pets, providing peace of mind for hundreds of thousands of pet parents. For veterinarians, Trupanion offers a free payment solution that helps eliminate barriers to care, while increasing access to care. It seamlessly integrates with a hospital’s practice management system and can provide point of care payment in seconds.

MightyVet: Launched in 2018, MightyVet offers access to information not otherwise taught in veterinary school, to ensure veterinary professionals are aware of and prepared for the realities of practice. Through education, mentorship, and free resources, veterinary professionals can learn tools to overcome burnout, compassion fatigue, ethics exhaustion, and decreased career satisfaction.

Multicultural Veterinary Medical Association: The MCVMA exists to lead veterinary medicine towards the racial and ethnic diversity, equity, and inclusivity necessary to serve a multicultural society. The association works to create a space in which veterinary professionals of diverse backgrounds can network and educate each other while transforming the veterinary profession into one that is inclusive and equitable.

REFERENCES
PetDx launches new multicancer screening test for dogs

OncoK9 offers new cancer detection capabilities enabling veterinarians to provide the highest quality of care to their canine patients.

By dvm360® staff

PetDx—a molecular diagnostics company dedicated to unleashing the power of genomics to improve pet health—released its newest innovative product, OncoK9, a novel multicancer early detection test that helps veterinarians detect cancer in dogs earlier by using a simple blood draw.

“Our team at PetDx is thrilled to bring the latest scientific advances from human cancer genomics to the animal health arena. We have deployed significant efforts over the past 2 years in developing and validating OncoK9 to address a massive, unmet need in the veterinary space,” says Daniel Grosu, MD, MBA, founder and CEO of PetDx, in a company release.

OncoK9 uses routine blood drawing without the need for prior fasting or sample processing. Once collected, the sample is shipped overnight at ambient temperature to PetDx’s laboratory. Upon arrival, the sample undergoes processing using propriety methods optimized for canine cell-free DNA analysis. A digital report is then issued to the veterinarian who sent the sample, indicating whether a cancer signal was detected.

Additionally, PetDx conducted a clinical research program in veterinary cancer diagnostics that included blood samples from nearly 1600 client-owned dogs. Of those dogs, 577 were then evaluated in the CANDiD (CANcer Detection in Dogs) study for clinical validation of OncoK9. The results showed that PetDx demonstrated robust clinical performance with strong cancer detection rates and very low false positives.

“In the future, we envision offering the test for additional use cases, including minimal residual disease detection, recurrence, and treatment response monitoring, and targeted treatment selection, greatly expanding the veterinarian’s toolbox for the management of cancer in dogs,” says Andi Flory, DVM, DACVIM, chief medical officer of PetDx and board-certified veterinary oncologist, in the release.

PetDx recommends OncoK9 as an annual screening test for dogs that are 8 years or older and/or belong to breeds that are highly predisposed to cancer.

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† A single treatment is effective and a second treatment should not be necessary. If reinfection with worms occurs, Profender® can be applied after 30 days.

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‘A single treatment is effective and a second treatment should not be necessary. If reinfection with worms occurs, Profender® can be applied after 30 days.

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PM-US-20-3823
Massachusetts veterinary hospital goes green

By dvm360® staff

 heal Veterinary Clinic in Watertown, Massachusetts, is taking strides to promote a cleaner environment. With a staff of 20, the clinic, founded in 2017, uses low-carbon and nontoxic building materials and recently installed a 48-panel solar electric system. Not only has this switch lowered utility costs, but clients are thrilled to support a clinic that is helping the environment.

“Before going solar, our electrical bills were over $8000 per month, and the utility rates usually go up every year. So we built a solar power plant. The energy from the sun is free. Our staff and clients are also proud we are doing our part for the environment,” Jamie Leef, general manager of Heal Vet, told dvm360® in an email.

Leef’s previous career, which involved installing solar systems for other companies, prepared him for a long utility approval and permitting process, according to a company release. Additionally, he explained that SunBug Solar, a full-service local solar energy company, designed and installed the solar electric system, simplifying the project.

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AVMA appoints new JAVMA/AJVR editor in chief

By dvm360® staff

The American Veterinary Medical Association (AVMA) recently appointed Lisa A. Fortier, DVM, DVM, PhD, as the new editor in chief of the Journal of the American Veterinary Medical Association (JAVMA) and the American Journal of Veterinary Research.

Fortier assumed her new role on June 28, 2021, succeeding Kurt Matushek, DVM, MS, DACVS, who served as editor in chief of JAVMA since 2009 and associate editor since 1997.

Fortier plans to focus on publishing timely and informative author contributions about clinical veterinary practice, basic science, and One Health.

“Throughout her career, Dr Fortier has distinguished herself as a clinician, scientist, educator, and communicator,” says Douglas Kratt, DVM, AVMA president, in an association release. “We are delighted that she will be bringing her expertise as a surgeon, as the author of more than 150 publications, and as an editor to her new position leading AVMA’s veterinary journals.”

Fortier earned her DVM from Colorado State University in 1991 and her PhD in veterinary medicine from Cornell University in 1998. She is the James Law Professor of Surgery, director of equine programs, and associate chair for graduate education and research at Cornell. Additionally, she serves as editor in chief for the Journal of Cartilage and Joint Preservation.

“It will be a great honor to join the AVMA and to serve as editor in chief of these internationally renowned publications, which are so essential to the practice of veterinary medicine,” says Fortier in the release. “My experience as a researcher and editor, combined with my active role as an equine orthopedic surgeon, provides me with a unique viewpoint and a deep appreciation of the challenges facing practitioners today.”

New WSAVA committee to offer veterinary oncology a global boost

By dvm360® staff

With approximately 1 in 4 dogs developing cancer within their lifetime,1 the need for enhanced veterinary oncology care is dire. To help improve quality of care veterinarians provide to oncology patients, the World Small Animal Veterinary Association (WSAVA) has inaugurated its WSAVA Oncology Working Group, formed to raise awareness about the latest research in cancer therapy and to promote best practices.

This group consists of international oncology experts and specialists, including WSAVA past president and global pet cancer advocate Jolle Kirpensteijn, DVM, PhD, DACVS, ECVS. Additionally, the team has already begun establishing a set of user-friendly, convenient global guidelines for veterinary oncology practices.

“In developing our resources, we will work closely with other WSAVA committees and our affiliated WSAVA association, the Veterinary Society of Surgical Oncology,” says Kirpensteijn in an association release.

Members of the group are also developing practical tools for veterinarians to help improve treatment standards and better educate owners about cancer in pets.

The committee is chaired by veterinarian and oncology specialist Martin Soberano, DVM, who is credited for his efforts in pioneering veterinary oncology in Latin America. He is also founder and president of the Latin American Veterinary Oncology Society.

“The WSAVA Oncology Working Group aims to overcome global variations in oncology treatment and raise awareness of the different types of tumors affecting companion animals,” says Soberano in the release. “Many cancers in these animals also occur in humans, so we see an opportunity to improve the lives of both animal and human patients by raising standards of treatment for veterinary oncology patients.”

REFERENCE


"What’s great about SunBug is that they’ve been around a long time, and the people working in their design and construction have so much experience solving problems," Leef said in the release.

"[SunBug] manage[s] complications properly and quickly offered insight into how to install a special transformer for my site’s unusual electrical configuration. It’s one reason to hire a reputable local company. They happen to know the local inspector really well and how best to contact him, and how to file a dispute with local utility companies if it comes to that.”

The 19-kW system provides Heal Vet with 75% of the energy the practice uses in a year. Installing a solar power system has also protected the clinic from the rising costs of electricity.

Another of Heal Vet’s goals is to provide charging stations for electric vehicles, thus offering customers and the community green power. In support of this initiative, Leef recently purchased an electric car.
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2021 Practice Manager of the Year

This practice manager wowed judges from dvm360® and the VHMA with her unique leadership approach and solution-oriented mind-set.

By dvm360® staff

Editor’s note:
Some information published in the article announcing the winner in the July issue of dvm360® was removed for accuracy. This article reflects the most updated content.

Catherine Coloccia, practice manager at Bridgewater Veterinary Hospital in Bridgewater, New Jersey, has been named 2021 Practice Manager of the Year by dvm360® and the Veterinary Hospital Managers Association (VHMA).

“Congratulations to Catherine for all her amazing work as a practice manager throughout the ongoing pandemic,” said Mike Hennessy Jr., president, and CEO of MJH Life Sciences™, the parent company of dvm360®.

“Her motivational leadership style and her unique ability to step out of her comfort zone to identify and implement innovative solutions make her truly deserving of this award. Additionally, we would like to thank our friends at Nationwide® for their sponsorship of the Practice Manager of the Year Award. As a very loyal supporter of veterinary professionals since day one, this would not be possible without their greatly appreciated assistance.”

Adam Christman, DVM, chief veterinary officer for dvm360®, said in a press release, ”The practice manager truly is the navigator of the ship. Our clinics would be lost without an effective leader steering our hospital in the right direction for success. Congratulations to Catherine!”

Coloccia, who was selected from over 140 nominations, impressed judges with her maternal and motivational leadership style, as well as her ability to step out of her comfort zone to identify and implement innovative solutions.

“Outstanding practice managers have several attributes in common. They are committed to the practice, well informed, innovative, thoughtful, confident, and lifelong learners,” Christine Shupe, CAE, executive director of Veterinary Hospital Managers Associates told dvm360®.

“This year’s PMOY, Catherine Coloccia, exhibits all of these qualities. Her efforts to overhaul the practice’s dental services department benefited patients, clients, and the practice, and showcased her leadership and management abilities. We are excited to see how she employs her skills, out-of-the-box thinking, and dedication to ushering in change and improvements in the months ahead.”

Dressed to impress

Since becoming the hospital’s practice manager, Coloccia has been known for showing up daily in business attire and heels. She says staff members often joke that they can find her by the clicking of her shoes. Coloccia believes that dressing in heels and business clothing distinguishes her as an authority figure, but no matter how tall her heels may be, she’s always ready and willing to support her team during messy and challenging scenarios.

“Every single time the need arises, I will be there, in the trenches, to assist my team. I have held patients in heels, picked up poop in heels, vacuumed and mopped the floors in heels, cleaned cages in heels, and will proudly do whatever else the staff requires of me,” said Coloccia.

“I believe that in those moments, you are demonstrating a very true and raw sense of leadership that illuminates relatability and comradery.”

In addition to looking the part, Coloccia has worked diligently to make her hospital a better place for patients, staff, and clients. As of 2021, her hospital is now 100% paperless.

More about the contest

To be considered for this award, practice managers had to either nominate themselves or be nominated by a coworker or pet owner. Practice managers were judged on their lifelong learning, adaptions to change, leadership, and decision-making, as well as team motivation and management to qualify for the contest.

Once the contest closed on April 30, 2021, judges narrowed down the 10 top entries and then selected the winner. This year’s winner, Coloccia, will receive:

• 1-year membership to the VHMA or reimbursement for 2021 dues if already a member
• Complimentary registration to the 2021 VHMA Annual Meeting and Conference in Philadelphia, Pennsylvania
• A stipend of up to $1250 for traveling, lodging, and meals for the 2021 VHMA Annual Meeting and Conference
• Complimentary registration to any MJH conference of her choice
• 1-year appointment to the dvm360® editorial advisory board

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About VHMA

The VHMA is a nationally recognized thought leader and innovator in providing training, education, and resources to more than 4000 members and a trusted resource the veterinary sector relies on for industry insights, research, and advocacy to ensure performance at the highest levels. VHMA’s core purpose is to advance and support veterinary practice management professionals by developing professional competence, supporting and encouraging standards through the industry’s highest-level certification program, the Certified Veterinary Practice Manager, and providing individuals with a network for professional connection and support. For more information, go to www.vhma.org.
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Well-being
> Continued from cover

If you ask 10 children what they want to be when they grow up, there are sure to be some aspiring veterinarians in the group. However, the veterinary field is difficult to break into, despite its high desirability. According to the American Association of Veterinary Medical Colleges, veterinary schools turn away almost 10 individuals for every open seat. Once they are accepted, veterinary students happily put their lives on hold to focus on the rigorous academic schedule and fulfill their lifelong passion.

Fast-forward 5 years. Many of those same veterinary students, now working at their first practice, are unsatisfied with the career they wanted so badly and have lost their zeal for veterinary medicine. In fact, according to the 2020 Merck Veterinary Wellbeing Study, only 33% of veterinarians would recommend a career in veterinary medicine. The American Veterinary Medical Association (AVMA) reports that 40% of veterinarians are considering leaving the profession. The Merck study also revealed that well-being is lowest among younger veterinarians, with 54% of those younger than 35 years suffering or barely getting by. This brings us to the question being asked with increasing frequency: Why are veterinarians, and particularly young associates, so unhappy?

Many factors likely contribute to this complicated equation, including the following:

• **Workload:** In 2016, AVMA reported that small animal veterinarians saw an average of 76 pets per week, which seems an appropriate workload. However, an increasing shortage of veterinarians, along with the exploding pet population, has pushed the workload to an unmanageable burden. Add inefficient curbside protocols to the mix, and veterinarians are reaching their breaking point.

• **Salary:** According to AVMA statistics, the starting salary for new graduate veterinarians is roughly $85,000, and an American Animal Hospital Association survey of 600 veterinary practices reports an average salary of almost $108,000 for all veterinarians. However, veterinary salaries fall short when compared with those of other medical professionals. The 2018 Medscape Physician Compensation Report, which evaluated salaries of human medical doctors and specialists, reported that primary care physicians earned $237,000 on average, whereas specialists earned $341,000. Although veterinarians may not expect to earn as much as human physicians, the disparately high debt-to-income ratio is a sticking point.

A study published in the *American Journal of Pharmaceutical Education* reported that veterinarians graduate with the highest debt-to-income ratio compared with dentists, pharmacists, optometrists, and physicians. Physicians often graduate with a debt-to-income ratio less than 1, meaning that their starting salary is typically more than their debt load.

• **Age profile:** According to AVMA, millennials make up the largest proportion of veterinarians. The current veterinary population falls into the following age groups:
  - Millennials (ie, those born between 1981 and 1996): 35.1%
  - Generation Xers (ie, those born between 1965 and 1980): 34.6%
  - Baby boomers (ie, those born between 1946 and 1964): 29.9%
  - Silents (ie, those born between 1928 and 1945): 0.4%

This generational shift brings significant change, particularly in what motivates millennial veterinarians and makes them feel fulfilled and happy.

• **Pandemic-related changes:** The pandemic has resulted in new consumer and employee behaviors. Although a larger pet population has increased veterinary business, more veterinarians are looking for ways to work from home. With an increasingly unhappy veterinary population, finding and retaining talented associate veterinarians has become the overriding challenge for practices.

What motivates veterinarians?
To determine why veterinarians are unhappy, business leaders must first figure out what motivates them. Motivation results from an individual's passion and purpose. Veterinarians obviously do not lack passion. They have wanted to save animals since childhood—and still do—but are often unhappy about other areas of their chosen field. Many veterinarians do, however, lack purpose. They struggle with a sense of belonging and may not feel they fit in with their workplace culture and values. In fact, they may be completely unaware of their practice’s values and business goals.

Do money and benefits motivate veterinarians?
Many practice owners assume money will motivate associate veterinarians, and veterinarians' large debt load supports this assumption. However, a study conducted by the Center for Health and Wellbeing at Princeton University in New Jersey indicates otherwise. The study found that although low income correlates with unhappiness, emotional well-being does not progress beyond an annual income of $75,000. In other words, a veterinarian who makes $100,000 is unlikely to be happier than a veterinarian in similar circumstances who makes $90,000.

Job ads tout other benefits, such as more vacation time and a continuing education allowance, but these benefits do not provide purpose or belonging. Continuing education increases skill and expertise, but it is a legal requirement rather than a personal goal and often does not bring a sense of completion or fulfillment.
Maslow’s hierarchy of needs
The psychologist Abraham Maslow proposed a widely accepted theory about human motivation in the 1940s. According to Maslow’s hierarchy of needs, human motivation is based on 5 core needs (shown in Figure above).

- **Physiological:** Physiological needs include basic human survival needs, such as food, water, sleep, clothing, and shelter. A typical veterinary salary adequately covers these needs, which are necessary to move to the next level. Once these needs are met, additional resources (e.g., a higher salary) do not necessarily equal more happiness and usually do not serve as strong motivators.

- **Safety:** Physical, mental, health, and financial safety, which provide security, are the next lower-level needs.

- **Belonging:** Relationships with family, friends, and coworkers form the last lower-level need. In practice, veterinarians need to feel a sense of belonging to a “tribe,” or people with similar values. As a lower-level need, it is critical to an individual’s happiness and motivation.

- **Esteem:** Higher-level needs are not essential but can provide greater motivation. Esteem needs include self-respect (i.e., believing one is valuable and deserves dignity) and self-esteem (i.e., confidence in one’s potential for personal growth and accomplishments). Esteem is based on respect from others and self-assessment, which can lead to self-confidence and independence.

- **Self-actualization:** Also referred to as self-fulfillment, the highest motivating factor involves reaching one’s full potential. Self-actualization needs include education to refine talents or reach an expert level, caring for others, and expanding one’s horizons through ventures such as travel or culture.

So, why are veterinarians unhappy?
Maslow’s theory provides significant insight into veterinarians’ motivating factors, which can help business leaders understand why they are so unhappy.

Veterinarians lack a sense of belonging
According to Maslow’s hierarchy of needs, all lower-level needs must be met for veterinarians to be minimally happy. If veterinarians make an average salary and have their safety needs met, the first 2 levels are covered, leaving the need to belong. However, if a practice has an unsupportive—or worse, toxic—work culture or simply makes no effort to encourage team relationships, this need will be lacking. People are naturally motivated by close relationships with their work family. Achievements, such as mastering a new surgical technique, are more exciting when shared, and a tribe mentality can make the bad days more bearable.

If a practice cultivates a culture of belonging, associates will have their lower-level needs met, which should equate to reasonable happiness. However, reaching only the minimal happiness benchmarks likely will not satisfy goal-oriented veterinarians. For higher-level motivating factors to kick in, veterinarians must also meet their needs for self-respect; self-esteem; and, ultimately, self-actualization. Without clear opportunities for veterinarians to meet these needs, practices will continue to struggle with unhappy associates.

Veterinarians lack clear goals
Each step of a veterinarian’s journey—a bachelor’s degree, veterinary school admission, veterinary degree, and perhaps specialty certification—is a clear objective that helps them to reach their ultimate goal. Veterinarians have been achieving goals their entire lives. But once they achieve the career that has been their long-term focus, they no longer have a clear goal. Most people would assume that new veterinarians would relax and enjoy their success. But many veterinarians are goal junkies who always need a challenge, and they may feel let down if they do not have another goal.

How do younger veterinarians fit into the picture?
Now consider the current generation of millennial veterinarians—overachievers who desire instant gratification. Millennials are not used to long-term planning, become impatient without immediate reward for their efforts, and feel frustrated when they do not have clear goals to work toward. Many millennials work in practices where they do not feel appreciated or do not have a sense of belonging. Veterinarians are burning out (or worse) at an alarming rate, partly because the reality of veterinary practice does not match their expectations. This theory was confirmed by a recent burnout study by Veterinary Integration Solutions, which revealed professionals younger than 30 are more vulnerable to burnout; respondents in the younger age group were found to be less enthusiastic and more physically exhausted than their older peers.

When you apply Maslow’s hierarchy of needs, millennials clearly are lacking low- and high-level needs that contribute to their motivation. This goal-oriented generation needs to be motivated differently.

How can veterinary business leaders develop happy veterinarians who are motivated to succeed?
Applying Maslow’s hierarchy of needs to veterinary leadership, owners and managers can ensure their associates’ needs are met by doing the following:

- Offering competitive compensation, so that basic needs are covered
- Cultivating a culture of belonging, so that associates feel part of a “tribe”
- Sharing core values with team members, so they understand the practice’s mission and their purpose
- Helping associates set measurable, rapidly achievable goals
- Fostering a culture of continuous improvement, rather than waiting, for corporate change management
- Creating a positive and immediate feedback loop, practicing radical candor for giving and receiving feedback

Many frontline staff are unaware of their practice’s high-level business goals or do not understand how their work contributes to those goals. Veterinary leaders can incorporate goal stacking to help their associates set clear goals that align with the practice’s business goals. Goal stacking includes helping associates identify goals in the following categories:

- Clear short-term goals, which can be achieved daily
- Operational chunked goals, which can take weeks to months to achieve
- High-level, more difficult goals, which may take from 1 to 10 years to achieve
- Transformative goals, which may take a lifetime

Practices can also help associate veterinarians set personal goals, such as financial or educational goals, which may increase motivation.

Creating an environment of purpose and belonging and helping veterinarians to identify clear goals can provide the motivation and foster the happiness that veterinarians desperately need.

