Still waters
How traumatic stress is poisoning the profession

For veterinary professionals, compassion fatigue, burnout and depression often flow from a problem far upstream—psychological trauma. And most of us don’t even realize we’re suffering.

» How traumatic stress is like the Flint, Michigan, water crisis page 14
» Traumatic stress, burnout, compassion fatigue—what’s the difference page 16
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A season for reflection, healing and thankfulness

As I write this, the dvm360 team is just returning from the 2019 Atlantic Coast Veterinary Conference (ACVC), newly rebranded as “A dvm360 Conference,” which took place Oct. 14-17 in Atlantic City with just under 1,900 veterinary professionals in attendance.

A highlight of the four-day conference was the Veterinary Crossfire event featuring Charlotte Lacroix, DVM, JD, of Veterinary Business Advisors, and Robert J. Silver, DVM, MS, CVA, of Rx Vitamins for Pets. These two thought leaders focused on the challenging and ever-evolving topic of cannabinoids in veterinary medicine, offering some spirited debate and practical tips along the way. Read more on page 6—along with some tidbits about our speakers you won’t find anywhere else. And for a complete list of our conference coverage from ACVC and other veterinary events, visit dvm360.com/conference360.

In this issue we also look at an ongoing problem for veterinary professionals in an entirely new way. Mental health and emotional wellbeing struggles have plagued veterinarians and their teams for the past 10 years, and this dvm360 Leadership Challenge examines these problems through the lens of traumatic stress, an emerging area of psychological research. See page 14 and beyond for the details—as well as our full coverage at dvm360.com/traumaticstress—but here’s an overview: Experiencing trauma, whether directly (as the one who suffers) or indirectly (as an observer of suffering in someone else), can deeply impact the brain in harmful ways. This often leads to compassion fatigue, depression, suicide and other problems we’re all too familiar with in veterinary medicine. Veterinarian Dr. Hilal Dogan, a certified clinical trauma professional, guides us through this subject in depth and marks out a path toward healing.

As we focus on the things we’re grateful for in our lives this month, the dvm360 team hopes that our veterinary readers find healing and happiness wherever it may appear.

—Mike Hennessy Sr.
Chairman and Founder

The top headlines on dvm360.com last month

Where have all the nurses gone?

Thoughts on the veterinary nurse shortage from a veteran registered technician: dvm360.com/nurses.

Human surgeons operating on dogs: When good intentions aren’t enough

His heart may have been in the right place, but an Atlanta orthopedic surgeon has voluntarily shut down his nonprofit organization after backlash from area veterinarians: dvm360.com/humanorthro.

Why the ‘dental’ divides our profession

When a pet owner can’t afford the highest standard of veterinary dental care, what choices do we have left? dvm360.com/dentaldivide.

Adverse vaccine reactions in veterinary medicine: an update

Although rare, several forms of adverse reactions have been documented after vaccination in dogs and cats. Here’s what veterinary teams need to know today: dvm360.com/adverse.

A behaviorist’s favorite resources for veterinarians, team members and pet owners

Here’s a list of Dr. Lisa Radosta’s favorite books and websites covering behavior issues—from the most common to the most difficult: dvm360.com/radostafaves.

Celebrate National Veterinary Technician Week with us

Appreciation and inspiration for the veterinary technicians who serve pets and people every day: dvm360.com/techweek.

Study: Is there a veterinarian shortage?

Yes. Could we fix it immediately? Yes. Veterinary economist crunches the numbers to quantify the difference between open veterinary positions and DVMs seeking employment: dvm360.com/shortagestudy.

How I got into vet school without an undergraduate degree

Yes, you read that right. This future veterinarian was accepted into veterinary school after her junior year in undergrad. She details how it happened and offers tips to anyone brave enough to go for it in the future: dvm360.com/noBS.
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Veterinarians at ACVC urged to join the cannabidiol conversation

Veterinary Crossfire speakers present differing viewpoints on therapeutic and supplemental use of products derived from hemp.

“**It’s important to encourage companies to invest in the research to establish safety.**”

—Dr. Charlotte Lacroix

VETERINARY NEWS | Conference coverage

Little-known facts about your favorite speakers

**When**

When veterinary professionals attend live conferences like the Atlantic Coast Veterinary Conference (ACVC), they learn a lot from speakers. But odds are they don’t learn much about the speakers themselves. So we asked some of this year’s speakers to tell us what most people don’t know about them. Here’s what they said:

**Kelly St. Denis**, DVM, DABVP, started her first career at age 10 when she recorded a country music album in Nashville with her father and sister. She recorded a second album at age 12 and performed music in various venues on weekends, including bars (yep, bars) and department stores.

**Clifford R. (Kip) Berry III**, DVM, DACVR, is a “chip carver” who uses wood-carving tools to remove selected “chips” of wood from the project in a single piece.

**Kristen Cooley**, BA, CVT, VTS, loves chickens and currently has a flock of nine birds. She also owns a turtle named Francis that she’s had for 30 years.

**Heather Troyer**, DVM, DABVP, CVA, CVPP, loves to vacuum—it’s the lines in the carpet and the lack of crumbs. “It makes me feel complete,” she says. She also loves anything with spray cheese.

**Meghan Davis**, DVM, MPH, PhD, says her craziest publication moment was the day she received her contributor copies and realized her review article had been chosen to inspire the cover of The Lancet Infectious Diseases.

**Brandon Hess**, CVPM, CCFP, played semi-professional soccer in college and spent a summer traveling and playing soccer through Italy and Germany.

**Erin Scott**, VMD, DACVO, enjoys painting and often jokes that she should consider medical illustration as a second career. She hand-painted fundoscopy models for her veterinary students’ skills clinical laboratory and loves how they turned out.

**Stephen Cital**, RVT, RLAT, SRA, VCCS, VTS, says his first ever dream career was to be a monk. His second was to be an entomologist.

**W**

No matter where you practice, chances are good that you’ve received a question from a veterinary client about the use of cannabidiol (CBD) for their pet.

A recent survey from Colorado State University showed that about 30% of veterinarians are questioned weekly by clients about CBD. And an informal poll of the audience at the opening Veterinary Crossfire session at this year’s Atlantic Coast Veterinary Conference (ACVC) showed the vast majority are receiving regular questions about this issue as well.

But how do you answer questions and advise your veterinary clients on this issue when the use of these products, even in the human world, is mired in legal confusion? The answer, according to the panelists, is very carefully, and it depends on which state you’re in.

Charlotte Lacroix, DVM, JD, founder and CEO of Veterinary Business Advisors, and Robert J. Silver, DVM, MS, CVA, chief medical officer of Rx Vitamins for Pets, kicked off the 2019 ACVC with a spirited discussion on the currently confusing world of CBD use in pets.

Drs. Lacroix and Silver agreed in a few areas, including their view of the 2018 Farm Bill, which removed hemp from the Controlled Substances Act. That action was designed to help speed up the commercialization of hemp, but it has led to more states making CBD use legal in humans, primarily for therapeutic purposes. However, as far as veterinary use goes, CBD as a therapy remains off limits.

**Medication or supplement?**

Dr. Silver noted that supplements are not approved by the FDA, so veterinarians could consider recommending CBD as a supplement. But Dr. Lacroix cautioned veterinarians about this thinking.

“If there is an adverse event [related to CBD] and it comes back on you as the veterinarian who recommended it therapeutically, you could be facing a medical malpractice lawsuit,” she said, adding that in most cases CBD is given to pets not to boost overall health but rather for therapeutic purposes, such as to treat anxiety or epilepsy, and this use is not legal.

Dr. Silver countered that the number of adverse reactions related to CBD in animals reported to the National Animal Supplement Council has been extremely small—about nine in 16 million (mainly gastrointestinal disturbances). And emerging data show that CBD use in animals can have benefits, he noted, citing a Cornell study demonstrating that dogs with osteoarthritis who were given CBD had noted pain reduction.