Ivan Zak, DVM, MBA, is CEO of Veterinary Integration Solutions. His personal journey from practicing veterinary medicine for 12 years and experiencing severe burnout led him to explore psychological triggers of burnout and business methodologies to eliminate them.

References available at dvm360.com
Evolving industry

Some successful practices—those in a decent-sized city with a stable medical staff—have taken the huge step to expand to 24/7 operations only to see their pool of doctors disappear before their eyes, precipitating a step backward to a daytime-only, urgent care model.

What's happening and why?

The problem is not that growth in pet ownership and the deepening human-animal bond have outpaced the supply of practitioners to meet such needs. That shift has been gradual—it began in earnest 5 to 8 years ago—and subtle enough to not have industry-shaking consequences. It is not that burnout and compassion fatigue have resulted in a meaningful drop in our workforce. (See related cover story) This, too, has been a relatively consistent force in our industry for many years. Even the tragic reality of our industry’s suicide rate cannot be a significant factor. Despite the fact that even 1 case of suicide related to the stress of our industry is too many, this horrible issue has only relatively recently found its way to the media and is now being talked about throughout our profession; this does not mean it is affecting a larger number of our colleagues.

It certainly is not that the affordability of veterinary care has inadvertently caused so many people to own pets that we just cannot keep up with the demand. The quality and cost of care have never been higher, and those members of society with less money have never been further away from affording the joy of a family pet. This is also at a time when more people than ever have less money. A possible explanation? Something our industry has taken years to finally learn could ultimately be our undoing.

Anyone who has attended an industry conference in the past 2 years has experienced the impact that talking about work-life balance has had. The message is everywhere: Take better care of yourself; work smarter, not harder; use higher average transactions rather than higher volume to reach financial benchmarks; seek flex time, part time, less time, etc. I am not criticizing the idea that we desire to be healthier. We should not have to sacrifice family and important events just because Mrs Jones’ dog is sick, and we do not have to make ourselves available at all times to run a responsible business.

Our human medicine counterparts started figuring this out long ago as allied industries like dentistry and ophthalmology fit their comfortable practices into 4-day workweeks. Even family practice providers have discovered how the influx of urgent care facilities has made it possible to spend an appropriate amount of time with patients instead of 6 to 8 patients every hour and fast-tracking their concerns into the most important 1 or 2 things.

Veterinarians invest 8 years of college into their careers. They carry the immense burden, daily, of knowing that the limitations of our medicine and the fact that we typically provide "womb-to-tomb" care will result in as many sad endings as happy ones. We deserve the right to work just 36 to 40 hours each week and to watch our kids’ school plays and sporting events. We also deserve not to go home every night so exhausted that we cannot recover from those challenging dark days in the clinic.

The ripples of evolution

So, if this is so great for us, what is the downside? One practice I worked for is a great example of how the evolution of our industry can have ripple effects. Over a matter of months, this 6-doctor practice experienced attrition for the same reasons many others have—geographical relocation, dissatisfaction in providing after-hours care, and family-related shifts in the days and hours staff are available or willing to work—and is now down to 2 doctors.

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CKD, chronic kidney disease.


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Decreasing our veterinarian staff so drastically so quickly is devastating, especially in an environment where job openings greatly outnumber candidates. A practice known for client accommodation and accessible fees found itself in a position where some of those things had to be reassessed. Logic would suggest that a practice that commonly squeezed patients in and double-booked appointments would be faced with doing that even more during a doctor shortage, and that better leveraging staff, instituting technician appointments, and ensuring ever-better customer service in an attempt to hold on to clients would be the only avenue that made sense. Or maybe not.

What if that extra demand on the practice was just what it took to finally push staff past the breaking point and decide that they just could not give anything more without joining our industry's burnout, career change, or suicide statistics? What if that practice stopped squeezing patients into the schedule, started placing restrictions on things like transfers, and limited how it manages the end of the day to ensure everyone gets out on time? Because they were operating at half-staff, the employees began to believe they were so busy that they no longer had to run a business competing for new clients or stressing over retention of existing ones. Client demands began to feel like an imposition, and the cross-section of all our practices that is made up of the very high-maintenance pet owners no longer seemed like something they wanted to bother with.

Clients have left practices for many reasons, including higher fees, lack of accommodating service, and an overall feeling that they now have to jump through hoops for care that used to be easy to get. Those clients must go somewhere, and that is almost certainly a practice that also has little or no room for more clients. As quickly as you can snap your fingers, practices all over the nation are competing for more clients. As quickly as you can imagine, those clients must go somewhere, the employees begin to feel like an imposition, and the cross-section of all of our practices that is made up of the very high-maintenance pet owners no longer seemed like something they wanted to bother with.

**A shift in client expectations**

For all those conference attendees, journal readers, or simply anyone remotely paying attention, this is just 1 of the 2 huge trains running at breakneck speed through our industry. The other is the fact that we are poised to experience a seismic shift in client expectations as millennials take their place as the largest pet-owning sector of society. They will do so not only because they will soon outnumber other generations but also (and perhaps more significantly) because they have, in large numbers, prioritized pet ownership over having children. They have caused a huge drop in divorce rates in our country simply by not getting married in the first place. Instead of becoming a part of the standard 2-child nuclear family, they are more likely to set aside any interest in starting a family and consider their 2 Labradoodles to be all the kids they will ever need (or want).

Sounds like a big win for the veterinary industry, right? It means more household pets and more clients with discretionary spending money to care for them because those pet owners are not bogged down by the high cost of raising a child sounds great. Unfortunately—and no one seems to be talking about this—that train is running at full speed on a collision course with the work-life balance train.

First, our industry does not seem equipped to handle an influx in clients and patients as outlined above, unless we build a dozen veterinary colleges overnight and start spinning out more graduates. Most importantly, regardless of how many veterinarians are out there, what the new generations want and expect directly conflicts with an industry moving toward taking better care of ourselves.

**Understanding young pet owners**

Millennials and Gen-Zers want high-quality care for their fur babies, but they also always want it available and with complete access. They do not want to leave messages and get a callback tomorrow—they want to email or text you or, even better, use an app or portal unique to your practice, and they want a response in real time.

Their fur baby with a painful ear infection at midnight is no different from the boomer generation’s panic to have their infant’s broken arm seen immediately. This is happening while veterinary ER practices are disappearing across the country, dramatically limiting the options for young pet owners to receive the care they demand. Finding doctors eager to work overnight and on weekends is not easy.

That loud sound you hear is these 2 industry shifts running smack into each other. There is no certainty as to who will pick those pieces up and what that will look like.

**Where do we go from here?**

There is no denying the market forces of the next 2 generations—that is an unstoppable force headed our way. Additionally, it would be regressive to even suggest that we reconsider the shift toward work-life balance—it has taken many years and many lost colleagues (figuratively and literally) to finally realize this is important. It is an immovable object now, and rightly so.

The answers may be in subtle areas. Manage your schedules more conservatively and strive to get your team members home on time, but do not draw any lines in the sand. Create guidelines rather than regulations and keep some flexibility in your management. Continue to look for licensed technicians, but uptrain your assistants and leverage them more. Explore telemedicine to the degree that your state laws allow and invest in the technology to change the ways that clients can communicate with you. If you do not have a staff member solely focused on electronic communication (appointment requests, emailed reminders, records transfers), it is time you did.

Finally, this is not the time to allow your services to be limited beyond the constraints of your schedule. Authorize legally allowable refills of chronic medications so your team can fill them without your direct involvement in between annual or medically necessary visits. Resist the temptation to become more restrictive in requiring a certain amount of advance notice to fill those prescriptions. Remember who built your practice—it was not you, it was your clients.

**The bottom line**

The industry is changing quickly, and this is one moment among many that have come or will do so. Mistaking your momentary busyness for comfortable long-term stability is something I caution against—we will hit another economical blip someday, and the employment market pendulum will eventually swing in the other direction. Anyone not playing the long game and always looking 5 to 10 years into the future is likely to someday find themselves in the past.

Longtime dvm360® magazine and Firstline® contributor Kyle Palmer, CVT, is hospital manager for VCA Salem Animal Hospital in Salem, Oregon, as well as a practice management consultant for several other hospitals.
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Minimally invasive surgery and the GP: Getting started

Veterinary surgeon Dr Chris Thomson answers some common questions regarding learning curves, feasibility, how to get started, and basic equipment needs.

By Sarah Moston Dowdy

The benefits of providing minimally invasive surgery (MIS) versus conventional surgery for patients are well known (eg, less pain and scarring, lower risk of infection, and shorter recovery time). However, the perks for general practitioners (GPs) and practices might be less clear.

During a recent Fetch dvm360® virtual conference session, Chris Thomson, DVM, DACVS-SA—who specializes in MIS, surgical oncology, and interventional radiology with the Veterinary Specialty Hospital in San Diego, California, and a clinical researcher with Ethos Discovery—began by spelling out some of the human- and business-based advantages of making the leap into laparoscopy. Considering the benefits to patients, perhaps the most obvious fact is that laparoscopy can elevate a clinic’s standard of care. In turn, this can expand the clinic’s market and improve revenue as new clients are gained. On a more personal level, Thomson noted that learning laparoscopy can provide experienced GPs with a new challenge and increased job satisfaction, also offering fresh avenues for team members to become more engaged.

Still, there is clearly a large, worrisome gap of time and financial investment between deciding to add MIS to your general practice and reaping the benefits listed above. Thomson used his session as an opportunity to flesh out some of the fuzzy details, covering topics like learning curves, feasibility, initial steps, basic equipment needs, and how to maximize your investment in MIS.

Can anyone learn MIS?

“It’s scary to go from something that you’re really good at or familiar with and then jump into [MIS],” said Thomson. “But with appropriate practice and mentorship, the learning curve isn’t that steep.” He cited a 2017 study¹ that retrospectively assessed the rates of intraoperative complications associated with supervised fourth-year veterinary students who performed laparoscopic ovarietomies (OVE). The type of training, said Thomson, was no different than that for traditional OVE. Students received classroom instruction and participated in wet labs. Ultimately, even these novice surgeons were able to perform laparoscopic OVEs safely, efficiently, and with rare minor complications.

Is MIS feasible?

This question led to a quick review of another 2017 study,² which evaluated the economic and clinical feasibility of introducing rigid endoscopy and laparoscopy at a small animal general practice—specifically, a 2-veterinarian general practice clinic in southern California. The cost of equipment and training, as well as the revenue generated, procedures performed, surgery time, complications, and client satisfaction over a 12-month period, were evaluated.

The 2 veterinarians performed 78 endoscopic procedures during the first year, including OVE, prophy-lactic gastropexy, and video otoscopy, with a total revenue of over $50,000 and no major complications. The cost of equipment and training that year was just under $15,000 (most equipment was financed through a 5-year lease at around $10,000 per year). Although Thomson said the yearly lease did not include other disposables required for the procedures, he noted that the new equipment and training costs would pay for themselves after 2 years.

Where do I start?

Thomson discussed 4 main steps for getting started with MIS, but we will save the fourth for later.

1. Research and connect. “It starts with delving into the research and figuring out exactly what you want to do within the realm of [MIS],” said Thomson. As the webmaster for the Veterinary Endoscopy Society, he vouched for the site’s usefulness in connecting members with other veterinarians interested in MIS (from newcomers to experts) and encouraging interested practitioners to take advantage of its webinars. The research phase should also involve considering potential vendors. “Especially in veterinary medicine, the vendors get really excited about new practitioners and new clinics that are trying to get into this field,” said Thomson. “They’re at bringing items to your clinic to help you get hands-on time with the equipment, discuss pros and cons, and discuss what would be the best setup for your clinic.”

2. Gain hands-on experience. Thomson recommended connecting with a nearby GP or surgeon who can act as a mentor and allow you to shadow them, perhaps with them even coming to assist when you are embarking on your first few cases. “There are a lot of subtle tips and tricks that can’t be garnered from simply looking at textbooks and watching videos,” he explained. “Getting hands-on experience with mentorship can really increase the viability of bringing [MIS] into a general practice.” He said wet labs also are important. “There are a ton of great courses offered through Colorado State University Translational Medicine Institute, the University of Georgia College of Veterinary Medicine, and the American College of Veterinary Surgeons that can give you some confidence as you approach your first cases,” Thomson said. He added that although the pandemic has made access to wet labs more difficult, he has heard that the situation should be improving soon.

3. Buy or lease equipment. “This is where you really make that investment into deciding what exactly is going to be best for you and your clinic,” said Thomson. “This isn’t a cheap thing to delve into. This is something that if you’re interested in it, you really have to commit.”

What equipment do I need?

But what does it take to really commit? According to Thomson, the most basic setup requires 4 main pieces of equipment: a telescope, camera, light source, and monitor.

Telescope. Thomson said the standard rigid endoscope used in veterinary medicine has a 30-cm telescope that is 5 or 10 mm in diameter. He called it the “workhorse” for any laparoscopic procedure. Another facet that needs to be considered is the angle at the end of the telescope, which is typically either 0° or 30°. The former books straight ahead, so whatever you are pointing the tip of the telescope at is what you will visualize, said Thomson. There is no need for angulation adjustments. The downside, he continued, is that if you are using this for single-incision laparoscopic surgery (SILS) and have multiple instruments from a single port, significant clashing can occur as your instruments are all trying to work in a smaller field. That’s where the 30° scope comes into play,
but the challenge here is that you are not always looking straight ahead to where you are pointing the camera and will need to understand triangulation. “Wherever you’re pointing that camera, the telescope can actually look 30° completely around that,” Thomson explained. In addition to having a larger field of view (which can be particularly helpful in procedures like thoracoscopic lobectomies, so you can look around the thoracic cavity), your telescope will be offset, relative to other instruments. The telescope will be placed at a different angle when compared to your working instruments, so there is more freedom of movement for the instruments that are performing the surgery.

**Camera.** The camera converts the analog image (ie, what the lens sees) into the digital image that is projected onto the monitor. Thomson noted that there are several options regarding cameras. For example, some have digital Zoom and others do not. Common brands that offer laparoscopy cameras in the United States, include Karl Storz, Arthrex, and Stryker. Many of these companies have varying advancements and market focuses (eg, laparoscopy, arthroscopy, flexible endoscopy), so speaking to a local representative can be useful to determine what would best fit your specific goals.

**Light source.** Although xenon lights used to be the standard, most of what is sold today is LED, because they are superior to xenon lights in terms of energy efficiency and duration of use. (Thomson said the lifetime of an LED light is roughly 20 times that of a xenon light.) So, although up-front costs are higher, using LED will likely save you money in the long run. Another valuable tip from Thomson: Get a right-angle connector for the light post. Since the light post for illuminating everything inside the abdomen connects to the telescope, having the light post positioned in a more ergonomic spot will minimize additional instrument clashing. “It can be a true lifesaver in getting the camera into the position you want without pushing other instruments away,” he explained. “The light post is normally sticking straight out from the telescope, but the right-angle connector can make it parallel to the scope and camera, which can help with efficiency of movement and workflow.”

**Monitor.** Thomson noted that there is a wide variety available, but that most in veterinary medicine will use a tower setup. “It’s very important to note that anytime you’re going to be purchasing equipment like this, it’s vital that everything talks to each other appropriately—that the camera is talking to the camera computer, and that that computer is talking to your monitor, and that they’re on the same scale,” he explained. “There’s really no value in purchasing a 4K resolution camera if your monitor is only going to be 720p [resolution in pixels].” In other words, if you make an investment in upgrading the camera, make the same investment in the monitor and so forth to ensure your various equipment components are compatible and you’re able to use them to their full potential.

**What other accessories and disposables will I need?** Although the above pieces of equipment will be your main investments, there are other MIS-specific accessories and disposables to consider.

**Gas.** Insufflating gas into the abdomen is key to providing working and viewing space during laparoscopic procedures, and in veterinary medicine carbon dioxide (CO2) is the most common choice because of its safety and low cost. Despite its usefulness, there are downsides related to CO2 pressure and absorption, so it’s best to use it as sparingly as possible. “The higher you go with insufflation, the more effects you’ll see in the cardiovascular status of the patient,” said Thomson. “Specifically, the high capacitance vessels within the abdomen, like the caudal vena cava and renal veins, are going to be greatly impacted if you end up using a high pressure. Typically, for most of our patients, whether large or small, 8 to 10 mm Hg is sufficient to be able to do what you need to do.” He added that you can avoid insufflating gas altogether by using an abdominal wall lift, an external device that lifts the abdominal wall up and out, but the working field and visual space may not be as good.
Another tip from Thomson to increase your visual and working space: Utilize patient positioning (and gravity) to your advantage, to help keep insufflation levels low. For example, if you’re going to perform a laparoscopic cryptorchidectomy in the caudal half of the patient, he said it can be helpful to actually elevate the caudal half, so the gastrointestinal tract falls away. Similarly, if you’re performing a laparoscopic OVE, positioning the patient in either oblique right or left lateral recumbency can give you easier access to the structures you need.

**Ports.** These are what you use to create the opening within the body wall to allow you to pass the camera, as well as other instruments, Thomson explained, and there are both disposable and reusable options. The former are pricier and were designed for human medicine, but the reusable options have a downside too. They’re heavier, which can pose problems when working with pediatric and feline patients, said Thomson. There are other design options to consider as well—namely, multiport versus SILS ports. The SILS ports comprise 3 different ports but require only 1 incision and have been shown to reduce surgery times once you get past the learning curve. Unfortunately, the learning curve is significant. “For your earliest procedures,” advised Thomson, “it might be easiest and best to start with a multiport and consider bringing in a SILS as you move into more advanced procedures.”

**Instruments.** The instruments needed for MIS are similar to those needed for conventional surgeries. Thomson offered some expert tips for these common categories.

1. **Forceps:** Although there are several options for forceps, Thomson specifically singled out biopsy forceps, because they are highly beneficial if you plan on doing laparoscopic liver biopsies. “That’s one of the most basic procedures I think a lot of people should consider, if you’re going to be starting minimally invasive surgery,” he advised. “Biopsy forceps can be valuable at making that quick procedure.”

2. **Scissors:** If you’re planning to do any suturing in the abdomen, Thomson said it’s important to have suture scissors that can grasp onto the suture.

3. **Needle drivers:** On a related note, Thomson said he believes laparoscopic suturing is incredibly valuable and underutilized in veterinary medicine. “If you start to do a lot more laparoscopic minimally invasive surgery,” he continued, “it is, in my opinion, absolutely vital that you learn how to do laparoscopic suturing. This is going to be a lifesaver if you ever get in a situation where your ligature or your endoscopic clips aren’t available or aren’t working.” Similar to working with a SILS port, this is a skill that requires a lot of practice but will become increasingly important as you advance in MIS.

4. **Retractors:** “The blunt probe is probably the most commonly used instrument that’s going to be necessary for anyone who’s performing minimally invasive surgery,” said Thomson. “That blunt probe really replaces your finger in the abdomen, so it’s used for your dynamic feedback, as well as to retract things.” If you plan on doing anything with gallbladders or adrenals, he recommended using a fan retractor, which can effectively move things away (like the kidney and liver).

5. **Suction and irrigation:** Similar to conventional surgery, Thomson said there is always a benefit to having both suction and irrigation in MIS.

6. **Retrival bags:** “If you’re going to be pulling anything out of the abdomen, whether it’s neoplastic or even nonneoplastic ovaries, you could argue it would be of benefit to use a retrieval bag,” said Thomson. “Or if there are any concerns that something is infected, it’s valuable to have a retrieval bag—that way, you’re not seeding any neoplastic cells or infected cells within the body wall.” Surgical gloves offer a low-cost option. For example, if you’re performing an adrenalectomy on a cat, Thomson said you can invert the thumb portion of the glove and use it as a retrieval bag.

**Energy devices.** “One of the biggest changes in surgery in the last several decades has been the advent of electrosurgery,” Thomson explained, “and that’s no different in [MIS]. I think the use and benefit of electrosurgery really makes a procedure much more feasible and makes a night-and-day difference, in terms of how you can approach things and how much bleeding occurs. It really does affect your visualization to have adequate hemostasis.” Even for entry-level surgeons, Thomson said, energy devices are “very beneficial.”

1. **Monopolar instrument:** Many clinics are bringing in monopolar devices for surgeries, and Thomson noted that you can adapt almost any of them for use in laparoscopic surgery. They are commonly used for dissection within the abdomen and can seal vessels up to 2 mm in size. However, caution is necessary, because if there is any scratch or change to the lining of the instrument you are using with the monopolar device (eg, endoscopic shears, endoscopic dissectors), you can cause burn injuries.

2. **Vessel-sealing device:** Thomson considers this to be one of the most important instruments for anyone entering MIS. “It increases the efficiency of everything—even down to the basic laparoscopic OVE,” he explained. “If you don’t have this, you really do have to expect to learn endoscopic suturing.” These devices can seal vessels as thick as 7 mm and contain blades so you can cut tissue after it’s been sealed.

3. **Ultrasonic dissector:** Thomson is less familiar with these but said that a harmonic scalpel can replace a LigaSure or vessel-sealing device in many situations. “There are some people who will argue that there’s a significant difference between using an ultrasonic dissector versus a vessel-sealing device,” he added, “but generally they can perform the same [function].”

**Maximize your investment in MIS**

The fourth main step for getting started with MIS overlapped with Thomson’s first key to success: effective marketing. Everyone on your team needs to be able to communicate the value of what you’re doing. For example, when a client calls the front desk staff to ask about spays, they should be able to explain why you perform laparoscopic OVEs. When that client meets with a veterinary technician, that team member should echo (in greater detail) the benefits discussed by the front desk staff.

Don’t assume that the marketing ends with the procedure. “One of the most effective ways that something like this gets communicated is through pictures and videos,” Thomson advised. “If you can capture any pictures or videos from the surgical procedure itself and share that with the client, you know as soon as they get home that’s going to be shared on social media. The marketing is really just performing these procedures and allowing the word to get spread through the visual representation of what you’re doing.”

The second key to success, particularly as illustrated by the 2017 feasibility study, is to use your equipment frequently. “Not only were [the 2 veterinarians] using it for laparoscopic [OVE] and eventually laparoscopic gastropexy, but they also used it to do diagnostic video otoscopy,” Thomson explained. “With the number of dogs that present in general practices with ear infections that are difficult to [treat], you can pop a scope in to demonstrate exactly what’s going on in that ear, to visualize [whether] there are any masses, foxtails, or foreign bodies. That’s something you’ll use incredibly frequently.” As a bonus, you can use it to give the client evidence as to why continued treatment and follow-up appointments are necessary. All you’ll need to purchase is the video otoscope, because the only difference in setup between a laparoscopic OVE and video otoscopy is the telescope.

Finally, don’t forget to charge accordingly for your investment. For example, Thomson said GPs who have done this successfully have increased charges for laparoscopic OVEs by 25% to 50%, depending on the location and market.
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The itchy cat challenge
Diagnosing and treating pruritus in cats can be difficult, but it is a hurdle that veterinarians can overcome. Here is how.

By Amanda Carrozza

It is a tenet of veterinary medicine that bears repeating: Cats are not small dogs. Veterinary professionals cannot extrapolate methods of diagnosis and treatment for dogs and attempt to treat cats the same way. “When it comes to cats, make no assumptions,” said Ashley Bourgeois, DVM, DACVD, of the Animal Dermatology Clinic Portland in Oregon.

This is especially true when it comes to feline dermatology, a subject Bourgeois knows well. “Cats are often forgotten,” she told attendees during her lecture at the Fetch dvm360 virtual conference in May of 2021. “We are limited on the tools we have to treat itchy cats. And cats can be tricky—both getting them into the clinic and even having owners recognize there is a problem.”

Do not assume it is psychogenic alopecia
Too often, veterinarians assume a cat presenting with bald spots or excessive grooming is suffering from a behavioral disorder—particularly psychogenic alopecia. “Obsessive grooming is much more often from pruritus than OCD or just being stressed,” Bourgeois explained.

She recalled a 2006 study in which 21 adult cats with a presumptive diagnosis of psychogenic alopecia were referred. After performing complete behavioral and dermatologic examinations, it was found that only 2 cats had psychogenic alopecia. Medical causes of pruritus were identified in 16 (cats 76%) and an additional 3 had a combination of psychogenic alopecia and a medical cause of pruritus.

“When I talk to behaviorists, it is much more likely they want overgrooming cats referred to a dermatologist or have an allergic work-up performed,” Bourgeois explained. “In order to claim psychogenic alopecia, we have to exclude all hypersensitivity disorders and regular causes of itch. Psychogenic alopecia is going to be a rare diagnosis.”

History taking is the first step
According to Bourgeois, the importance of properly capturing a cat’s medical history cannot be overstated. “A huge portion of how you work up your diagnosis comes back to history and really making sure that you are asking the right questions,” she said.

Crucial questions Bourgeois recommends asking:
• How old was the cat when clinical signs started?
  – Was this a young cat that was itching, scratching, and having gastrointestinal issues? Or did this cat not have issues until age 15?
• What flea prevention are you using for this cat?
  – Are the other cats and dogs in the home using flea prevention? “Make sure you know exactly when it was given and what the other pets are taking,” she stressed.
• Is your cat exposed to the outdoors in any way?
  – If they are 100% indoors, is there a dog in the house that goes outdoors?
• Do you notice a seasonal component? Even if the symptoms are year-round, are there times of the year when it seems worse? “It doesn’t have to be all or nothing,” Bourgeois said. “Maybe the cat is always itchy, but in spring and summer it catapults into a much higher itch level.”
• What therapies have worked?
  Maybe a therapy worked for a while but now does not, or there was a therapy that the client does not wish to continue. “It is important to know what worked in the past,” she added. “Maybe a cat responded well to steroids, but we don’t want to use steroids anymore because of adverse effects. If they are responsive to steroids, though, it shows us it is not psychogenic alopecia.”
• What areas are most affected?
  – Is the patient just a belly licker or does it chew on its paws?
  “Knowing the areas the owner identifies as a problem is essential because knowing the distribution of lesions is helpful in knowing where to go in your workup,” explained Bourgeois.

Identify what itching really is
Owners may assume an itch simply means that the cat sometimes scratches, but pruritus can present in a variety of ways. “Do not just ask the owner whether the cat is itchy,” Bourgeois directed. “We cannot identify what itch is from such a broad term.”

Get more specific by asking the client whether the patient:
• Grooms excessively
• Gets hairballs. “Because cats are isolated creatures, the owner might not see them itch, but I have had owners notice that their cat only gets hair balls in the summer because they are overgrooming in private. But when we moved into seasons where they weren’t allergic anymore, we did not get hair balls,” she explained.
• Chews at their limbs or paws.
• Scratches
• Displays head shaking.
• Pet owners do not think of this characteristic as itch itself.”

Bourgeois said. “Always wants you to scratch them?”

Master the dermatologic exam
Bourgeois suggested attendees consider implementing Fear Free tactics when working with feline dermatology patients. “Dermatology is a chronic disease process most of the time and one that needs frequent veterinary visits to keep under control,” she said.

Little changes that make a big difference:
• While obtaining the history from the client, open the carrier and let the cat explore.
• Consider the touch gradient. “All that really means is that you are taking your time and keeping contact with the pet,” she explained. “This alleviates the shock of the back and forth of being touched and not touched.”
• Allow the cat to hide. If you have a fearful patient, have pheromone-sprayed towels in the exam room.
• Leave the more invasive elements until the end, such as the otoscope, facial, and oral exams.
• Examine the cat within the carrier with the lid removed.
• Have plenty of treats and toys on hand. “There are lots of cats that respond well to that stimulation in a strange environment,” Bourgeois added.

Allergic work-up recommendations for the itchy cat
When it comes to diagnostics, one of the most beneficial components is cytology. “I say cytology everything,” Bourgeois declared. “It tells us a lot of information, even if that information is boring. If there was no infection, that is still good to know.”

Scraping and parasiticial trials are important tools, too. “Sometimes you need a few months of having them on good-quality flea control to know whether flea allergy is a component or if they had some form of lice we couldn’t find through scraping,” she explained. Dermatophyte culture is advised for a cat that is losing hair. Do not
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forget to biopsy when necessary and obtain additional staining to rule out that an organism is not causing the issue. “Lastly, lab work monitoring as a systemic check-in is always a good idea,” Bourgeois added.

When to consider adverse food reactions
Bourgeois created a scenario for attendees: Assume the patient is already on strong flea protection and that it is a younger cat that has suddenly started to break out with infections around the head or neck and does not overgroom. Discussions surrounding a patient’s diet can be sensitive, she warned, but remain important. “There are so many opinions on diets and owners can get very protective of what they are feeding their cats,” she said.

Owners often equate a high price tag with high quality. “Even if it is the best chicken in the world, if your cat is allergic to chicken, they will still react to it. Take a step back and a deep breath when owners get defensive,” Bourgeois advised.

For feline patients with a suspected food allergy, Bourgeois tends to favor hydrolyzed options. “To me, it is one of the gold standards in trying to rule out food allergies in cats.”

Again, cats are not small dogs
Cats tend to display allergies in very peculiar ways, but a veterinarian with a strong sense of the patient’s history and a proper diagnostic workup can effectively pinpoint the causes and prescribe a treatment for long-term relief. There is one way in which canine and feline allergies are very similar, said Bourgeois. “Communication and frequent rechecks are foundational to success. We can treat these cats to have a good quality of life if we get the owners on board and we work them up appropriately.”

Amanda Carrozza is a freelance writer and editor in New Jersey.

REFERENCE

Image Quiz
What is causing these skin lesions?
A Frenchie with intervertebral disc disease has recently developed skin lesions. What’s the cause?

By Judy Seltzer, BVetMed, MRCVS, DACVD

A 2-year-old female, spayed, French bulldog has no previous history of skin disease but has developed these skin lesions over the last 1 to 2 months. The only current medication is prednisone 0.5 mg/kg/day, prescribed by a neurologist, for the past 6 months for disc disease. The lesions are nonpruritic and firm on palpation.

diagnostic tests such as cytology, skin scrape, and fungal dermatophyte test medium/culture should be performed to rule out other possibilities. A skin biopsy will confirm the diagnosis.

What disease is the most common underlying cause of calcinosis cutis?

a. Hypothyroidism
b. Pemphigus foliaceus
c. Cushing disease
d. Cutaneous lymphoma

The answer is C (Cushing disease). The most common underlying cause is hyperglucocorticoidism, or elevated levels of steroids in the body. This is often the result of a metabolic disease or imbalance such as Cushing disease, which causes the body to produce too much internal cortisol—or long-term therapy with corticosteroids. In this case, the steroids were used for back pain, but we will often see calcinosis cutis develop in dogs on steroids for allergies, chronic skin conditions, autoimmune/immune-mediated diseases, irritable bowel disease, and neoplastic diseases.

The best treatment is to remove the underlying cause. In this case, we would need to taper and eventually stop the oral steroids. With the help of this patient’s neurologist, we are tapering the steroids and starting alternative medications for the back pain. In the case of Cushing disease, the disease needs to be treated with trilostane or mitotane. Addressing the secondary bacterial infections is very important, because the skin often ulcerates during resolution of the condition. A skin culture is recommended to determine the best antibiotic to treat the secondary deep pyoderma. DMSO (dimethyl sulfoxide; 90% gel) can be used topically, because this may increase calcium mobilization to the skin surface and/or systemic absorption.

Overall, the prognosis depends on the underlying cause and how advanced the skin condition has become. The skin can return to normal in some cases, but if dermal ossification (essentially the skin becoming bone) has occurred, it will be difficult to reverse the skin changes.

Judy Seltzer, BVetMed, MRCVS, DACVD, graduated from the Royal Veterinary College in London, England and completed her residency in dermatology at the University of Florida in Gainesville. She has been working in her home state of New York since 2009, currently at BluePearl Veterinary Partners in New York City. She and her husband have a baby girl and 4 cats and enjoy traveling, fall festivals, winter activities, and dining out.
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Heatstroke involves multiple risk factors

During the hot months, it’s important to know which cooling therapies prove most effective in pet patients.

By Patricia M. Leff, DVM

It’s that time of year when the temperature is rising and many veterinary hospitals are treating patients affected by heatstroke. Heatstroke is defined as severe pyrexia, with a dog’s body temperature rising to 104.9-109.4 °F. This results from exposure to elevated ambient temperatures that impair the patient’s ability to dissipate the heat. These temperatures may be seen in pets that have been exposed to prolonged heat, such as those left in turned off cars or those exercised outdoors on dangerously hot days. As a result, they are less able (as seen in brachycephalic breeds) or unable to cool themselves down.

A dog’s normal temperature is maintained by a thermoregulatory center in the hypothalamus. As a dog’s temperature increases, the thermoregulatory center sets into motion the various methods for cooling the animal: evaporation, conduction, convection, and radiation. Panting is one way in which the pet can cool itself through evaporation; a second method is achieved when the pet lies on a cool surface and is cooled by conduction. Furthermore, the hypothalamus triggers a response to the increased body heat. The body constricts blood flow to the kidneys and spleen, the heart rate quickens, the blood vessels in the cutaneous tissue dilate, and panting and respiratory rate increase—all in an attempt to cool the body.

Risk factors for heatstroke
Multiple systems contribute to the risk of heatstroke and are negatively affected by it. The risk factors include but are not limited to brachycephalic syndrome, obesity, laryngeal paralysis, cardiac disease, and tracheal collapse. The degree of damage to the body correlates with the body temperature attained and sustained, along with the span of time during which the body had been under stress. Generally, these patients present with a history that can lead to a diagnosis of heatstroke; careful consideration should be given if the information doesn’t coincide with the patient’s history. Other conditions such as meningitis, encephalitis, toxicities causing seizures, and brain lesions may be the cause of hyperthermia.

Clinically, these patients will often present acutely panting, tachycardic, with bounding pulse, and temperatures above 104.9 °F. These signs can progress to weak pulses; muddy, dry mucous membranes; vomiting; diarrhea; seizures; and central nervous system depression. Time is of the essence in such cases, because it is paramount to begin therapy/cooling to stabilize the patient and bring their temperature down to 103 °F, at which point therapy can be stopped.

Cooling things down
Foremost, consider whether the patient is out of the heat and in a cool area before administering treatment. Then begin to saturate the patient’s fur with cool water, because the goal is to reduce body temperature by increasing peripheral blood flow and dilating peripheral vessels. It is important that cooling measures employed do not make the patient too cold, because it could result in more vasoconstriction, which is known to shunt blood to the patient’s core, resulting in further increase of the core temperature and additional damage. Cool compresses or soaked towels placed over axillary areas and femoral vessels, with the addition of circulation air provided by a fan, will make significant differences in cooling efforts.

Although these methods of cooling are being initiated, an intravenous catheter should be placed to administer fluids or emergency medications, taking into consideration the individual needs of the patient. As the body responds to heat by vasoconstriction, care must be taken to prevent fluid overload, which can negatively affect the lungs and brain. When treating acute heatstroke, evaluation of the patient’s needs for fluids should be determined on an individual basis. Fluids should be administered at room temperature or through a cool water bath in order to be effective. Fluid rates and administration should be continually monitored, because the hemodynamic state of the patient may change depending on the patient’s physiological response to therapy/cooling.

An individualized approach to treatment
After identifying the individual needs of each patient, note that there are various classes of medications that can be used or considered when treating heatstroke. The use of nonsteroidal anti-inflammatory drugs is contraindicated. Nonsteroidal drugs act to adjust the hypothalamic set point for temperature and therefore may cause more harm than good. They also may create further damage to the already stressed kidneys and stomach. Corticosteroids may be used on a case-by-case basis for complications of heatstroke like cerebral edema. The use of antibiotics has been proven beneficial, because the risk of translocation of bacteria from the gastrointestinal tract is high. The selection of antibiotics should be directed toward a broad-spectrum option that should be administered until the patient’s gastrointestinal signs have resolved and appetite and bowel movements have returned to normal. With antibiotic support, gastrointestinal protectants may also be considered, because the goal of these medications should be to prevent gastrointestinal ulcers and alleviate nausea and acid production. Severely compromised patients may need both central nervous system and cardiac support. Mannitol or hypertonic saline may be used to decrease intracranial pressure and improve coronary, microvascular, and cerebral blood flow, but it should be used with caution when the patient is dehydrated. Diazepam may also be used to assist in controlling seizures in patients. Ventricular arrhythmias, the most common arrhythmia seen in patients with heatstroke, should be treated with lidocaine.

Ideally, patients should be monitored using electrocardiography, a pulse oximeter, a thermometer, and a blood pressure monitor. A baseline of temperature, pulse, respiration, capillary refill time, and mucous membrane color should be documented and the parameters serially recorded as the patient responds to treatment. If available during hospitalization, packed cell volume, total protein, prothrombin time, partial thromboplastin time, blood glucose, electrolytes, urine output volume, and lactate tests are recommended.

The prognosis for patients with heatstroke is dependent on the degree of hyperthermia and the time it takes for the patient’s body temperature to return to normal. The owners should be informed that the prognosis is considered guarded to poor. Patients that do not do well within 24 hours of presentation do not survive. Some of the negative prognostic indicators include arrhythmias, coagulopathies, and a poor neurologic response to treatment.

Educating pet owners
As we are all aware, client education regarding the prevention of heatstroke is of utmost importance and can be lifesaving. This education should start during puppy visits and should be revisited with the change in season on a yearly basis. It is often helpful to post warning signs in the veterinary clinic and on social media. Some patients living in different climates may acclimate better than others, but, overall, erring on the side of caution is always best.

Patricia M. Leff, DVM, practices at Brick Town Veterinary Hospital in Brick, New Jersey.

References available at dvm360.com.
When and why: The CBD debate

Learn about the background and properties of this phytocannabinoid derivative, the controversy it is facing, and how it can improve quality of life for human and animal patients.

By Janelle Overholser, CVT

Cannabidiol (CBD) and tetrahydrocannabinol (THC) are fairly hot-button topics in veterinary medicine that are difficult to unpack, with no distinguishable gray area—or so I thought. Historically, I always seem to encounter either the die-hard “holistic” believers or their antipode, the “gold standard Western medicine practitioners.” However, in recent years I have learned there are many “closet supporters” of CBD who find it difficult to openly endorse as a legitimate treatment modality because of either lack of clinical understanding or fear of legal ramifications.

As a CBD user who has experienced quantifiable results, I firmly believe there is a place for CBD in veterinary medicine that does not have to be limited to holistic practices. After all, anyone working in emergency medicine is likely familiar with Yunnan Baiyao, a traditional Chinese medicine used in hemorrhagic cases for its presumed hemostatic qualities. As mentioned, this is my attempt at addressing the CBD debate.

Cannabis: A basic understanding

To understand when and why CBD is appropriate to discuss or use in veterinary medicine, we must first understand what it is. This requires a general understanding of the cannabis plant. CBD and THC are phytocannabinoid derivatives of the cannabis species.4 Cannabis is an umbrella term for any hemp or marijuana plant with a THC concentration that has not been quantified, marijuana is cannabis with a determined THC concentration greater than 0.3%, and hemp is cannabis or any part of the plant with a determined THC concentration less than 0.3%.5 The Cannabaceae family can be broken down into the species Cannabis sativa and subspecies Cannabis indica and Cannabis ruderalis.6 Although the cannabis community has created a perception that one species is known for higher concentrations of THC over CBD and vice versa, concentrations of either can vary by species, and the chemical makeup is greatly affected by how the particular strain is grown. In actuality, the differences between the species largely come down to where the plant originated and the general appearance (eg, plant size and leaf shape).3

The endocannabinoid system

As mentioned, CBD is a phytocannabinoid, which acts on the endocannabinoid system (ECS). The ECS exists within humans and animals, vertebrates and invertebrates alike, and regulates functions in nearly every organ system throughout the body. It consists of G protein-coupled cell-membrane receptors and endogenous cannabinoid ligands, commonly referred to as endocannabinoids.7 The receptors most important in understanding the use of cannabis in medicine are cannabinoid receptors 1 and 2 (CB1R and CB2R). CB1R is found mainly within the central and peripheral nervous systems with some general distribution throughout the body, whereas CB2R is found mainly within the immune system.8

Canines specifically have been found to have a greatly increased number of CB1R within the cerebellum and brain stem compared with humans, which, due to the preferential binding of THC to these receptors, accounts for the pronounced clinical signs that we see with marijuana toxicity.9 CBD interacts with receptors quite differently from how THC does.

CBD has a weak affinity for receptors but can cause some antagonist activity at CB1R and inverse agonist activity at CB2R.4 In humans, this inverse agonist activity has been shown to reduce some of the psychoactive adverse effects (AEs) of THC when used in conjunction with CBD, and is known as the entourage effect.5 In veterinary medicine, THC is not a treatment option, but that does not mean CBD cannot be.

The evidence

We know what CBD does on a chemical level, but what is important is the quantifiable response to consistent use. The FDA has only approved 1 cannabis-derived CBD product for use in human medicine. Epidiolex is used to control seizure episodes associated with Lennox-Gastaut syndrome, Dravet syndrome, and tuberous sclerosis complex.6 In clinical trials, it showed an average reduction of seizure activity across the 3 syndromes by 39% to 48% over 14- to 16-week periods.8 Outside of prescription use, CBD users tout it for its benefits in controlling chronic pain, anxiety, and shift work–related insomnia. With all of the clinical and anecdotal evidence available in human CBD use and the knowledge that animals have an endocannabinoid system akin to humans, it is fairly reasonable to assume that the benefits of use in veterinary medicine would be similar to those we experience. However, exploration of CBD in veterinary medicine did not gain popularity until very recently.