**Let the research continue**

Both panelists agreed that CBD is in an “evolutionary phase” and that more data are needed. “It’s important to have these clinical studies and encourage companies to invest in the research to establish the safety,” Dr. Lacroix said. “It’s tempting to get on the bandwagon and sell it like everyone else … but our decisions are based in science. The FDA is the administrative agency that demonstrates that a product is safe and effective, and until that has been done, I don’t think we can promote these products for therapeutic means.”

Dr. Silver echoed Dr. Lacroix’s call for more research, adding that “veterinarians are being left out of the conversation.” He urged attendees to talk with their state veterinary associations to become more involved in these conversations, encourage more research, lobby for clearer direction on CBD use, and provide further direction on what veterinarians can and cannot discuss with their patients.
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Community engagement found to boost efforts to care for stray cats

TNR programs may fail because local neighborhoods aren’t involved. Social efforts need to join medical efforts, these researchers say. By JoAnna Pendergrass, DVM

A n overpopulation of unowned cats presents significant problems in urban areas across the globe, including animal welfare and public health concerns. Trap-neuter-release (TNR) programs are a common solution to this overpopulation. However, TNR is time- and resource-intensive, and successes can be short-lived without community involvement. TNR programs “are at risk of becoming insignificant in the long-term if human behaviors and attitudes within the community are not taken into account,” wrote the authors of a recent Frontiers in Veterinary Science publication.

These authors describe the development of a social framework within the context of a TNR campaign. This framework, they write, helps identify community barriers to effective management of unowned cats. Targeting and addressing these barriers not only increases the likelihood of long-term TNR success, but also promotes improved welfare for all cats, the authors say.

Why social factors matter
Positive behavior changes often start with education. However, education alone isn’t enough to guarantee sustained change; many other factors influence whether an individual changes a particular behavior.

In their paper, the study’s authors, led by Jennifer McDonald of Bristol Veterinary School in the U.K., explain the use of a framework termed the “COM-B” model. This model consists of three factors that influence behavior change:

1. **Capability**: The ability to perform a particular behavior, along with barriers to that performance.
2. **Opportunity**: External factors (social norms) influencing an individual’s performance of a behavior.
3. **Motivation**: Internal factors (emotions) that trigger the performance of a behavior.

Understanding these factors can help develop tailored interventions to maximize each factor and increase the likelihood of the campaign’s success.

How social factors affect TNR
Developing a TNR-specific social framework first requires identifying the barriers to positive behavior. “It is essential,” the authors wrote, “to engage with communities to understand specific and localized drivers of—and barriers to—desirable behavior toward cats.”

Next, detailed data on these barriers needs to be gathered from community members. This initiative can take many forms, including one-on-one interviews, focus groups, and surveys conducted via email, snail mail or phone. Learning about these barriers can help identify where TNR is needed most and facilitate the development of culturally appropriate educational materials about cats.

How social factors are applied to TNR
To illustrate the framework in action, the authors described a case study that took place in the small town of Bulwell, England. The TNR campaign in Bulwell was named “Bulwell Cat Watch.”

Facilitators first conducted face-to-face interviews with 776 residents to assess intended behavior. Results revealed that:

- Nearly 90% of respondents viewed unowned cats negatively.
- Knowledge about neutering varied widely.
- Most respondents believed in the importance of neutering cats and providing them with veterinary care but did not think it was their responsibility.

The facilitators also engaged the community through Facebook groups, community events and a physical drop-in point where residents could engage with the campaign team. This community engagement encouraged the reporting of unowned cats, which helped identify where TNR was needed most.

The facilitators continued to engage the community during TNR, when 104 unowned cats were neutered, of which 87 were returned and 17 were euthanized due to poor health. An additional 51 unowned cats were rehomed. Notably, 92 owned cats were neutered. The continued community engagement led to nearly a dozen residents becoming involved in Bulwell’s management of unowned cats.

What does it mean for the future of TNR?
Given the success of Bulwell Cat Watch, the authors recommend further study of social factors in areas where TNR efforts are taking place. In addition, the authors believe that engagement of other community services, such as housing authorities, could help address community barriers to managing unowned cats.

When TNR efforts are combined with continued community engagement, “interventions are able to create a legacy of behavior change that is more likely to continue once TNR operations have ceased,” the authors conclude.