There have only been a handful of CBD studies in animals, with most of the focus on epilepsy and osteoarthritis. Two notable studies are those conducted by Colorado State University (CSU) and Cornell University. The study conducted by CSU involved the use of CBD to treat canine epilepsy. Although it was a small-scale study, the results were promising, with 90% of participants experiencing a decrease in seizure activity7 and a median reduction in seizure activity of 33%.6 The Cornell study addressed canine osteoarthritis, and results showed a reduction of pain and improved mobility in over 80% of the participants, suggesting CBD to be an appropriate adjunct therapy in the treatment and management of osteoarthritis.7 In both these studies, minimal AEs were noted, with the most significant being an increase in serum alkaline phosphatase.9,10

A safety study conducted by Canopy Animal Health also indicated that CBD oil is well tolerated in canines, with...
over 94% of AEs scored as mild and mainly involving gastrointestinal signs and elevated serum alkaline phosphatase.10 Unfortunately, there are limited study data available on the safety and efficacy of CBD use in felines.

Legality of use in veterinary medicine

As proven in multiple studies, CBD can be an effective, safe therapy for many animals, which begs the question of why more veterinarians are not recommending it. Until very recently, CBD was classified as a Schedule I drug under the Controlled Substances Act (CSA) and therefore federally illegal. The passing of the Agricultural Improvement Act of 2018, known popularly as the farm bill, removed hemp and hemp-derived products from the definition of marijuana, thereby declassifying it as a scheduled substance under the CSA so long as the plant and products contain less than 0.3% THC.11 However, the hemp bill preserved the US Food and Drug Administration’s right to regulate any cannabis and cannabis derivatives under the Food, Drug, and Cosmetic Act,12 meaning veterinarians cannot legally prescribe CBD as a treatment protocol and must use diligence when discussing its use with clients.

Additionally, although CBD is now legal at the federal level, there are still 8 states with restrictions regarding sales and use,13 which adds another layer of complexity when considering its use in veterinary medicine. The only way to safely discuss CBD with a client is to refrain from stating that it is a drug that can treat or cure any particular illness. As with any other unregulated supplement or nutraceutical, the loophole exists wherein we can discuss how it can “support” a particular bodily system or function.

The debate

As part of my own research, I recently polled peers, veterinarians, technicians, and assistants to learn their opinions regarding CBD. I asked 2 questions: “Do you believe CBD has a future in veterinary medicine, and why or why not?” The responses were overwhelmingly in favor of CBD, that “it can’t hurt and might help.” Some of my peers already use CBD for their own animals mostly for its anxiolytic effects and to support mobility and appetite; a few had experience with successful use in epileptic cases in animals whose seizures were poorly managed with multiple anticonvulsant medications. One person had no opinion in either direction due to lack of experience with it. One was firmly against its use, citing a study suggesting no legitimate benefit in patients with epilepsy and concern about misuse at the hands of owners.

Despite the opinions that CBD does have a future, the support comes with stipulations. The primary concern is that there needs to be appropriate training provided to veterinary professionals and equivalent education to owners to prevent misuse; for example, an owner intentionally using a product containing THC, causing a toxicity case. Having seen a large increase in marijuana ingestion cases following the legalization of recreational use in my state, I tend to agree that the risk increases without proper education. The other concerns surround the potential for owners to put all their hope on CBD as a replacement for Western medicine, the fear of legal repercussions for veterinarians, and the stark lack of supporting clinical evidence, and the risk that clients, in an effort to “cut costs,” will use products from companies that cannot provide independent lab testing for proof of quality, purity, and potency.

Considering all the current information on CBD use in human medicine, the beginnings of research in veterinary medicine, and the changes in legality, I strongly believe it has a future in our field. I did not previously subscribe to the hype, and I would refuse to discuss the topic with clients or owners who were seeking support and approval for their decisions to experiment with CBD. But like the field, I have evolved and transitioned from my previously adamant no to a willingness to discuss without making recommendations. Now, I can safely say I am ready to openly advocate for its use if it can improve the quality of life for our patients.

The only way to safely discuss CBD with a client is to refrain from stating that it is a drug that can treat or cure any particular illness.

I have found that most clients interested in the properties of CBD are pursuing it as a last-ditch effort, frequently as an adjunct therapy in hospice care or to mitigate the AEs of chemotherapy treatment. These owners have nothing left to lose but their animal companions. They, as well as all pet owners, deserve the opportunity to discuss other options. We exist in this profession for the betterment of our patients and their owners; we have an obligation to seek new and better therapies, and right now that means we need to focus more attention on CBD research. For me, there is no debate. I am “Team CBD” all the way.

Janelle Overholser, CVT, is an ICU veterinary technician for BluePearl Specialty and Emergency Pet Hospital. She is a graduate of Penn Foster College in Scottsdale, Arizona, and recently returned to school to obtain her BAS degree in veterinary technology. She is passionate about emergency medicine and is pursuing her VTS in ECC.

REFERENCES


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

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. Consider the risks and benefits of treatment in dogs with a history of recurrence of these conditions. New neoplastic conditions (benign and malignant) were observed in clinical studies and post-approval. 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 side effects are vomiting and diarrhea. APOQUEL has been used safely with many common medications including parasiticides, antibiotics and vaccines.

See accompanying Brief Summary of Prescribing Information.

*Based on survey data from veterinarians (n=250) and pet owners (n=150).


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Trusted for over 7 years, APOQUEL® (oclacitinib tablet) has been prescribed to more than 9 million dogs in need of fast and effective allergic itch relief.1-4

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Brief Summary of full Prescribing Information

Immunomodulator

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 atopic 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, daily for up to 14 days, and then administered once daily for maintenance therapy. APOQUEL may be administered with or without food.

Dosing Chart

<table>
<thead>
<tr>
<th>Weight Range (in lb)</th>
<th>Weight Range (in Kg)</th>
<th>Number of Tablets to be Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Low</td>
<td>3.6 mg Tablets</td>
</tr>
<tr>
<td>6.6</td>
<td>9.0</td>
<td>3.6 mg Tablets</td>
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<tr>
<td>10.0</td>
<td>13.9</td>
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<td>-</td>
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<tr>
<td>130.0</td>
<td>175.9</td>
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</tr>
</tbody>
</table>

Precautions: Dogs receiving APOQUEL should be monitored for the development of infections, including demodicosis, and neoplasia.

The use of APOQUEL has not been evaluated in combination with glucocorticoids, cyclosporine, or other systemic immunosuppressive agents.

APOQUEL is for use in breeding dogs, or pregnant or lactating bitches.

Warning: APOQUEL is not for use in dogs less than 12 months of age (see Animal Safety).

APOQUEL modulates the immune system.

APOQUEL may increase susceptibility to infection, including demodicosis, and exacerbation of neoplastic conditions (see Precautions, Adverse Reactions, Post-Approval Experience and Animal Safety).

New neoplastic conditions (benign and malignant) were observed in dogs treated with APOQUEL during clinical studies and have been reported in the post-approval period (see Adverse Reactions and Post-Approval Experience).

Consider the risks and benefits of treatment prior to initiating APOQUEL in dogs with a history of recurrent serious infections or recurrent demodicosis or neoplasia (see Adverse Reactions, Post-Approval Experience, and Animal Safety).

Keep APOQUEL in a secure location out of reach of dogs, cats, and other animals to prevent accidental ingestion or overdose.

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.

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. The majority of dogs in the placebo group withdrew from the 112-day study by Day 16. Adverse reactions reported (and percent of dogs affected) during Days 0-16 included diarrhea (4.6% APOQUEL, 3.4% placebo), vomiting (3.9% APOQUEL, 2.8% placebo), pyoderma (2.0% APOQUEL, 0.9% placebo), polydipsia (2.5% APOQUEL, 2.1% placebo), increased appetite (1.1%), aggression (1.1%), and weight loss (0.7%).

Control of Pruritus Associated with Atopic 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 0-16 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 areas 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.

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Post-Approval Experience (2020):

The following adverse events are based on post-approval adverse drug experience reporting for APOQUEL. Not all adverse events are reported to FDA/CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data.

The following adverse events reported in dogs are listed in decreasing order of reporting frequency.

Vomiting, lethargy, anorexia, diarrhea, elevated liver enzymes, dermatitis (i.e. crusts, pododermatitis, pyoderma), seizures, polydipsia, and demodicosis.

Benign, malignant, and unclassified neoplasms, dental masses (including papillomas and histocytomas), lymphoma and other cancers have been reported.

Death (including euthanasia) has been reported.

Contact Information:

To report suspected adverse events, for technical assistance or to obtain a copy of the Safety Data Sheet, contact Zoets Inc. at 1-888-963-8471 or online at www.fda.gov/reportanimalae.

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

Storage Conditions: APOQUEL should be stored in 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 100 and 250 count bottles. Each tablet is scored and marked with 40033180A&P. For 1-888-FDA-VETS or online at www.fda.gov/reportanimalae.

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Revised: December 2020
Dear *Toxoplasma gondii*, Do you feel neglected?

The spotlight illuminates an often-ignored zoonotic infection as well as its causes and effects.

*By Jenifer Chatfield, DVM, DACZM, DACVPM*

As the world continues to plod through what has apparently become “The Age of SARS-CoV-2,” it behooves the well-rounded veterinarian to remember that other pathogens remain. *Toxoplasma gondii* is perhaps the least appreciated parasite in relation to its ability to cause disease. *T. gondii* has perhaps the broadest host range of any parasite; it infects most species of warm-blooded animals and is considered a ubiquitous organism. Despite the fact that toxoplasmosis is considered a leading cause of death from foodborne illness in the United States, it is also categorized as a neglected parasitic infection. A surprisingly large number of infected or at-risk individuals, likelihood of underreporting or missed diagnoses due to lack of awareness and effective diagnostic tests, and lack of effective treatments or disease prevention all land *T. gondii* in the neglected category. Why is *T. gondii* so neglected?

**The basics**

First, let’s focus on the basics of the *T. gondii* life cycle—how does this intracellular protozoan parasite survive? For *T. gondii* (and for my great-grandmother’s neighbor, Vivian), the world revolves around cats. Felids are the only definitive hosts of *T. gondii*, and therefore the only ones that shed oocysts. The oocysts must then sporulate to become infective, which takes 1 to 5 days, following excretion in the cat feces. Intermediate hosts, such as rodents or birds, ingest the oocysts in contaminated food or water. Once in the gut, the oocysts transform into tachyzoites, which then make their way into muscle or neural tissue and become bradyzoites, encysted in the tissue. When a felid consumes the intermediate host, the bradyzoites in the tissue are released into the feline gut, where they invade intestinal epithelial cells. Some of them mature into merozoites and begin sexual reproduction to yield oocysts that are shed in the cat’s feces. Tachyzoites are capable of asexual reproduction while in the intermediate host. Triggers for the different stages of the life cycle and criteria for asexual versus sexual reproduction remain largely unknown.

**Clinical manifestations**

*T. gondii* can infect and affect nearly any warm-blooded animal. Yet clinical presentations can vary widely and typically have a long period between initial infection and the manifestation of clinical disease. As tachyzoites migrate through tissue, they are the stage of the parasite that is typically responsible for clinical disease. The period from initial infection to clinical disease is determined by the immune status of the infected host. Immunocompetent animals are capable of controlling tachyzoite activity and spread, limiting toxoplasmosis to a subclinical illness. Animals lacking robust immune systems are vulnerable to the development of clinical disease at initial infection or later in life, once the immune system weakens. Young and older animals are more likely to manifest clinical illness such as pneumonia, myocarditis, hepatic necrosis, myositis, and encephalitis. If a pregnant animal is infected, the tachyzoites can cause placental necrosis or directly affect the fetus, producing necrosis in multiple organs or, ultimately, fetal death. Even though cats are the definitive host for *T. gondii*, felids are not immune from clinical toxoplasmosis. If a cat is immunocompromised, either from feline immunodeficiency virus or because of chronic organ disease, then clinical toxoplasmosis may develop.

**Treatment**

No vaccine is available for the prevention of toxoplasmosis, and clinical treatment is less than ideal following the determination of clinical disease. Although arresting the tachyzoite stage may be accomplished with either sulfonamide drugs or, more recently, ponazuril, the tissue damage produced by the parasite may be ultimately irreversible. In addition, bradyzoites are not affected by currently recommended therapies and may remain encysted only to cause illness at a later stage. All this only applies once the diagnosis has been made, which is tricky. Between equivocal antibody titers, intermittent shedding, and long-term encysting in tissues, it is difficult to establish which diagnostic method is best or even the most reliable.

**Prevalence**

How prevalent is *T. gondii* in humans? In the United States? And precisely how deadly is it in humans? If you thought we had all “outgrown” this parasite as a real threat, consider that the Centers for Disease Control and Prevention says *toxoplasmosis is considered to be a leading cause>>*
MEDICINE | Parasitology

**HEARTGARD® Plus (ivermectin/pyrantel)**

**DOSEAGE:**

HEARTGARD® Plus (ivermectin/pyrantel) should be administered orally at monthly intervals for a month (30 days) after infection and for the treatment of adult heartworms. The initial dose of HEARTGARD Plus and resumption of the recommended dosing regimen will minimize the opportunity for treatment failure of adult heartworms.

**INDICATIONS:**

HEARTGARD® Plus is indicated for the treatment of canine ascarids (Toxocara canis, Toxascaris leonina) and hookworms (Ancylostoma caninum, Uncinia stenocephala, Ancylostoma braziliense) in dogs.

**PRECAUTIONS:**

Clients should be advised that HEARTGARD Plus is not effective for microfilariae clearance. A mild hypersensitivity-type reaction, which may include an episode of mydriasis, depression, ataxia, tremors, drooling, paresis, recumbency, excitability, stupor, or death has been observed in clinical trials with ivermectin alone after treatment of some dogs that have been infected with T. gondii. HEARTGARD Plus should be given at monthly intervals during the period of the year when mosquitoes are present. If it is suspected that any of the dose has been lost, redosing is recommended.

**ADVERSE REACTIONS:**

In clinical field trials with HEARTGARD Plus, vomiting or diarrhea within 24 hours of the first dose of HEARTGARD Plus has been observed in clinical trials with ivermectin alone after treatment of some dogs that have been infected with T. gondii.

**MEDICINE | Parasitology**

**REFERENCES**


Jennifer Chatfield, DVM, DACZM, DACVP, is staff veterinarian at 4J Conservation Center, an instructor for FEMA/DHS courses, and a regional commander for the National Disaster Medicine System Team. She graduated from Texas A&M University’s College of Veterinary & Biomedical Sciences and has pursued emergency medicine and zoo medicine throughout her career. She owned 2 emergency clinics and has been the senior veterinarian in a zoo. She completed fieldwork in Madagascar and South America and continues to explore new areas of medicine as an associate editor for the Journal of Zoo and Wildlife Medicine for more than 10 years. She is a Medical Reserve Corps member and developed “Veterinary Support to Zoological Animals in a Disaster” for the National Veterinary Response Teams training curriculum. She has chaired the Florida Veterinary Medical Association’s (FVMA) One Health Committee and cochaired FVMA’s Disaster Response Committee.
HEARTGARD® Plus (ivermectin/pyrantel) has tools available to help you educate your clients about the real risks of heartworm disease. With HEARTGARD Plus, you’re recommending:

✔ Safe and trusted heartworm disease prevention that’s still #1 after 33 years¹
✔ The #1 dog-preferred, real-beef chew that makes compliance enjoyable for pets and pet owners²
✔ Highly effective control of five species of common intestinal parasites³,⁴
✔ Prevention backed by the HEARTGARD Plus Satisfaction Guarantee

YOU SEE THIS INVISIBLE THREAT. YOUR CLIENTS DON’T.

Get clinic support at HEARTGARDClinic.com

IMPORTANT SAFETY INFORMATION: HEARTGARD® Plus (ivermectin/pyrantel) is well tolerated. All dogs should be tested for heartworm infection before starting a preventive program. Following the use of HEARTGARD Plus, digestive and neurological side effects have rarely been reported. For more information, please see full prescribing information or visit www.HEARTGARDClinic.com.


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Keep zoonotic parasites on your radar

The vital role veterinarians play in advancing public understanding of zoonotic parasite infection risks as well as preventive measures.

By Mary Fuller, DVM

On any given day in general practice, you play many different roles: from internist, surgeon, and dermatologist to dentist, radiologist, and behaviorist, just to name a few. What may not come to mind as readily, though, is the crucial part you play in protecting dogs and cats—and their owners—from zoonotic parasites, especially hookworms and roundworms.

As pets become more firmly embedded, they’re living in closer proximity to their human counterparts, making it easier for inadvertent transmission of zoonotic parasites to occur.

For the millions of people in the US with compromised immune systems, zoonotic parasite infections can potentially be fatal. Given that 30% to 40% of these patients live with companion animals, this poses a significant risk.

The growth in pet therapy for recovering patients increases contact of potentially debilitated individuals with animals, which also provides an opportunity for transmission.

Despite a number of effective, broad-spectrum parasite preventives and treatments available today, companion animal roundworm and hookworm infections, and the serious human zoonotic diseases associated with them, continue to occur. Zoonotic parasite infections are a prime example of the need for One Health, and veterinarians play a critical role in helping advance public understanding of the risks as well as preventive measures.

ROUNDWORMS: STILL A PROBLEM

Roundworms aren’t going away, according to combined data from 2 large national reference laboratories, collected from 2012 to 2018. During those 7 years, the prevalence of roundworms in the US dogs remained fairly consistent. Annual prevalence began as 1.94% in 2012, fell to 1.77% in 2014, then rose to 1.89% in 2018.

Toxocariasis in humans is typically caused by *Toxocara canis* from dogs, and less commonly, *T. cati* from cats. A single *T. canis* female can produce more than 100,000 eggs per day, and eggs can remain viable in moist, cool environments for 2 to 4 years.

Singled out by the CDC as a neglected parasite infection, toxocariasis in people is 1 of 5 parasitic diseases identified for public health efforts.

People, most commonly children, become infected by inadvertently ingesting larvated eggs from soil or other contaminated surfaces. Once the embryonated eggs hatch in the intestinal tract, migrating larvae are responsible for several clinical syndromes, including visceral larva migrans (VLM) which may result in hepatomegaly, abdominal pain, and pulmonary infiltrates.

REFERENCES

For migrating larvae that happen to reach the eyes, ocular larva migrans (OLM) has the potential to cause permanent vision loss. Hundreds of children in the US are estimated to experience unilateral vision loss and other illnesses each year due to toxocarial larva migrans.4,5

Toxocariasis can also lead to neural larval migrations (NLM) causing progressive neurological signs and covert toxocariasis with abdominal pain, headaches and other vague symptoms.

HOOKWORMS: GROWING IN IMPORTANCE

The prevalence of hookworms in US dogs increased from 2.02% in 2012 to 2.96% in 2018, a 47% jump over the previously reported annual prevalence ($P = 0.0001$).2

Dogs and cats of any age can harbor adult hookworms in the small intestine, which pass eggs into the host’s gut, additionally larval hookworms encyst in the tissue. Outside the host, eggs hatch in the feces, and infective larval migrate out of the feces and can survive in the soil and vegetation for 3 to 4 weeks when environmental conditions are right.1,4

Humans are typically infected when larvae penetrate the skin.

A. braziliense is the hookworm most often associated with cataneous larva migrans (CLM), or “creeping eruption” in people, but A. caninum and U. stenocephala have also been implicated.1,8

Affected people experience linear, serpentine lesions that can be intensely pruritic, but infections are generally self-limiting. There is evidence that A. caninum infection may impact tissues beyond the skin, leading to eosinophilic enteritis, and possibly a form of ocular larva migrans that may impact vision.4

A GAP BETWEEN VETERINARY AND HUMAN DOCTORS

A Connecticut survey revealed a disconnect between veterinarians and pediatricians in terms of who is primarily responsible for educating people on zoonotic diseases. In a ranking of 4 occupations, veterinarians generally felt physicians were primarily responsible for communicating with the public, while pediatricians chose public health officials first, followed by veterinarians.7

Only 6% of veterinarians felt comfortable discussing parasitic disease prevention with clients, compared to 45% of veterinarians.7 Of those participating in the same survey, 60% of pediatricians and 41% of veterinarians never consulted those in the other profession about zoonotic diseases.5

But who do pet owners look to for information on zoonotic disease? In a survey of dog owners, 40% cited their veterinarian as their primary resource for zoonotic disease information, while not a single respondent mentioned their primary physician as a source.10

EDUCATE CLIENTS ON ZOONOTIC PARASITES

You need to educate clients about the significance of deworming puppies and kittens, not just for the health of the patients, but to help protect their family members from zoonotic parasites.

Clients also need to understand the importance of year-round, broad-spectrum parasite prevention, with products that treat and control both hookworms and roundworms.

Finally, you should explain why regular fecal testing is necessary for monitoring the effectiveness of prevention and treatment efforts, so their pets and family remain protected.

TEACH CLIENTS ABOUT SANITARY MEASURES

While underscoring the importance of proactive deworming and parasite prevention with clients, it’s actually more important for veterinarians to educate clients about proper sanitary measures to help prevent zoonotic parasite transmission. Since veterinarians aren’t always aware when clients or their family members may be immunocompromised, consider placing a small sign in exam rooms or a note on the practice website to encourage discussion of zoonotic disease risks and measures to limit the potential for transmission.

All pet owners should be advised to:

- **Pick up and dispose of pet feces promptly**—When walking in public areas such as parks, schoolyards, and city streets, dog owners should adhere to leash laws as well as bag and dispose of pet feces immediately. Pet feces in the yard and garden should be cleaned up as soon as possible and shoes and gloves should be worn when gardening.

- **Keep children away from potentially contaminated areas**—When not in use, sandboxes should be covered to prevent contamination with feces from cats and other animals. Kids should be discouraged from letting pets lick their hands.

- **Wash hands with soap and water**—All clients, especially those with children or immunocompromised family members, should wash hands after handling dogs, cats, animal waste, or pet supplies such as food and water bowls, pet beds, and litter boxes. Hand washing is especially important before eating food or handling infants, pacifiers, and baby bottles.

Since pet owners don’t always remember what you tell them, reinforce the message with educational brochures on zoonotic parasites. The Centers for Disease Control and Prevention (CDC) has produced an excellent brochure that you can share with your clients: “What every pet owner should know about roundworms and hookworms.” This brochure is available online at www.cdc.gov/parasites/resources/roundworms_hookworms.html. Your Boehringer Ingelheim representative can also provide you hard copies of the brochure for free, to share with clients.

Zoonoses: Possible legal implications for veterinarians

Due to the potential severity of human diseases associated with zoonotic parasite infection, there are a number of scenarios where veterinarians could be tangled up in legal action.

If a child or other family member becomes infected, veterinarians could face disciplinary action or litigation for failing to diagnose the parasitic disease in the pet, or simply neglecting to recommend parasite preventive measures.

Even if parasitic infection is diagnosed in a pet, a veterinarian could still be at risk for failing to advise clients to talk to their physician about possible zoonotic parasite transmission. The best way to protect patients, clients, and your practice is to have a proactive parasite program in place. Start by educating the staff and clients about the risks of zoonotic infections and the importance of prevention and treatment.

Veterinarians should make a point to note client discussions about zoonotic parasites in medical records. It’s also important to record when clients decline fecal tests, diagnostic testing, parasite preventive or treatments, (better yet, keep forms on hand and ask for client signatures to verify their choices).

With any pets that pose a risk for zoonotic parasite transmission, pet owners should be advised to seek the care of their physicians. In the spirit of One Health, veterinarians should be willing to discuss the situation with the physician, as needed.

REFERENCES


www.cdc.gov/parasites/resources/roundworms_hookworms.html
Management of the blocked cat for veterinary technicians

Veterinary technicians play a critical role in identifying and treating blocked cats in the emergency department.

By Kate Boatright, VMD

Blocked cats are a common emergency presentation in the veterinary hospital. Veterinary technicians should be able to recognize a blocked cat during triage and alert the veterinarian. Rapid identification of these patients will allow for the lifesaving emergency stabilization and treatment that is required. In a session at the recent Fetch dvm360® virtual conference, David Liss, RVT, VTS (ECC, SAIM), CVPM, MS, MBA, discussed must-know facts and practical management tips for blocked cats that can be used by the entire veterinary team.

Clinical presentation

Patient presentation will vary depending on how long the obstruction has been present. Liss notes that these patients are generally “either alert, bright, and ready to kill you, or on death’s door.”

Often, these cats present with a history of lower urinary tract signs (stranguria, dysuria, hematuria, or pollakiuria), hiding, or vocalizing in the litter box. Liss cautions veterinary team members that owners who are not aware of the signs of a urethral obstruction may call with concerns that their cat is constipated. If the cat is a younger adult male, urethral obstructions are more likely than constipation and these cats should be on an urgent basis.

Triage and physical examination

For male cats presenting for urinary signs or vague clinical signs such as lethargy, inappetence, vomiting or hiding, veterinary technicians should perform their usual triage, including temperature, pulse, and respiration, checking mucous membranes, and assessing mentation, and palpating the bladder. Liss notes that technicians cannot make the diagnosis of urethral obstruction because this is beyond their scope of practice, but they can alert the veterinarian if they palpate a firm, large bladder as part of their triage assessment.

The large, firm bladder is the hallmark physical examination finding in blocked cats, and most present with abdominal pain. They may be tachycardic or bradycardic depending on the disease progression. Blocked cats presenting with bradycardia, hypothermia, obtunded mental state, or in lateral recumbency are unstable and require immediate stabilization.

Stabilization

The first step in treating blocked cats is to obtain emergency consent from the owners for treatment. This can be done by a technician while other team members prepare for stabilization, obtain a blood pressure measure and blood for a minimum database including acid-base status, electrolytes, and renal values, and connect an ECG for cardiac monitoring.

When it comes to stabilization, the first step is to place an IV catheter and administer a small fluid bolus. Liss states, “There was a time when we worried about giving fluids to blocked cats. We really shouldn’t.” These patients present in shock, and fluid therapy will help with the acidemia and hyperkalemia that are present. Buffered crystalloids, such as Normosol-R, are the most efficient in reducing acidemia and do not affect resolution of hyperkalemia.

Common laboratory abnormalities in blocked cats include azotemia, hyperkalemia, acidemia, hyperlactatemia, and hypocalcemia. An ECG should be assessed at presentation and monitored during treatment. Classic findings in the presence of hyperkalemia include tall, sometimes tented T waves; wide QRS complexes; and absent P waves. Ventricular escape rhythms may be present.

Hyperkalemia is the most immediately life-threatening abnormality. Although hyperkalemia may be reduced somewhat by the initial fluid bolus, severe cases warrant additional treatments. Calcium gluconate is considered cardioprotective because of its effect on the electrical conduction in the heart, but it does not address the hyperkalemia directly. Regular insulin can be administered to move potassium back to the intracellular spaces. Dextrose should be administered as well to prevent hypoglycemia secondary to the insulin. Blood glucose should be monitored in these patients to ensure that dextrose supplementation is sufficient.

In some cases, a decompressive cystocentesis can be performed to relieve some pressure from the bladder until the patient is stable enough for anesthesia and deobstruction. Historically, some clinicians have had concerns that performing a cystocentesis in an obstructed cat could result in iatrogenic bladder rupture. However, studies support the safety of decompressive cystocentesis in these patients. Finally, Liss reminds veterinary teams to institute pain management as soon as the patient is stable enough to tolerate it.

Deobstruction

Definitive treatment of the blocked cat requires relieving the obstruction. Although pain medication may provide some sedation, additional anesthetic agents are often required. Some patients will need to be placed under general anesthesia, whereas others may be deobstructed under strong sedation with a sacrococcygeal nerve block.

It is important to minimize anesthesia time in these compromised patients. Technicians should ensure that all supplies are prepared
before inducing anesthesia. The patient should be preoxygenated, premedicated, and closely monitored. Monitoring should include ECG, oxygenation, blood pressure, and heart rate.

The procedure for deobstruction involves the use of an open-ended tomcat catheter. Saline is pulsed gently through the catheter to break up and retropulse the obstruction. Once the obstruction is relieved and the bladder and urethra have been flushed, an indwelling catheter can be placed to maintain a patent urethra during diuresis. If a red rubber catheter is used, a radiograph should be taken to ensure optimal placement due to the length of this type of catheter.

Following placement of the indwelling catheter, a closed collection system should be connected. Leaving the catheter open creates a high risk of urinary tract infections. Liss notes that resterilized IV sets work well if commercially available setups are not available. He recommends removing all clamps from these IV sets to prevent them from being accidentally closed, impeding urine flow in the line. He also cautions team members to always check the cage door to ensure the urine line is not inadvertently kinked in the door.

Potential complications of blocked cats include bladder rupture, urethral trauma from catheterization, and cardiac arrest. Liss notes these are all rare, but technicians “have to be prepared because [blocked cats] these guys are really variable.”

Nursing considerations

Most blocked cats are hospitalized with a urinary catheter in place. Maintenance of the urinary catheter is an important part of nursing care. The collection system should be kept closed to prevent the introduction of bacteria. Gloves should be worn when handling the urinary catheter and collection set. The perineal area and urinary tubing should be cleaned with diluted chlorhexidine every 4 to 6 hours during the hospital stay.

In addition to standard monitoring, Liss notes the following items that should be considered for blocked cats:

- Pain scoring, such as the Feline Grimace Scale, should be utilized regularly to ensure that the patient is receiving sufficient analgesia.
- Patients receiving antispasmodic medications should have blood pressure monitored. These medications, most often prazosin and phenoxybenzamine, are α-antagonists, which relax smooth muscle in the body, including the urethra and blood vessel walls.
- Urine output should be monitored closely because these patients will enter a postobstructive diuresis during which their urine production can reach 3 to 5 ml/kg/hr. Fluid rates should be carefully monitored to ensure they are matching urine production.

Take-home points

Veterinary technicians play a key role in the care of blocked cats, starting with patient identification. They can help to stabilize, assist with deobstruction, and monitor patients under anesthesia and in recovery. During the patient’s hospital stay, technicians have the most contact with the patient and can advise the attending veterinarian of concerns related to pain management, blood pressure, and hydration. Liss notes that blocked cats are a rewarding emergency because most patients do well with treatment.

Kate Boatright, VMD, a 2013 graduate of the University of Pennsylvania in Philadelphia is a practicing veterinarian, freelance speaker, and author in western Pennsylvania. She is passionate about mentorship, education, and addressing common sources of stress for veterinary teams and recent graduates. Outside of clinical practice, she is actively involved in organized veterinary medicine at the local, state, and national levels.

REFERENCES

I’ve been on a journey during the past year, starting with the murder of George Floyd—a journey of awareness, new learnings and understandings, and concern for the need to belong.

Awareness

It began with a new awareness of how unfinished the work of racial justice is. I think some of us thought that issue was taken care of with the Civil Rights Act of 1964. I was wrong. I read What Does It Mean to Be White? by Robin DiAngelo and realized that, unlike me, people of color are aware of their skin color every time they look into the mirror or step out to flag down a taxi. As a White, heterosexual woman, I benefit from privilege that I didn’t even realize I had.

That little bit of awareness prompted me to read Stamped From the Beginning by Ibram X. Kendi. We have a lot of reckoning to do to address the legacy of 400 years of slavery. My Black friends have 12 generations of slavery in their family. Many of them know, first-hand, the stories of beatings, exclusions, and family separation carried down through several generations. When a local organization in San Diego, California, began its program by acknowledging that we are living on Kumeyaay land, I became aware of the work we need to do to reckon with the colonists’ genocide of the American Indians going back more than 400 years.

Learning and understanding

Terms new to me were popping up in the media, and I wanted to learn about them. They include DEI (diversity, equity, and inclusion), BIPOC (black, indigenous, and people of color), LGBTQIA (lesbian, gay, bisexual, transgender, queer/questioning, intersex, and asexual and/or ally), and gender dysphoria (a feeling of discomfort that might occur when one’s gender identity differs from their biological sex determined at birth).

The American Veterinary Medical Association (AVMA) has renewed its efforts to bring diversity, equity, and inclusion to veterinary medicine. The AVMA board adopted its first policy on diversity in 2004 and is collaborating with 10 affinity
organizations focused on DEI led by the Multicultural Veterinary Medical Association. One of the resources is AVMA’s new Brave Space Certificate Program. It came along just when I was beginning my journey. The first topic covered in the program is a discussion of unconscious bias. It made me realize that my “white privilege” undoubtedly carries with it biases that are unintentional and implicit. I saw how that has been a factor in the makeup of the veterinary profession, referred to as the “whitest profession” in the country. I dug deeper. In exploring what lies behind the veterinary profession being “the whitest profession,” I learned about research reporting that “underrepresented veterinary students may experience a less welcoming social and academic climate on their campus as a result of overhearing intolerant language, lacking mentors, and experiencing discomfort in less diverse learning environments.” While still a veterinary student, Tierra Price, DVM, MPH, didn’t see people in veterinary medicine who looked like her. She founded BlackDVMNetwork, a community that connects Black veterinary professionals.

I realized that my journey required me to engage in conversations that may be difficult. I began with conversations “from a distance” with Emmanuel Acho, a professional athlete playing with the NFL. He has made himself and his views known on short YouTube pieces, which can be readily found on Google. His book, Uncomfortable Conversations With a Black Man, facilitates more conversations “from a distance.”

My continued reading led me to learn that in July 2020 a #WakeUpVetMed movement was started that launched a petition with accompanying the client is a spouse to be requested the client’s gender. The hospital has converted its restroom to a gender-neutral bathroom. It has removed from client forms any questions about gender identity to changes at her hospital. For example, her hospital has addressed as Mr or Mrs. The hospital now uses diversity training videos for newcomers—and periodically for everyone—and supports LGBTQIA community events. The discussions in the hospital resulted in team members becoming aware of jokes that can be offensive, and she told me about “allyship.” This refers to people who are allies for LGBTQIA folks and will call out inappropriate comments. In fact, she told me about one person who heard a teammate say, “Oh, that’s so gay,” and felt informed and empowered to remind her colleague that the expression was inappropriate. I learned about a concept similar to allyship, Bystander Intervention Training, which was recently launched to stop anti-Asian American and xenophobic harassment. As I have become aware of the violence against this population, I’ve made it my business to learn more about how I can be a responsible bystander through the free 1-hour training. The DEI committees and task forces that have recently sprung up focus on diversity and equality. The third piece, inclusion, is sometimes more challenging, but my friend told me what it means. When I commented that she sounds as though she feels included in her practice, she agreed. Then she told me that the first time she knew she really belonged was when the doctor who hired her asked about her partner. She recalled the quote by Vernā Myers, a leading diversity and inclusion expert, “Diversity is being invited to the party; inclusion is being asked to dance.” When she knew that her colleagues accepted, respected, and embraced her, along with her identity, she knew that she belonged. I visited another veterinary practice that is working on being aware of and learning about diversity. They want those who might be considered “marginalized” to be included. Their strategy is potluck luncheons, for which they invite each person to bring a dish of their heritage and to talk about it. Because most of the team members are White, they talk about growing up and the defining moments of their lives and those of their parents. Understanding another’s defining moments can explain many of their values and beliefs. Some can go back to immigrant parents or grandparents and share how they celebrate and view their culture. Inviting others to share their background and sense of identity can lead to a feeling of belonging. These luncheons have also led to discussions of other differences—everything from gender identity to different educational paths.

In the end, sharing enriches the entire team, because they come to appreciate and respect the views, feelings, and needs of each member. Being aware, learning, and helping everyone to belong leads to a more satisfying place to work and provides better outcomes for our patients.

Carolyne C. Shadle, PhD, is the founder of Interpersonal Communication Services, Inc. She is passionate about communicating with clients and teammates, writes extensively, and presents at veterinary conferences and hospitals. Her focus is various aspects of practice management, including communicating in the virtual world, inclusive communication, gaining confidence when engaging with clients, and managing difficult conversations. She can be reached at www.VeterinarianCommunication.com.

REFERENCES

The veterinary ally: A comprehensive communication solution

By Amanda Carrozza

Digital marketing and communication have evolved exponentially over the past few years and have been cemented as pillars of client retention and a quantifiable revenue stream in the veterinary industry. Meeting clients where they are—often on their mobile devices—with pertinent information tailored to their needs is essential to succeed in the current climate. In fact, the veterinary software industry is rapidly growing and is expected to surpass $2 billion by 2027. But not all communication services are created equally.

Too often, hospital owners and practice managers are overwhelmed with the software options available or find themselves constrained by the generic templates supplied by outdated systems. Providing timely, appealing client communications should not require a Master’s degree in IT.

dvm360® recently spoke with 3 experienced veterinary professionals to pinpoint common problems that practices encounter with subpar communication systems, while also shedding light on how AllyDVM has become an asset to their businesses.

The dilemma: Mending the communication gap between veterinary professionals and their clients.

A 2018 study conducted by the Partners for Healthy Pets—a collaborative alliance led by the American Animal Hospital Association and the American Veterinary Medical Association—revealed significant disconnects between the viewpoints of pet owners and practitioners, particularly when it came to what occurred and was discovered during a physical exam for their pets, including pain assessments and dental exams.

Clients do not always absorb the pertinent information relayed during an appointment or they fail to properly recall the recommended next steps.

The solution: Enhancing staff-client communications within the exam room setting is important, but having a follow-up tool to reiterate the services performed and veterinary recommendations could have a tremendous impact on client comprehension and compliance. For veterinary professionals who have struggled with this for years, it is easy to understand why AllyDVM’s direct messaging feature is quickly becoming one of the most popular components of the suite. Beyond sending appointment reminders—which it does seamlessly—it provides another channel of communication between the client and practice.

“More and more, our clients want instant communication and a quick turnaround of information. It is very easy to do that with AllyDVM. A client can send us a request and we can get right back to them,” says Patti Christie, CVT, CVPM, the practice manager at Minnehaha Animal Hospital and Pet Doctors Animal Clinic in Minneapolis, Minnesota. “Clients also really appreciate that they have the ability to connect with us without having to make a call.”

William Armbruster, DVM, who owns 3 veterinary hospitals in central Illinois—Greenhaven Animal Clinic, Prairiehaven Animal Hospital, and Best Friends Animal Hospital—says he cannot place a high enough value on strong practice-client communications. “It is so critical today. It’s not just the younger generations that use the feature; everybody likes texting.”

The client service representatives and technicians at his hospitals regularly use the direct messaging/texting feature to follow up with clients after a visit. “Our clients love the fact that it is relatively quick and easy for us to check in with them,” he adds. “It helps with client communication and retention, as well as bonding the client to the clinic.”

The dilemma: Practices lose a large amount of potential income when client compliance and retention lapse.

Pet parents are notorious for missing the recommended schedules for vaccines, annuals, and other health services. This is detrimental to a patient’s health and could prevent the early diagnosis of treatable diseases.

The solution: There are steps practices can implement to increase client compliance for routine wellness visits and vaccinations. These, in turn, have evident effects on the bottom line. AllyDVM’s client retention calendar makes it simple for hospitals to notify clients when their pet is due for a wellness visit and encourages multi-pet homes to schedule all of their exams at once.

“The retention calendar was a huge [selling point] for us because it is so easy to use,” says Dr. Armbruster. “We can send clients reminders by direct messaging which is helpful for them and for us because we can set it up to hear back from clients after a visit.”

Once an appointment is scheduled, the reminder system can be programmed to send automatic reminders. This has helped practices decrease the number of no-shows and last-minute cancellations.

Dr. Armbruster utilizes the retention calendar to forward book all appointments. “If you are in for a routine wellness exam, we are making your exam appointment for 6 months from now before you leave. Or if it is a sick patient, then you are getting booked a week or 2 out, depending on the doctor’s recommendation.”

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MWI Animal Health®
The dilemma: Generic email communications are left unread; valuable information never reaches clients.

Veterinary clients are savvy. They can recognize when a blanketed email campaign lands in their inbox and can generally infer by the subject line if the topic is of interest. It is imperative that hospitals stand out from the dozens of emails that people receive on a daily basis. It is counterproductive to send an email about senior bloodwork testing to an entire database when it only applies to a small segment of the clientele. Similarly, households with only cats are not interested in discounts on canine heartworm preventatives.

The solution: Make your communications matter. Each message should be valuable to the intended recipient. AllyDVM has proven to be one of the leaders in providing filtering capabilities. Users can target the right client segment—by species, procedure, age, disease, etc.—at the right time, automatically.

“We can target information relative to senior pets, for example,” Christie explains. “So we can target the patient individually and use that opportunity to provide information as well as give them a reason to set up an appointment for their pet.”

The dilemma: Incorrect or invalid client contact information leads to otherwise avoidable miscommunications.

For Lueker, clients not receiving intended phone calls and reminders was one of the biggest challenges her hospital faced. Previous communication software missed the mark in alerting her of errors within the system. “We didn’t have a way to track that before. Our old software would alert us that 10 emails did not get sent out, but not which specific clients.”

The solution: AllyDVM is designed to highlight missing information or possible contact errors. “It will show me if someone put in ‘Yahoo’ with an extra ‘o’ or if someone spelled something wrong,” Lueker explains. Fixing those mistakes is simple and has a profound impact on ensuring intended communications are received.

“One thing that is really nice about the feature is that it also tells you how much you are potentially missing in revenue by not getting the right information, like the correct email or telephone number,” Christie adds. Similarly, AllyDVM has tools to reflect the revenue gained by taking advantage of the retention calendar features.