Reference


Dr. JoAnna Pendergrass received her DVM from the Virginia-Maryland College of Veterinary Medicine and completed a postdoctoral fellowship at Emory University’s Yerkes National Primate Research Center. Dr. Pendergrass is founder and owner of JPen Communications.
UK study: Women veterinarians overlooked for promotions and often seen as incompetent

Women are increasingly dominating the veterinary profession, but gender discrimination remains an uphill battle, according to a study published in the October issue of Veterinary Record.

Although women make up 76% of U.K. veterinary graduates, according to the researchers, they are often employed as associates versus medical directors or practice co-owners, according to a Lancaster University release. Researchers also found that many women deal with blatantly sexist clients who insist that a male veterinarian treat their pets. Practice managers fail to address these gender discrimination issues.

“Veterinary medicine is still entrenched in a masculine culture,” says co-author David Knights of Lancaster University in the release.

Researchers from Lancaster University interviewed 75 male and female veterinarians in the U.K. They spoke to practitioners in junior and senior roles, ages 25 to 63.

Although questions did not focus on gender-related issues, interviewees frequently brought up the topic. The team found that those in positions of power as well as victims of gender discrimination commonly held the belief that women would not seek promotion, as they only wanted to work part-time.

“On the surface, it could appear that the trend for fewer women climbing the hierarchy is because they sacrifice career for family,” Knights says. “But it is much more complicated than this stereotypical view implies.”

Women, especially those in their early careers, reported that they were treated as if they had limited competence and credibility and were automatically presumed to be potential mothers, which was viewed as problematic for their careers long term. According to the study, women who have children or work part-time are seen to have chosen family over careers and often no longer considered for promotions.

One female interviewee shared that one of her female clients demanded that a male veterinarian come out to see her because she was not happy with the treatment the female veterinarian had delivered. Another interviewee said she felt the need to prove herself to clients.

“Such blatant sexism is rarely challenged by senior vets,” says Knights. “This is partly because they are oblivious to the problems, but also—even when they are aware—they fail to intervene.”

Knights adds that, “Even when we came across examples of senior vets who appeared to be sensitive to gender issues, there was often a reproduction of the chauvinistic attitudes being criticized, with one speaking of the need for female vets to use their charm to make up for a lack of physical strength.”

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Zoetis hints at new monoclonal antibody for osteoarthritis pain

Activities at the WSAVA Conference in Toronto focused on the role of nerve growth factor in pain pathway for dogs and cats.

Zoetis recently alluded to a new monoclonal antibody product in the works that could provide long-lasting osteoarthritis (OA) pain control in veterinary patients by targeting nerve growth factor (NGF) in the pain pathway. At the 2019 World Small Animal Veterinary Association (WSAVA) Conference in Toronto in July, the company supported several presentations related to research and development in chronic OA pain, according to a Zoetis release.

Highlights of Zoetis’ OA-related activities at the conference included:

- Interactive website. Zoetis has launched a website for veterinarians, TheNewScienceofOsteoarthritisPain.com, highlighting the science and tools that support the diagnosis and treatment of OA in cats and dogs. It features videos focused on conducting a successful OA exam, since it’s estimated that 38% of all cats have clinical signs of OA and the prevalence of OA in dogs is believed to be greater than 20%, according to the website.

- Data related to chronic OA and NGF. Key opinion leaders Duncan Lascelles, BVSc, PhD, MRCVS, CertVA, DSAS(ST), DECVS, DACVS, and Margaret E. Gruen, DVM, MVPH, PhD, DACVB, both of the North Carolina State University College of Veterinary Medicine, presented findings on the following subjects:
  - Nerve growth factor, pain and monoclonal antibodies for chronic pain
  - Identifying and measuring OA pain in young dogs

NAVC CEO Tom Bohn to step down in December

Deputy CEO Eugene O’Neill to take over business behind annual VMX conference.

The North American Veterinary Community (NAVC) says CEO Thomas Bohn, CAE, MBA, is resigning from the NAVC at the end of 2019 to lead the Association for Corporate Growth, a group that serves corporate professionals.

Eugene (Gene) O’Neill, NAVC’s deputy CEO and CFO, has been appointed by the organization’s board as interim CEO.