The dilemma: Box stores and commercialized websites are steering clients away from hospitals’ dedicated online stores and pharmacies. Practices may feel they do not have the means to compete with retailers.

The solution: Recently, AllyDVM launched its buzzed-about manufacturer partner program to complement the communication services that practices have grown to depend on. The Synergy Partner Program is a turn-key marketing tool kit that includes simple, automated email campaigns. The email capabilities also include money-saving offers from some of our top manufacturer partners in the industry, designed to drive pet owners into the practice to purchase products.

Lueker has found the program particularly helpful in getting clients to act on offers related to heartworm medications. Clients would call as a result of receiving the email, and the staff provided further information about the product and how it could benefit their pets. “We’ve gleaned quite a lot of revenue just from getting them to come in for ProHeart®,” she explains.

Her practice had a similar experience after sending a Synergy Partner Program email regarding Simparica Trio®. “A lot of people were waiting for it to come out since it is an all-in-1. As soon as they received the email, they were on the phone calling us to see what they needed to do next for their pet to receive it.”

The dilemma: Clients crave ease and instant gratification. The standard routine of calling a clinic, being placed on hold, and then trying to sync schedules based on availability does not fit those criteria.

The solution: AllyDVM’s live bookings calendar can be easily added to a hospital’s website or patient portal, the latter of which syncs directly to a hospital’s practice management system.

“Our clients love it,” Lueker says. “They can access pet health records, set up appointments, request refills, and view loyalty points. There are also hot buttons that will take them over to our online pharmacy, website, Facebook, etc.” Additionally, it provides clients with control over finding an appointment that works best for their schedule.

“With AllyDVM it shows clients the actual days and times that are available,” she adds. “Our old software did not show that, therefore, people would be requesting appointments for the next day and then getting upset with us that we could not fit them in.”

The calendar also shows availability based on appointment type. “For example, our sick appointments are longer visits,” explains Lueker. “So if they are requesting a sick appointment, but we only have a 20-minute spot open versus a 40-minute slot, it will not even show them that slot. It will just show them the 40-minute ones.”

The bottom line: When it comes to finding a client-communication service, don’t settle. Your practice’s reputation and revenue are on the line.

“AllyDVM is one of the most important tools we have in our toolbox, quite honestly,” Christie explains. “It was really well designed by people who certainly understand the industry and the needs we have.”

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REFERENCES
How to improve Google rankings by getting more practice reviews

Want to appear on the first page of Google? Here are 5 important strategies to consider.

By Andrew Chirico, BBA

As the search market continues to be dominated by Google, it has become crucial to ensure your practice listing appears on the first page of the search results. Why? Because 90% of survey respondents said they were likely to click on the first set of results.

A great way to increase the ranking of your site (and maintain that high ranking) is to consistently solicit and collect Google reviews. Google’s review platform is one of the most important places to reinforce your online reputation, and you should respond to reviews provided by your clients.

Google reviews provide valuable information about your business to you and your clients, increasing its prominence. Positive reviews help build trust in your brand; enhance online exposure and local search engine optimization (SEO); increase website visitors; and ultimately, attract more pet owners to your practice.

In 1 day, you can implement the following 5 strategies to gain positive reviews and strengthen local SEO.

**Ask your clients to leave reviews**

Ask your clients to Google the clinic’s location and click on the “Write a review” button. If you want to increase your review count quickly, simply making this request is one of the easiest, most effective ways.

1. **When following up with clients, always include a link**

   If follow-up emails are sent to clients, it’s a good idea to kindly ask them to leave a review and attach a link to facilitate your request. Your emails should always be personal and informative. Let the client know that their feedback is important to your clinic.

   To have the link sent to your clients, access your Google My Business dashboard, click on the “Home” tab, scroll down, and click on “Get More Reviews.”

2. **Add a review link to your clinic’s website**

   Placing a link in your site’s header or footer, or even using a lightbox popup requesting a review from your clients, is another simple way to get more reviews. This makes it easier for your customers because they’re already on your site, and it doesn’t require the extra steps of Googling (searching) or clicking through a link in an email.

3. **Respond to all reviews (good and bad)**

   Current and potential clients like to see your clinic’s responses to reviews. This shows that you welcome feedback and take an interest in the level of care and attention offered to your clients and patients. Companies that respond to Google reviews are also acknowledged by Google. No one likes to receive a negative review; however, if that does happen, take the following steps:
   - Address the specific issue.
   - Apologize (even if your company is in the right).
   - Resolve the issue privately.

   You can use the following script as a guide:

   “Hi NAME, we are sorry to hear that you did not have a great experience with us. Our team always strives to deliver an exceptional experience from the moment you walk into our clinic. I’d like to personally hear more about this and see how we can make it better. Please reach out to our clinic by phone or email (INSERT PHONE, EMAIL), and we can talk further. Thank you for your business.”

   Sincerely,
   YOUR NAME
   CLINIC NAME

4. **Follow up your review requests several times**

   Even if a client doesn’t leave a review the first time you request one, that doesn’t necessarily mean they wouldn’t leave one at all. Your email or request may have been sent at an inconvenient time, or the client could have simply forgotten.

   One effective way to overcome this challenge is to create 2 email follow-up templates, in addition to your first review request, and limit your total number of review requests to 3. You should follow up on the request once a week, or every other week, until you reach the maximum number of requests.

Google’s review platform is an important place to reinforce your online reputation.

Creating a continuous pipeline of reviews can be challenging. If you’d prefer to leave your review generation to a professional team, Running Digital is here to help. Contact us online to learn more about our wide range of digital marketing services designed to help businesses like yours get as many clients and sales as possible from the web.

Andrew Chirico, BBA is owner of Running Digital in Nashville, Tennessee.

**REFERENCE**

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**Revolta** *(selamectin)*

**Topical Parasiticide for Dogs and Cats**

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

**DESCRIPTION:**
Revolta (selamectin) Topical Parasiticide is available as a colorless to yellowish, ready-to-use solution in single-dose tubes for topical (lumbar) treatment of dogs six weeks of age and older and cats eight weeks of age and older. The content of each tube is formulated to provide a minimum of 2 mg/kg (6.6 mg/lb) of body weight of selamectin. The chemical composition of selamectin is (2S,25S)-25-(2-ethylhexyloxy)-4-(2,6-dimethyl-3-oxo-2-methyl-1-hexan-2-yl)hexahydro-5H-pyrido[1,2-b]indole-2-carboxylic acid (racemic m.p.) (2S,25S)-25-(2-ethylhexyloxy)-4-(2,6-dimethyl-3-oxo-2-methyl-1-hexan-2-yl)hexahydro-5H-pyrido[1,2-b]indole-2-carboxylic acid.

**INDICATIONS:**
This product is recommended for use in dogs six weeks of age or older and cats eight weeks of age and older for the following parasitic conditions:

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

**Cats:**
Revolta kills adult fleas and prevents flea eggs from hatching for one month and is indicated for the prevention and control of flea infestations (*Semenopterina felis*), prevention of heartworm disease caused by *Dirofilaria immitis*, and the treatment and control of ear mite (*Otodectes cynotis*) infestations. Revolta is also indicated for the treatment and control of roundworms (*Toxocara canis*) and internal hookworms (*Ancylostoma tubaeforme*) infestations in cats.

**WARNINGS:**
Not for human use. Keep out of the reach of children.

In humans, Revolta may be irritating to skin and eyes.  

Reactions such as itching, tingling and skin redness have been reported in human in rare instances. Individuals with known hypersensitivity to Revolta should be aware of the symptoms that could be associated with use of the product. 

Revolta contains isopropyl alcohol and the preservative butylated hydroxytolene (BHT). Wash hands after use and wash off any product in contact with the skin immediately with soap and water. If contact with eyes occurs, flush eyes copiously with water. In case of ingestion by human, a physician is immediately.

The safety data sheet (SDS) provides more detailed occupational safety information. To report suspected adverse drug events, for emergency assistance or to obtain a copy of the SDS, contact Aurora Pharmaceuticals at 1-888-215-1256 or www.aurorapharmaceutical.com. For additional information about adverse drug experience reporting for animal dogs, contact FDA at 1-888-FDA-VETS or online at www.fda.gov/reportanimal.

Flammable – Keep away from heat, sparks, open flames or other sources of ignition.

Do not use in sick, debilitated or underweight animals (see SAFETY).

**PRECAUTIONS:**
Prior to administration of Revolta, dogs should be tested for existing heartworm infection. At the discretion of the veterinarian, infected dogs should be treated to remove adult heartworms. Revolta is not effective against adult heartworms when administered to dogs and cats within one month of exposure to infective (*D. immitis* larvae). Effectiveness of selamectin decreases below 100% in dogs, however, if administered within 30% of exposure to infective larvae. Therefore, heartworm endemic regions, delaying initiation of heartworm prevention using Revolta beyond 2 months of first exposure to infective larvae (e.g., starting puppies and kittens at ≤4 weeks of age), or a ≥3 months delay in the administration of Revolta during periods of heartworm transmission, increases the risk of the animal acquiring heartworms. Animals with unknown heartworm history that test negative for heartworms prior to the initiation of Revolta may be harboring pre-patient infections at the time Revolta is started. Testing such animals 3–4 months after initiation of Revolta would be necessary to confirm their negative heartworm status.

At the discretion of the veterinarian, cats ≥6 months of age may be tested to determine the presence of existing heartworm infestation before beginning treatment with Revolta. Cats already infected with adult heartworms can be given Revolta monthly to prevent further infections.

**Ear Mite Treatment in Dogs and Cats**

For the treatment of ear mite (*Otodectes cynotis*) infestations in dogs and cats, Revolta should be administered once as a single topical dose. A second monthly dose may be required in some dogs. Monthly dosing of Revolta will control any subsequent ear mite infestations. In the clinical field trials, ears were not cleared, and many animals still had debris in their ears after the second dose. Cleaning of the infested ears is recommended to remove the debris.

**Sarcoptic Mange Treatment in Dogs**

For the treatment of sarcoptic mange (*S. scabiei*) in dogs, Revolta should be administered once as a single topical dose. A second monthly dose may be required in some dogs. In monthly dosing of Revolta will control any subsequent sarcoptic mange infestations. Because of the difficulty in finding sarcoptic mange mites on skin scrapings, effectiveness assessments also were based on resolution of clinical signs. Resolution of the pruritus associated with the mite infestations was observed in approximately 50% of the dogs 10 days after the first treatment and in approximately 90% of the dogs 30 days after the second monthly treatment.

**Tick Control in Dogs**

For the control of tick (*Demodex* mites) infestations in dogs, Revolta should be administered as a monthly dose. In heavy tick infestations, complete efficacy may not be achieved after the first dose. In these cases, one additional dose may be administered two weeks after the previous dose, with monthly dosing continued thereafter.

**Nematode Treatment in Cats**

For the treatment and control of intestinal hookworm (*A. tubaeforme*) and roundworm (*T. cati*) infestations, Revolta should be applied once as a single topical dose.

**SAFETY:**
Selamectin has been tested in over 100 different pure and mixed-breed dogs of all ages and 15 different pure and mixed-breed healthy cats, including pregnant and lactating females, breeding males and females, puppies six weeks of age and older, kittens eight weeks of age and older, and veterinarian-sensitive calves. A kitten, estimated to be ≤5–6 weeks old (≤5 lb), died 1½ hours after receiving a single treatment of selamectin at the recommended dose. The label included a warning that a hairless cat with muscle spasm, salivation and myoparalysis. The kitten was born with an unknown history and was euthanized and undergo (see WARNINGS).

**DOGS:**
In safety studies, selamectin was administered at 1, 3, 5, and 10 times the recommended dose to six-week-old kittens. No adverse reactions were observed. The safety of selamectin administered orally was also tested in case of accidental ingestion. Oral administration of selamectin at the recommended topical dose in 5- to 8-month-old piglets did not cause any adverse reactions. In a pre-clinical study selamectin was dosed orally to immature-sensitive calves. Oral administration of 2.5, 10, and 15 mg/kg in this dose escalating study did not cause any adverse reactions; however, eight hours after receiving 15 mg/kg orally, one aminemetic-sensitive calves became shaggy for several hours, but did not show any other adverse reactions after receiving subsequent doses of 10 and 15 mg/kg orally. In a topical safety study conducted with aminemetic-sensitive calves at 1, 3 and 5 times the recommended dose of selamectin, salivation was observed in all treatment groups, including the vehicle control. Selamectin also was administered at 3 times the recommended dose to dogs initially infected with heartworms, and no adverse effects were observed.

**Cats:**
In safety studies, selamectin was applied at 1, 3, 5, and 10 times the recommended dose to 6-week-old kittens. No adverse reactions were observed. The safety of selamectin administered orally was also tested in case of accidental ingestion. Oral administration of the recommended topical dose of selamectin to cats caused salivation and intermittent vomiting. Selamectin also was applied at 4 times the recommended dose to patent heartworm infected cats, and no adverse reactions were observed.

In-feline-controlled clinical studies, selamectin was used safely in animals receiving other frequently used veterinary products such as vaccines, antibiotics, antiparasitics, antihypertensives, steroids, iodine and diphenhydramine.

**STORAGE CONDITIONS:**
Store below 30°C (86°F).

**HOW SUPPLIED:**
Available in eight separate device strengths for dogs and cats of different weights (see DOSE). Revolta for puppies and kittens containing 3 single-dose tubes. Revolta for dogs and cats is available in 1.25 mg, 2.5 mg, and 4 mg strengths.

Approved by FDA under ANDA 200-673 formulas.

**Revolta** *(selamectin)*

**Manufacturer:** Aurora Pharmaceutical, Inc.  
Northfield, MN 55057

**www.aurorapharmaceutical.com**

**Manufactured in U.S.A.**
The 2-minute phone call

An expert in practice management offers 4 tips to efficiently handle and increase the number of calls to your practice without compromising client service.

By Emily Shiver, CVPM, CCFP, CVBL

Do you have 7 phone lines ringing off the hook? Are 4 client service representatives not enough? Your office only has 3 phone stations! Clients call your practice for different reasons. The most common include the following:

- Scheduling an appointment
- Ordering medication or diet refills
- Scheduling lodging
- Scheduling grooming
- Checking on hospitalized pets
- Returning a doctor’s call

As you can imagine, the phone lines can get bogged down because there are so many moving parts. After analyzing the workflow, it is clear that an easy way to improve client service is to limit phone calls to 2 minutes. This allows time to address the client’s needs while being able to convey compassion and empathy. The bonus is that it also frees up phone lines so more clients can be helped. Coach your team on the 2-minute phone call using these 4 tips.

1. Keep the call on track and get down to business

You know those clients who just love to chat it up. I have coached many a new customer service representative (CSR) who would patiently listen to all their stories about trips to the grocery store or personal health issues. You can be compassionate while keeping the call on track. If the client strays, patiently steer them in the right direction.

“T’m sorry your trip to the store was trying. How can I help you with Dodger?”

“You are one tough cookie to endure those challenges. How can I help you with Dodger today?”

There is nothing wrong with even saying, “Mrs Sylvester, it has been so great chatting with you. I must take this other call; we will see you soon.”

2. Offer 2 yes options

The difference between asking a client what time works for them versus giving them 2 time options is huge when your goal is a 2-minute phone call.

The Do’s

- “Dr Abbott has an 11 am or a 4:30 pm appointment; which do you prefer?”

- “Do you prefer morning or afternoon?”

Giving the client only 2 options allows them to focus on engagements they may have around those 2 times and decide easily and quickly. You may go back and forth until you find a time that works for the practice and the client, but continue to give them 2 options until a decision is made.

3. Transfer calls efficiently

Implement a phone in each “zone” that is monitored on a regular basis. Your CSRs are able to transfer calls based on the client’s needs which frees them up to take the next incoming call.

Consider breaking your practice into these “zones”:

- Pharmacy
- Lodging
- Grooming
- Outpatient
- Inpatient

Voicemails are set up accordingly and appropriate expectations are set for the clients. For example, a practice that has a lodging zone walks, cleans, and feeds from 7 to 10 am. Communicate to the client to leave a message and their call will be returned after 10 am. If your pharmacy is busy and the client may not be able to get through right away, encourage them to leave a voicemail and their call will be returned within an hour. Transferring calls will take the load off of the CSRs and provide more efficient client care. It is important to set clear expectations and allow for a transition period as everyone adjusts to the new system. Once in place, it can be phenomenal.

4. Coaching

Identify CSRs in your practice who have mastered the 2-minute phone call and pair them with new team members or those who need coaching. Some training tools I use are a phone splitter and recorded phone calls. The phone splitter is affordable, and the trainee can hear the trainer do a few calls; they can then switch and have the trainee take the call while the trainer listens. Recorded calls give you the opportunity to hear an entire phone call after you have set the trainee free to take calls on their own. Give positive, constructive feedback and celebrate the little victories until the 2-minute phone call is achieved.

These 4 tips will increase your practice’s ability to receive more phone calls by keeping your phone time with each client to 2 minutes. Clients will also appreciate having their needs met in a very efficient manner.

Emily Shiver, CVPM, CCFP, CVBL, is regional director of operations in Florida for the Family Vet Group.
How to maintain client loyalty by utilizing effective retention marketing

Check out these 6 steps for successfully implementing a retention marketing strategy at your veterinary practice.

By Peter Weinstein, DVM, MBA

You may be gaining clients, but are you retaining them? There is a science to it. A successful client retention marketing strategy heavily relies upon your veterinary practice’s vision, core values, and mission. What matters to you will matter to your clients. Let’s take a deeper look.

Retention marketing aims to strengthen your existing relationships with clients via ongoing and consistent communication, proper education, and becoming a go-to source for information. Never again should a client say, “I did not know that.” Here are 6 steps to help you implement a successful client retention marketing strategy at your clinic.

Step 1: Identify key client education topics

There are dozens of untapped subjects to explore with your clients. Here are a few topics to help you get started: senior care, weight management, dental disease, breed-specific concerns, chronic skin and ear conditions, behavior, internal parasites, and external parasites. The goal is to properly educate pet owners to help their fur babies live healthier, happier, and longer lives.

Step 2: Properly use practice management software

You and your team must create customized communications with clients based on individual patient needs. Ensure your team knows how to sort by age, breed, services provided, products dispensed, body condition score, etc. Pets who are not on heartworm preventives, for example, will get a different set of communications than those that are taking them. Additionally, owners of kittens and puppies would not get a senior care workup education email. Mrs. Jones, who just brought in her 3 dogs for expensive dental care, would not receive a postcard informing her that her dogs are overdue for a dental cleaning. These communication errors can erode client trust.

Step 3: Create targeted educational content

Educational resources should be tailored to address specific patient needs while explaining the consequences of not addressing these health concerns. For example:

- Dental disease untreated leads to...
- Obesity unresolved can cause....
- Older cocker spaniels have a high risk of hypothyroidism, which leads to...
- Senior cats are very prone to kidney failure. If left untreated it could lead to...

Your content should also range from letter size to postcard size. Additionally, remember that every message must have a call to action (eg, an examination, a fecal, a tooth check, a weigh-in). You may also consider including incentives such as a free tooth cleaning, an exam, or pet food to help encourage adherence.

Step 4: Identify current and new marketing outreach tools

Letters, postcards, and newsletters—like email, e-cards, audio emails, video emails, telephone calls, Facebook posts, tweets, and Pinterest posts—are effective marketing tools. It is important to note that there is nothing wrong with educating your clientele en masse while focusing on specific client and patient needs.

Step 5: Create a targeted marketing list

Identify pets that meet the parameters for a specific campaign. Examples of issues around which to create a campaign include obesity, senior care, dental care, etc. Then use this list to send out the marketing pieces to the owners of these pets.

Step 6: Scheduling, and repetition, are key

Mail-merge the list in step 5 into the marketing pieces in step 3 using the tools in step 4 to send to clients. Letters, postcards, emails, and phone calls should all be scheduled at different times and sent to the same client. Repetitive communication helps drive home key points.

The bottom line

If we use the metaphor of marketing and relate it to vaccinations and the immune response, 1 shot is usually not enough to stimulate the immune system to provide long-term protection from the disease against which the patient is being vaccinated. Similarly, marketing is rarely effective as a single shot that has long-lasting impressions on either your clients or potential clients. In the case of vaccinations, early in the animal’s life there is usually a series of shots necessary to provide sufficient immune response to afford long-term protection, and even then boosters are needed later.

For marketing, constant exposure, education, and communication (the vaccinations) are needed to provide enough interest and motivation for the client/customer to take action.

A successful client retention marketing strategy heavily relies upon your veterinary practice’s vision, core values, and mission.

Think of marketing as constantly educating your clients so that they demand the products and services you provide and share that enthusiasm with their friends and family members.

Peter Weinstein, DVM, MBA, is executive director of the Southern California Veterinary Medical Association, coauthor of The E-Myth Veterinarian with Michael Gerber, and president of Simple Solutions for Pets.
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For additional product safety information, see brief on following page or visit: https://www.vetoquinolusa.com/clevor-info
Finally, an FDA-approved drug for canine vomiting...

No, not for stopping it; for initiating it

When it’s time to treat canine vomiting, veterinarians have reliable medications in our toolbox. But when it’s time to initiate vomiting in an emergency situation, options have been limited and off-label, until now.

By Karen Todd-Jenkins, VMD

Dogs eat things they shouldn’t. That’s just a fact of life for veterinarians and pet owners. In 2020, the ASPCA Animal Poison Control Center (APCC) handled over 370,000 reports of toxin exposures.1 The organization recently ranked their most common toxins of 2020, and the top 5 may have a familiar ring. Over-the-counter medications, including NSAIDS, cold remedies, joint rubs, vitamins, and supplements ranked No. 1, representing 17% of the APCC’s total case volume. Human prescription medications, such as antidepressants and cardiac medications, ranked No. 2. Human foods, including grapes, raisins, and garlic ranked No. 3, accounting for 13% of the APCC’s cases. Chocolate and plants/bouquets round out the top 5. In most of these cases, if ingestion is detected early enough, decontamination usually begins by inducing emesis.

In a survey, veterinarians reported seeing 14 cases per month involving dogs that swallow dangerous items or substances.2 So, whether you work in a busy emergency center or a small country practice, you will inevitably need to induce emesis to save a pet’s life or prevent severe illness. But our options are relatively limited, aren’t they? Apomorphine and 3% hydrogen peroxide are what many veterinarians have available, but these products aren’t FDA-approved for use in dogs, and they have limitations and potential adverse effects that can be concerning. Fortunately, and finally, there’s an FDA-approved option specifically for use in dogs.

A NEW SOLUTION

Clevor® (ropinirole ophthalmic solution) is the first FDA-approved emetic for dogs. Clevor is a full dopamine agonist that selectively targets the dopamine D2-type receptors in the brain’s chemoreceptor trigger zone (CRTZ). Activation of these receptors transmits information to the brain’s vomiting center, which initiates emesis in dogs.3 In cats, the key CRTZ neurotransmitter receptors that initiate vomiting include a2-adrenergic and 5-HT3 receptors, instead of dopamine. Therefore, Clevor is only approved for use in dogs.

HOW SHOULD CLEVOR BE USED?

Clevor is an ophthalmic solution that’s quick and convenient. Clevor’s ready-to-use dropper means no mixing, syringes, or complicated dosing calculations are required. Clevor should be applied by dropper into the eye, at a dosage of 1 to 8 drops per dog (divided between both eyes), based on weight. If more than 4 drops are needed (e.g., for large or giant breed dogs), clinicians are advised to wait 2 minutes before administering the rest of the dose. If emesis doesn’t occur within 20 minutes, a second dose may be administered. If required, the second dose will be the exact same number of drops as the first dose.

Each dropper of Clevor is sealed in a single-use aluminum pouch. A single dropper of Clevor provides enough ropinirole to treat a dog weighing from 4 to 220.5 pounds. The dropper and aluminum pouch should be discarded within 30 minutes of opening. However, with a shelf life of 2 years, unopened pouches will remain effective even if your practice doesn’t frequently see emergencies that require induction of emesis.

A REVIEW OF CURRENT OPTIONS

Apomorphine and hydrogen peroxide are readily available, but both are used off-label, and neither product is an ideal choice for inducing emesis.

Apomorphine induces emesis by stimulating dopamine receptors in the brain’s CRTZ and also has effects on other receptors that are not related to emesis.4,5,6 Apomorphine can be administered by intravenous, intramuscular or subcutaneous injection. It may also be administered subconjunctivally, either by direct subconjunctival application of a crushed tablet or diluting a crushed tablet with saline and applying the solution into the conjunctival sac. If vomiting doesn’t occur, repeated applications are unlikely to induce vomiting.4,6,7 Additionally, repeated administration of apomorphine, or high doses of the drug, may actually inhibit vomiting, through its effect on opioid receptors. When apomorphine is applied subconjunctivally, rinsing the eyes with saline solution can suppress further vomiting once the desired result is achieved by removing what has not been absorbed. However, apomorphine can potentially cause protracted vomiting that is not reversible via naloxone, although CNS effects and cardiorespiratory depression, which can also occur, are reversible with naloxone.8 Apomorphine must also be purchased through a compounding pharmacy, which can affect product consistency and price.

Hydrogen peroxide (3%) induces vomiting by irritating the oropharynx and stomach lining.9 Hydrogen peroxide is readily available and inexpensive. However, it can be messy and difficult to administer, and there is no direct reversal as the way it induces emesis is through irritation of the oropharynx and stomach lining. Potential complications include esophagitis, gastric irritation and ulcers, and duodenal lesions.9

Unlike apomorphine and hydrogen peroxide, Clevor is FDA-approved for use in dogs, and scientific studies have demonstrated...
By Karen Todd-Jenkins, VMD

When it’s time to treat canine vomiting, veterinarians

Finally, and 3%/hydrogen peroxide are what

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Unlike apomorphine and

45 minutes.3

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In the same study, 95% of dogs

 spoilage of oral 3% hydrogen peroxide used


Clevor® (ropinirole ophthalmic solution) 3%:

for dogs. Clevor should be applied by dropper

Clevor should be applied by dropper

by intravenous, intramuscular or

Clevor should be applied by dropper

with saline solution can suppress

Adverse Reactions Reported During the

Studies (all dogs). Ocular system was conjunctival hyperemia, proxim ination of the third eyelid, conjunctival discharge, blepharospasm, conjunctival swelling, scratching/tubbing of eyes, corneal abrasion and corneal/conjunctival uptake without corneal abrasion. Systemic organ system was lethargy, tachycardia (>100 beats per minute), duration longer than one hour, salivation, trembling, diarrhea or soft stool, anorexia and borborygmus. Clinical pathology organ systems were neutrophilia, anemia, hyperglycemia, hypercholesterolemia and increased blood glucose and increased prolactin hormone.

To report suspected adverse events call

by intravenous, intramuscular or

In cats, the key CRTZ

The following table shows the number of

CLEVOR was administered as drops into the

on label in the emetic center.

its efficacy and safety. In a multi-

center, masked, randomized,

controlled field study of client-

owned dogs of various breeds

(ranging in age from 7 months to

15 years), 86% of dogs vomited

within 20 minutes following a

single application of Clevor.

In the same study, 95% of dogs

vomited within 30 minutes, and

90% stopped vomiting within

45 minutes.3

Additionally, Clevor’s targeted mode of action means that the therapeutic effect can be reversed when desired. Administration of a dopamine receptor antagonist, like metoclopramide (doseage: 0.5 mg/kg intravenously or subcutaneously), can reverse ropinirole’s effect and suppress further vomiting.

THE TAKE-HOME MESSAGE

Some pet owners may dismiss dietary indiscretion as harmless “puppy behavior,” but the statistics tell a different, more frightening story. Approximately 88% of dogs eat things they shouldn’t. And only 23% of these dogs are under 1 year of age.2 So clearly these episodes aren’t just “puppy behavior.” Many veterinarians have anecdotes about unusual items they’ve had surgically retrieve from a dog’s stomach, but these incidents are no laughing matter. As documented by the ASPCA APCC, prescription and over-the-counter medications, inappropriate human foods, and other hazardous items are on the menu for some of our patients. When these emergencies happen, timing is critical. Immediate emesis can be key to improving patient outcomes, so it’s crucial to have a reliable emetic on hand that’s safe, effective, and convenient to use.

Clevor is FDA-approved, doesn’t require mixing or compounding. In a clinical field study, the mean time to first vomiting was 12 minutes, with 3 minutes being the fastest time. When necessary, it’s also scalable. Before you receive 1 more panicked phone call about a dog that ate chocolate, consider what Clevor can do for your patients and your practice.

REFERENCES


CLEVOR® is indicated for the induction of vomiting in dogs.

IMPORTANT SAFETY INFORMATION: Do not use in dogs with central nervous system depression or seizures. Do not use in cases of ingestion of sharp foreign objects, corrosive agents (acids or alcaloids), volatile substances or organic solvents. CLEVOR® should not be administered in cases with corneal ulceration, corneal irritation, or corneal injury. Do not use when there is a known sensitivity to ropinirole or the inactive ingredients.

ADVERSE REACTIONS MAY INCLUDE: Transient mild or moderate hyperemia of the eye, ocular discharge, protrusion of the 3rd eyelid and blepharospasm, transient mild lethargy, and increased heart rate. All Clevor-related observations resolved within 6 hours post-dosing. 3

Clevor (ropinirole) is a dopamine agonist that specifically targets dopamine D2-type receptors in the brain’s chemoreceptor trigger zone (CRTZ), located in the area postrema. Following activation, the CRTZ transmits information to the brain’s emetic center to initiate vomiting.
Marketing to millennial clients and beyond

Learn how to steer more millennial pet parents to your practice by using effective communication, enhancing your social media content, and adopting a customer-centric approach.

By: Robert Sanchez

Within the past 10 years, the millennial generation has taken entire industries by storm, including casual dining, department stores, and cable TV providers. As a millennial who runs an animal health marketing agency, I can attest to how we think differently, shop differently, and feel differently when it comes to our pets and having novel expectations for our veterinary practices. It pays to understand us. This article will serve as a crash course in millennial thinking, from how we choose to why we stay, how we’ll spend.

Getting to know us
Numbering approximately 72 million millennials make up the largest generation in the United States. We are also the likeliest to own pets; in fact, 76% of us do. Besides becoming the new Goliath in the animal health market, we feel differently about our pets. When giving talks at conferences, I often joke that I would sell my car to finance essential care for my pets Cole and Lula, and I’m not alone. Of millennials, 42% regard pets as family. Part of this is the natural forward march of the human-animal bond, and part is also because we are delaying child-rearing into our 30s and 40s. Pets fill the gap that we are delaying child-rearing into our 30s and 40s. Pets fill the gap that children previously did. To us, they really are family.

We also shop differently. The way we select our products and services is digitally savvy and thorough. We log several hours a day on our smartphones, are heavy consumers of content on various social media platforms, and expect substantially more thoughtfulness and customer-centricity from the brands that serve us.

I have spent well over $10,000 on my pets within the past few months because I would never dream of forgoing essential care. In many ways, we can be considered paradoxes; committed to our pets but savvy about market pricing, driven by humanist values but eager to pirate media content instead of paying for it; enlightened about the importance of wellness but logging 5 to 10 hours a day on our smartphones. Why? Simple. We are the first generation to grow up with the internet. Now, I’m going to teach you how to effectively reach us through it.

Think differently
If you’re a millennial, then you probably remember Myspace. It was our first foray into social media. We picked our top 8 friends, and our cover song, and began curating a persona for our peers to see. We grew up with social media. For better or worse, it is a permanent part of our personalities. It’s how we connect to the world and spend our time. And it’s where you must meet us.

The 2 most popular brands among millennials are Apple and Nike. Why? Because their marketing doesn’t brag, boast, or bay about how incredible their products are. They celebrate their customers and the values that bind them. To drive more millennials to your practice, consider curating content that celebrates pet owners and pets and the love they share. Don’t just tell stories about what makes you so awesome; tell stories about why we feel the way we do about our pets—stories that remind us or even teach us why we care so much. This will create brand awareness and affinity.

Millennial shopping
When we are actively seeking veterinary services, there are 2 critical assets we look for: your reviews and your website. Why? Because the real question we are seeking an answer to is: “Can we trust you?” Your Google Business review score can be thought of as table stakes; for many of us, if you have below a 4.5 score, we are unlikely to consider you. Often, we’ll even read through the reviews to see the breadth of sentiment that your current clients have for you. This makes it imperative that you have a thoughtful strategy to generate positive reviews and an empathetic strategy to respond to any negative reviews.

To successfully drive more millennials to your website, find ways that make you stand out among the competition. Millenials seek out businesses that share similar values, emotions, priorities, hopes, and fears. Your website is your opportunity to tell a story of what makes your practice special, different, and uniquely suited to meet our needs.

Convenience is king
We prioritize use over ownership, convenience over uncertainty. This will be integral in a winning value proposition to millennial pet owners. Think about ways you can fit yourself into our lifestyle. We prefer brands that are easy to communicate with (eg, via text and social platforms) and create authentic digital relationships with—brands that make it easier to do business with them than the others and care deeply about customer-centricity. Becoming a more fanatically customer-centric clinic can help drive more millennial pet owners to your doors. We respond to the dopamine rush of a company that makes everything simple and engaging.

Where to begin
Now that you have a primer on how millennials think, what we respond to, and what tools to use to attract more of us, your next step should be thinking about ways to bolster your digital footprint. Think about the ways you can enhance your social media presence, content strategy, website, and making your practice more customer-centric. Do that, and who knows—maybe I’ll be giving you a call.

Robert Sanchez is the founder and CEO of Digital Empathy, an award-winning web design and marketing firm for veterinary practices. He frequently lectures at national conferences, leads a team of wonderful employees, sits on the board of VetPartners, and shares his home with 2 very spoiled dogs—Cole and Lula.

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3 safeguards for managing social media

Overseeing your clinic’s social media comes with many caveats, ranging from fun and creative to stressful and burdensome. Find out how to curb your social media use and set boundaries when you’re on and off the clock.

By Kelsey Gustafson, Associate Editor

Along with the growing demand for a strong social media presence in veterinary medicine comes a dire need for a healthier work-life balance, says Caitlin DeWilde, DVM, owner of The Social DVM, a veterinarian-owned and operated social media marketing company.

“Very few of us [veterinary professionals] are happy and have a good work-life balance. Over time, this can lead to a real problem like psychological distress,” she said.

During her lecture at the May Fetch dvm360® virtual conference, DeWilde highlighted the crucial role social media plays in promoting veterinary practices and how it can contribute to mental health issues such as burnout and compassion fatigue within the profession. To curtail these evolving stressors, she provided 3 social media safeguards that practices can utilize to promote a healthier and more cohesive workplace.

1. Awareness is key
Does your practice have a social media policy? According to DeWilde, these policies help determine who is responsible for responding and monitoring reviews and who creates, posts, and monitors the content. “I find a lot of people are not aware of what their true policy is, or maybe they don’t have one,” she said. “Social media policies help you to be aware of what those expectations, roles, and timelines are.”

For example, many veterinarians like to dive right in and handle situations. “That’s how we operate,” said DeWilde. However, when it infringes on personal time, a lot of unnecessary stress will start to accumulate. Having defined and assigned roles can help set boundaries so that you aren’t working or worrying after hours about negative reviews or comments.

“Are we responsible for this 24/7? The answer should be no,” she added.

2. What are your goals?
Determining your level of involvement in social media at your practice is integral. Do you want to share the responsibility of creating and posting content or be the only one in charge? How much time are you willing to spend on it? “If you’re becoming involved in [social media management], you should know what that commitment looks like,” said DeWilde. She generally divides veterinary social media into 2 groups of people: those who love it and spend way too much time on it and those who don’t enjoy it and are unsure about how much time (and skill) is required.

Additionally, upper management doesn’t always consider the time, effort, and commitment it takes to manage social media properly. Whether you’re involved in creating, posting, monitoring, or analyzing content, you should be compensated for the additional workload.

“The takeaway
The vast and evolving world of social media can be consuming and addicting, which is why it’s crucial to take breaks from it every now and again. DeWilde said managing your social media use can help you avoid negative effects on work-life balance and addiction and can boost productivity. “I can tell you from experience that going unplugged helps me be more in tune and in the moment. Sometimes you just need that break, and it’s amazing what you will get done when you’re not looking at your [device],” she said.
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For more information, visit [catvets.com/end-of-life-toolkit](http://catvets.com/end-of-life-toolkit).

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For more information, visit [sarstedt.com](http://sarstedt.com).
**OncoK9**

A canine liquid biopsy test

OncoK9 is a noninvasive, multicancer early-detection test that allows veterinarians to discover signs of cancer with a simple blood draw. This first-of-its-kind test is a significant development as there are currently no established screening processes for canine cancer. OncoK9 utilizes genomic analysis that leverages next-generation sequencing (NGS) technology and proprietary bioinformatic algorithms enabling veterinarians to provide superior care to patients and begin treatment, if necessary.

For more information, visit petdx.com

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**MeasureON!**

Canine wearable health monitor

MeasureON! is a smart harness placed on patients that provides veterinary professionals with instant and accurate vital readings to analyze post operation. Patients are measured around the chest to determine the size of the harness. Then, using Bluetooth technology and the VetMeasure app, continuous, noninvasive real-time capture of temperature, heart rate, respiratory rate, activity level, and ECG is recorded. MeasureON! is safe, efficient, and long-lasting and helps to maintain transparency between veterinarians and pet owners.

For more information, visit vetmeasure.com

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**EmberEquine Ultrasound and Recordkeeping Solution**

Equine imaging and electronic data entry solution

EmberEquine is an ultrasound reproduction solution designed to optimize the workflow of equine veterinarians. EmberEquine software is run on the Mesa 2 Rugged Tablet, which is paired with Draminski’s 4VetJ Ultrasound to promote easier, more efficient recordkeeping. The software provides a powerful, user-friendly interface for quick data entry and features customizable electronic forms that are stored securely and able to be accessed and sent from virtually anywhere. EmberEquine also allows veterinarians to schedule and organize appointments and breeding procedures and track billable services as they occur while exporting client reports with ultrasound images instantly.

For more information, visit junipersys.com/index.php/products/ember.

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**Dogo**

Mobile dog training app

Are your clients struggling to train their dogs? A new app, Dogo offers customized training programs that include step-by-step instructions on how to teach pets a variety of tricks. Pet parents can take a short test during onboarding to find a training program tailored to their furry friend’s unique needs. They can also send a video exam to dog trainers and receive feedback within 12 hours. The app also features a built-in clicker that reduces the training time by 40% and an online dog parent community where users can share videos, photos, and other content to support and encourage one another. Dogo is available in 10 languages and used by over 3 million dog parents.

For more information, visit dogo.app
any veterinary practices implemented or expanded telehealth services in response to COVID-19 restrictions. As we start to welcome clients back into examination rooms, we will be wise to think about these technology offerings as more than stopgap solutions. Beyond the pandemic, telehealth and telemedicine can augment and add value to traditional clinical services—enhancing the client-practice bond, improving adherence and patient health, and providing other benefits to the veterinary team and bottom line.

**Setting expectations**

Veterinarians and clients benefit from telemedicine tools because they create additional pathways for communication and data exchange between veterinarians, clients, and veterinary specialists. Additionally, they allow for integration with artificial intelligence, thus helping to identify issues earlier and increasing diagnostic accuracy. Remote monitoring can also assist with case management and provide added information about client adherence to veterinary recommendations.

Quality patient care is always paramount. The same standard of care applies whether a visit is conducted virtually or in person. It is important to note, however, that telemedicine is not a replacement for in-person exams. That is why honest communication with the client about what is and is not possible with telemedicine is crucial.

**Delivering great service to patients and clients**

When used appropriately, telemedicine can enhance continuity of care. Veterinarians and our teams can check on patients more frequently, and telemedicine tools can help identify opportunities for earlier intervention when needed. For example, a video check-in can be used to evaluate healing of incision sites or wounds, monitor changes in mobility, and observe a patient’s general demeanor and evidence of return to normalcy after treatment.

Today’s telecommunication tools and software applications also can make it easier and more convenient for clients to seek veterinary care. Particularly for clients who embrace new technologies—and in areas with reliable, high-speed internet—telemedicine services can simplify the process of consulting the veterinarian. Being willing and able to offer telemedicine in appropriate situations can be a value-add that strengthens your bond with clients and patients.

Technology also can help integrate veterinary specialists into patient care. Not only does it simplify consulting between a general practitioner and specialist, but it also supports 3-way conversations that can help bridge gaps when an in-person visit with the specialist isn’t an option.

**Supporting the veterinary team**

Another advantage of telemedicine is convenience and improved staff efficiency. Client expectations for after-hours care and consultations can take a toll on even the most dedicated team. Telemedicine can help you deliver after-hours services while allowing your team members to manage work-life balance.

Telemedicine technologies also can help you better utilize veterinary technicians. For example, a technician can use text messaging to answer postoperative questions or video chat to demonstrate medication administration or deliver education that supports the veterinarians’ nutritional or behavioral recommendations. These activities support quality patient care and deepen the connection with clients and patients while freeing up veterinarians’ time.

**Building your business**

Patient-specific telemedicine services are just part of telehealth. Veterinary practices also can have opportunities to use technology to deliver general education that is not specific to a particular patient. Your technicians, for example, could lead webinars that support a healthy start for new puppy and kitten owners or share the significance of preventive care and can team with veterinarians to deliver information about conditions like hypothyroidism, diabetes, or Addison disease. This can help introduce your practice to more people in the community and position your clinic as a valuable resource for nonclients and clients.

At the heart of it all, the VCPR

Establishing trust between the veterinarian and client is always key to the successful delivery of veterinary care. Telemedicine is no exception. Creating a veterinarian-client-patient relationship (VCPR) is the first step in building trust, and conducting an in-person exam or premise visit is an important opportunity to get to know patients and clients. Once that relationship has been suitably established, telemedicine can support and deepen the connection.

One way we see interplay between the VCPR and telemedicine is in the connection between the value pet owners place on telemedicine and their relationship with the veterinarian on the other end. Research shows consumers place higher value on telehealth services offered by their own veterinarian than by a veterinarian they have never met.

A recent study conducted by Purdue University economists, in partnership with the American Veterinary Medical Association, looked at pet owner attitudes and valuation of telemedicine services. It found that pet owners valued an average telemedicine call 1.5 times more when the platform connected them with a veterinarian in their community, rather than a random veterinarian located anywhere nationally. Moreover, pet owners valued the telemedicine service 2.5 times more when it connected them with their specific veterinarian. These findings demonstrate the importance of the relationship between veterinarians and clients, especially in the context of telemedicine.

This research also indicated a significant demand for telemedicine services, although that demand varied by age. Younger clients with children were the peak demographic desiring telemedicine options. Again, the research revealed that what is in demand is the ability for clients to reach their specific veterinarian.

More to discover

As a profession, we are still exploring telehealth and the opportunities it presents. Although we have learned a lot this past year, that education occurred during a pandemic with clients and practices under duress. There is a lot of “statistical noise” in what we know about telemedicine demand.

What we do know is that practices implementing telemedicine should deliver what clients want—the veterinarian with whom they already have an established relationship. Nurturing that connection, via telehealth and face-to-face, will lead to improvements in patient health and practice growth.

**AVMA telemedicine resources**

Find these and other resources to implement and optimize your telehealth offerings in the American Veterinary Medical Association’s Telehealth Resource Center at avma.org/Telehealth:

- Guidelines for use of telehealth in veterinary practice
- Definitions: talking about telehealth
- Service providers list

Matthew Salois, PhD, is director of the AVMA Economics Division.

Gail C. Golab, PhD, DVM, MANZCVS (Animal Welfare), DACAW, is the chief veterinary officer of the American Veterinary Medical Association.
Helping You Keep Heart Disease on a Leash

The Only Quantitative, In-clinic NT-proBNP Tests for Dogs and Cats

The industry’s only in-clinic canine and feline NT-proBNP biomarker tests for the quantitative and precise detection of heart disease are available from Bionote’s Vcheck line of affordable diagnostic tests. For use in routine care, pre-operatively or in response to patient symptoms, such as dyspnea, Vcheck’s NT-proBNP tests allow for identification of the cardiac pro-hormone biomarker within minutes. Without the need for an outside reference lab, the in-clinic NT-proBNP tests allow veterinarians to detect indicators for heart disease quickly while reducing the potential for sample degradation.
NT-proBNP Testing: An Important Tool for Veterinary Practitioners

Explore the vital role this biomarker test plays in identifying cardiac conditions in dogs, plus how to use it in daily practice.

By Courtney Smith, DVM, MS, DACVIM (Cardiology)

Cardiac-specific biomarkers play a crucial role in identifying cardiac perturbations. A biomarker can be objectively measured and evaluated as an indicator of normal or pathological biological processes. Some common biomarkers include pulse and blood pressure, basic chemistries, and more complex laboratory tests utilizing blood and tissue samples. Cardiac biomarkers can provide rapid, accurate information regarding myocardial necrosis/cell injury and hemodynamic stress. The most widely studied cardiac biomarkers in veterinary medicine include N-terminal fragment pro-B type natriuretic peptide (NT-proBNP) and cardiac troponin I.

**B-type Natriuretic Peptide**

B-type natriuretic peptide (BNP) is a hormone produced and secreted by cardiac muscle cells (cardiomyocytes) in response to excessive cellular stretch. BNP helps to regulate homeostasis of intravascular volume and systemic pressure, and counteracts the effects of the renin-angiotensin-aldosterone system (RAAS), which becomes upregulated with heart disease. BNP promotes sodium and water loss via the kidneys and vasodilation, both of which help decrease cardiac stretch and work. Many cardiac diseases cause excessive cardiomyocyte stretch and increased BNP release. The magnitude of circulating BNP level increase has been correlated to the severity of cardiac disease.

Cardiomyocytes secrete BNP as a precursor prohormone. The prohormone is cleaved into 2 fragments — a bioactive C-terminal fragment (C-BNP) and an inactive NT-proBNP fragment. C-BNP has a short half-life (approximately 90 seconds) which limits measurement ability. NT-proBNP has a longer half-life (approximately 120 minutes) and has enhanced stability during sample handling making it an ideal biomarker.

**Cardiac disease evaluation**

Evaluation of heart disease severity can be challenging as clinical signs are variable and often nonspecific. Heart murmur diagnosis may not correlate with cardiac disease severity. Clinical signs that can be attributed to respiratory and cardiac diseases often have overlap. Diagnostic tests such as echocardiography, electrocardiography and thoracic radiography may not be available at the time of initial examination and may not be appropriate in unstable respiratory cases. These tests may not be feasible for all owners. Recent studies have also provided evidence supporting the identification of specific preclinical cardiac disease stages that may benefit from pharmacologic intervention.

Two of the most commonly acquired cardiac diseases in dogs are myxomatous mitral valve disease (MMVD) and dilated cardiomyopathy (DCM). MMVD is characterized by slow progressive myxomatous degeneration of the mitral valve apparatus leading to regurgitation (leakage) of the valve. MMVD accounts for approximately 75% of heart disease cases seen by North American veterinary practices. Progressive valvular regurgitation leads to cardiac remodeling (dilation of the left atrium and left ventricle) and increased cardiac work. Dogs with MMVD often have systolic heart murmurs with a point of maximal intensity localized over the left thorax over the mitral valve region.

DCM is a primary myocardial disease characterized by cardiac enlargement and impaired systolic function (contractility) of one or both ventricles. DCM is theorized to be the final result of various myocardial insults including genetic, nutritional, viral and toxic processes. There are two stages of disease – the occult (asymptomatic) phase and the overt (symptomatic) phase. The most common physical examination findings are a soft systolic heart murmur centered over the mitral valve and/or a gallop heart sound.

A heart murmur may be the sole finding on physical examination. Additional findings, depending on disease severity can include systolic clicks, arrhythmias, pulse quality changes, ascites, cyanosis, tachypnea, and increased pulmonary sounds and/or crackles. Clinical signs are variable – many dogs with mild to moderate cardiac disease are often asymptomatic. Clinical signs can include exercise intolerance, appetite decrease/loss, cough, breathing changes, nighttime restlessness/orthopnea and syncope.

**NT-proBNP Testing**

NT-proBNP has a longer half-life (approximately 120 minutes) and has enhanced stability during sample handling making it an ideal biomarker.

NT-proBNP levels are measured in serum and testing can be performed by outside laboratories or with in-clinic assays. An assay recently brought to the market by the Bionote veterinary team is the first of its kind for veterinarians providing in-clinic, quantitative NT-proBNP level measurement in minutes. Adding quantitative NT-proBNP test results to exam findings can help identify dogs with advanced cardiac disease that would benefit from further diagnostics and can help monitor dogs with known heart disease.

Bionote’s canine NT-proBNP test is available under its VCheck branded line of tests and analyzers. It is the first and only in-clinic, quantitative NT-proBNP for the detection of heart disease. It should be noted that other BNP testing in the marketplace...
must be sent to reference labs for confirmation, taking more time and incurring a higher risk of sample degradation affecting accuracy. Although no one specific finding or test result is adequate or appropriate for diagnosing heart disease, when many pieces of information are combined, a stronger cardiac clinical picture develops.

**Utilizing NT-proBNP testing in your clinical practice**

Dogs presenting with respiratory signs can be diagnostically challenging. NT-proBNP measurement can further assist with diagnosis. A normal or low NT-proBNP concentration is typically associated with respiratory disease and elevated NT-proBNP levels (>2,500 pmol/L) are associated with cardiac disease.²

Additionally, results of NT-proBNP testing (>1500 pmol/L) in a dog with historical MMVD²³ along with thoracic radiographic changes can detect progressive cardiac disease and predict increased risk for CHF development in the following 3 to 6 months.

NT-proBNP assessment can be combined with other tests for screening purposes.²⁴ A recent study found that utilizing NT-proBNP results with other common clinical values could be used in a predictive model to identify dogs with a higher probability of having stage B2 MMVD²³.

NT-proBNP testing can be used during wellness visits for dog breeds predisposed to heart conditions. Elevations are not disease-specific and can’t solely be used to establish a diagnosis or make pharmacologic decisions. False positives can be observed in certain breeds (Labrador retrievers and greyhounds) and patients with kidney disease.²³

The newest NT-proBNP testing option from Bionote provides an accurate and extremely cost-effective way to assist with cardiac disease diagnosis while patients are still in the clinic. This enables veterinarians to better determine and promptly communicate follow-up recommendations for treatment, with owners. Identifying and encouraging at-risk patients to seek further evaluation results in a greater proportion of patients receiving appropriate care, and is a win for the entire veterinary team.

**REFERENCES**

Demystifying the many myths about cats

An animal behavioralist sets the record straight on where pet parents get their information and sheds light on misconceptions surrounding feline behavior.

He is called “the dog whisperer,” but as it turns out—somewhat famously—I called him “the dog screamer.” And I was not shy about it.

What Cesar Millan was doing was hardly as subtle as a whisper. His TV shows often highlighted aversive training techniques, and I was not the only one exasperated by Millan’s methods—so were members of the American College of Veterinary Behaviorists (ACVB), who happen to like the humane and science-based notion of positive reinforcement.

However, as Millan’s programs enjoyed success, more dog trainers began marketing themselves as whippers or hanging a shingle on their doors and websites, calling themselves behaviorists (which, unless they are boarded diplomats of the ACVB, they decidedly are not).

### Debunking misconceptions

Enough was enough. In 2014, the ACVB authored a book with the hopes of setting the record straight regarding dog training and enhancing awareness of diplomats. The book is called Decoding Your Dog, and I was honored to write the introduction (and gladly promoted the book as if it were my own, though I was a coeditor).

Because of sky-high sales (which are continuing) and favorable reviews, the same publisher had no issue with allowing the ACGV to create a sequel, suitably called Decoding Your Cat, coedited by Meghan Herron, DVM, DACVB; Debra Horwitz, DVM, DACVB; and Carlo Siracusa, DVM, PhD, DECAWBM. Again, I was honored to pen the introduction. The book is primarily geared for pet parents in hopes of dispelling the many myths and misconceptions surrounding cats.

“[When] cats wave a flag, there’s something wrong,” says one of the book’s contributors, Amy Pike, DVM, DACVB, IAABC-CABC. “Well, the cat’s perspective, [that] they’re waving the flag, but many times pet parents don’t notice the change in behavior because cats can be subtle. If the owners do seek help, where are they going?”

Pet parents seem to suggest, more so with cats than dogs, that their pet is out to get them or is being spiteful. “Dogs have changed dramatically from their original ancestors,” adds Herron. I have a French bulldog myself—talk about neoteny (retention of juvenile features in the adult animal).

“However, domestic cats physically haven’t changed a whole lot,” she says. “So that means the behavioral repertoire is quite similar too. A strong hunting instinct, a desire to scratch and climb all over things and, perhaps, to do anything to feel safe—perfectly normal behaviors for cats but problematic for some families. When it comes to cats, our [clients’] expectations are too often not what cats truly are.”

### Promoting environmental enrichment

Although felines tend to be more popular than their canine counterparts and are considered lower maintenance (eg, don’t bark or require walks), sometimes their owners don’t fully comprehend their enrichment needs.

“We don’t write about damaging cat training as we did damaging dog training,” says contributing author Julie Albright, DVM, DACVB, associate professor of veterinary behavior at University of Tennessee College of Veterinary Medicine, Knoxville. “Although cats are way more self-sufficient than dogs, we’re often not fair to cats, not giving them what they need.”

Albright is referring to enrichment. “I actually prescribe enrichment all the time. I have a handout; I circle what’s right for that individual cat,” says Albright. “We talk about what that individual client can do and meet them where they [pet owners] are at. I tell clients to set times and have reminders to ensure that they do it. I talk about how cats can be taught to play fetch. I think there should seriously be an equivalent of canine nose work for cats. I have moose scent and put that on a paper towel.”

Although moose scent is not for all cats, contributor Kelly Ballantyne, DVM, DACVB, says, “Enrichment is no longer considered an important idea; today it’s a necessary idea for all indoor cats.” Enrichment is about meeting cats’ hardwired needs. Albright brings up a new area of study: “Enrichment releases the neurochemical brain-derived neurotrophic factor (BDNF).” At least that’s the case in rodents, humans, and very limited studies in dogs. BDNF serves as a sort of natural antidepressant.

### Pain’s influence on behavior

Another important objective consistent throughout the book is to help clients be more aware that a change in behavior may be a result of a medical issue. “Every day when I was in general practice, people said, ‘Give me the Prozac,’” Herron says. “She adds that clients want a magic pill that doesn’t exist and believe that because the internet says the problem is behavioral, it must be. So, they add litter boxes for the cat with kidney disease; that’s fine, except that the cat still has kidney disease.

A lot of clients get embarrassed to even bring up a behavioral problem, or they don’t think it’s important or don’t think a veterinarian would have any interest in a behavioral problem.

“I suggest private practitioners always ask, not if there’s a behavior problem, but if there’s been any change in your cat’s behavior,” says Pike. “Sometimes people may not even think about it until you ask. Or they may think a change, like an older cat no longer jumping on a counter, is to be expected. Of course, that tells us the cat may be in pain, right? And we can do something for that cat.”

“I’m so glad that cats are finally receiving attention they deserve—and hope Decoding Your Cat clears up the long list of misconceptions and misunderstandings people have about cats,” Albright concludes.

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**REFERENCE**


Steve Dale, CABC, writes for veterinary professionals and pet owners, hosts 2 national radio programs and has appeared on TV shows including Good Morning America and The Oprah Winfrey Show. He is on the dvm360® Editorial Advisory Board as well as the boards of the Human-Animal Bond Association and EveryCat Foundation.
AFTER 15 long months, the Banks Animal Clinic finally reopened its doors. The thriving 6-doctor, small animal practice strictly enforced Centers for Disease Control and Prevention (CDC) guidelines and took additional precautions to ensure the safety of its 44 team members. Staff continued to wear masks despite it not being required for vaccinated personnel.

The COVID-19 pandemic brought unprecedented growth for veterinary services, causing many staff members to experience post-traumatic stress disorder. In addition to being overworked and having to cope with curbside care, staff members were traumatized by the risk of contracting the virus.

Although it was true that curbside care did minimize exposure to pet owners, working shoulder to shoulder with fellow staff members without practicing social distancing only heightened anxiety. Despite wearing masks, maintaining good hygiene, and being diligent, many staff members contracted the virus.

When vaccines became available to veterinary professionals, staff members felt relief but also experienced roadblocks similar to what the public faced. Despite the CDC recommendations, a significant amount of the population chose not to be vaccinated.

At the Banks Animal Clinic, 6 of the 44 staff members were among those who opted against receiving COVID-19 vaccinations. The clinic’s administration recommended that all staff members be vaccinated. Those who expressed hesitancy were advised to consult with respected health care professionals.

Ultimately, 5 staff members decided not to be vaccinated. The Banks Animal Clinic administration agreed that these refusals were not grounds for termination and continued to promote and encourage vaccination participation. Unfortunately, this scenario was seen in many veterinary care facilities throughout the country.

The clinic administration started to experience additional fallout. Several of the vaccinated staff members began to display resentment toward those who chose not to be vaccinated. Some went to the administration to express their disapproval and felt their health was at risk. Others suggested that these staff members be temporarily laid off or furloughed until the pandemic was over or until herd immunity was reached in the workplace.

To address this growing concern, the practice owner, Dr Banks, held a general staff meeting. He explained that a refusal to be vaccinated did not warrant a highly skilled staff member losing their job. He also addressed the fact that opting against being vaccinated can not only put that individual at risk but endangers the health and well-being of their coworkers.

Banks reinforced that all mask requirements, hygiene protocols, and social distancing (when possible) will stay effective until further notice, regardless of the new, less stringent CDC recommendations. He also advised everyone to be vaccinated and urged coworkers to have conversations to resolve any resentment.

Although Banks felt his efforts assisted the staff, some were still experiencing resentment and anxiety. The pandemic had wreaked havoc in several ways. The division, anxiety, and lingering doubts would continue to be felt.

Do you agree with the medical director’s decision? How would you have handled the situation? Let us know your thoughts by emailing dvm360news@mmhgroup.com.

Marc Rosenberg, VMD, is director of 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.
Mark versus gopher: A battle of wit

I learned a valuable lesson when dealing with gophers: Always check your surroundings.

The worst nightmare occurred at Brock Veterinary Clinic in Lamesa, Texas. Gophers had invaded the lameness pad. I got to work one morning and noticed mounds of dirt neatly piled up in the area where we trot horses to evaluate lameness. These rascals dig subterranean tunnels so shallow that if a horse steps over the top of one, it will cave in and possibly break the horse’s leg.

Trouble in paradise

I do not condone killing any creature. I went to veterinary school to learn how to heal, not harm. However, we also cannot have horses breaking their legs during a lameness evaluation because of some hardheaded, elusive gophers that chose to dig up the area. I set out to run them off. My first attempt to rid the land of them was by using gas capsules. I had hoped the terrible smell would make them head to the vacant pasture. Instead, they just dug more holes.

I then tried putting garlic in the holes. Yes, you read that right. I went to the grocery store and purchased 10 lbs. of garlic cloves, dug up the entrance to the burrows, put in 5 or 6 cloves, and then covered it up. Alas, they just dug even more holes. I even tried pouring a gallon of bleach in the hole...they just dug more holes. OK time to get serious. I cannot have horses breaking their legs trotting at the clinic. Now, it is war.

The clinic is located on a highly traveled road that runs through the center of Lamesa. Every evening I would be on the lameness pad digging holes and trash-talking gophers. It never crossed my mind that people passing by would even notice me. But my pal Mark did. Oh boy, did he.

Declaration of war

Because I did not want to use poison, I decided to go with traps. (There are many types of traps you can purchase that will snare, pinch, poke, or grab a gopher.) I purchased several different types of traps and went to work putting them in place. It had become a ritual for me. I would set the traps in the evening when I left the clinic, and then I would check them early in the morning before things got busy. Around 8 every evening I was digging and rooting through the lameness pad and then again about 7 every morning I was back checking things out.

Battle cries

I was not having any luck. Those gophers kept outsmarting me and it was infuriating. I had already gone through 4 different trap styles and now I was on trap type number 5 (and having high hopes). I had attached 6 of those traps to a 6-foot piece of baling wire before placing them in the gopher tunnels.

The next morning, I entered the lameness pad bright and shiny. I began digging up the new traps. The first 2 had nothing. As I approached the third trap, I noticed it looked different from the last 2—could I have finally got one of those rascals? The dirt was really packed around this trap. I was feeling good about it; this was the moment I had been waiting for. For so long, these gophers had outsmarted me—I figured they were hosting meetings as a group every afternoon and made fun of me for being such a buffoon.

My heart was racing as I followed the wire down into the tunnel. It was packed with dirt and hard to move. I dug gently as I pulled. I could see signs that something had packed the dirt. I continued to work the wire and finally saw the trap itself. As I was uncovering the trap, I started to see some hair. These gophers would not best me this time. I was about to dig up the first victim of my “gopher eradication program.” Something was wrong. The hair I first saw caught in the trap was attached to something that didn’t resemble a gopher. It was sort of pink and felt way too firm to be a dead gofer. The more I pulled, the more I realized that this was no gopher at all. In fact, I had no idea what it might be.

I was removing dirt slow and carefully. The more I removed, the more I knew that I had been outsmarted again. This thing, whatever it was, ain’t no gopher. And once I removed more of the dirt, I had even more questions.

Victory? Not so much...

Are you kidding me? I had snagged a naked Barbie doll with gopher-colored hair? Where did that come from? I looked around. I just knew these gophers were peering out another hole somewhere and laughing their tails off at what they had just done to me.

A few days later I got a call from my buddy, Mark. He asked whether I had caught anything unusual in a gopher trap. He had seen me digging around every morning and evening while he drove by and said he decided to give me a surprise one night. All he could say was he wished he had been there to see me dig it up.

Bo Brock, DVM, owns Brock Veterinary Clinic in Lamesa, Texas.
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