Bohn, who joined NAVC in January 2013, helped diversify the nonprofit organization, tripling its customer base and expanding its portfolio, according to the release. The release credits Bohn for growing the NAVC from hosting a single event—now named the Veterinary Meeting & Expo (VMX) in Orlando, Florida—to a diverse portfolio with magazines, an online news station, a Human-Animal Bond certification program, a service group supporting smaller veterinary associations, and an online recruiting tool for veterinarians.

“Tom has transformed the NAVC into a growth organization and global leader providing continuing education and services to the veterinary community worldwide,” says NAVC board president Cheryl Good, DVM, in the release. “Tom’s leadership, innovation, strategic vision, and, most notable, his passion and commitment to supporting veterinarians and animals everywhere are unmatched.

Prior to joining the NAVC, Bohn served as executive director and CEO of several associations, including the Institute of Internal Auditors.

“Tom has been a joy leading the NAVC’s incredible team of professionals and working with the most amazing people within the veterinary community who pour their hearts and souls into providing better healthcare to animals worldwide,” Bohn says in the release. “Gene has been my partner and right arm since day one, and the NAVC and veterinary community will be well served under his leadership.”

O’Neill joined the NAVC in August 2013. Prior to this, he served as vice president of finance at the Institute of Internal Auditors (IIA) and eventually interim CEO for IIA-Australia. He also held various finance and administration positions at SeaWorld of Florida.
IMPORTANT SAFETY INFORMATION:

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Morris Animal Foundation introduces Data Commons

What do you get when you offer veterinary researchers free access to data from a longitudinal study of 3,000 golden retrievers? A serious opportunity to learn!

In what Morris Animal Foundation is calling a “golden opportunity for researchers,” the organization has launched Data Commons, a new database built from the foundation’s Golden Retriever Lifetime Study.

One of the largest studies of its kind undertaken in veterinary medicine, the Golden Retriever Lifetime Study is collecting data on more than 3,000 golden retrievers. Its overarching goal is to identify nutritional, environmental, lifestyle and genetic risk factors for canine diseases, including cancer.

“We are sharing study data based on the philosophy that the greatest possible positive impact comes from broad collaboration,” says Morris Animal Foundation’s Chief Scientific Officer Janet Patterson-Kane, BVSc, PhD, FRCVS, in a release from the organization. “We hope to inspire scientists to further their research initiatives and build critical knowledge addressing health concerns for dogs.”

Because dogs and people have common genetics, live together and are affected by many of the same diseases, Data Commons is available to anyone affiliated with a veterinary or human medical research institution, such as a university, nonprofit organization or government agency.

“Many large datasets and biological sample collections exist for human medicine and have aided in discovery of new diagnostics, treatments and even cures for a myriad of diseases. They also have created public awareness around lifestyle factors that increase or reduce cancer risk,” Michael Cinkosky, the foundation’s vice president of information systems, says in the release. “Morris Animal Foundation, the Golden Retriever Lifetime Study, and now the Data Commons, are here to improve the discovery process for animals, too.”

The $32 million study, which began in 2012, is expected to last 14 years and collect more than 5 million data points. Data Commons includes historical data from the study cohort in 11 distinct areas: activity, behavior, dental, disease diagnoses, diet, environment, grooming, geographical locations, medications, physical exams and reproduction. Biological samples also are available.

In addition, thanks to a new partnership with the V Foundation for Cancer Research, genomic sequencing data will be added to the Data Commons in the next year.

For more information, visit morrisanimalfoundation.org/data-commons or email datacommons@morrisanimalfoundation.org.

Heartworm symposium reveals latest research

American Heartworm Society promises to share educational highlights soon.

As a part of its mission to better understand heartworm disease and reduce its impact, the American Heartworm Society (AHS) held its 16th Triennial Heartworm Symposium in New Orleans in September.

“Heartworm disease remains one of the most challenging diseases faced by the veterinary profession,” says program co-chair Marisa Ames, DVM, DACVIM, associate professor at Colorado State University College of Veterinary Medicine, in the release about the event. “Whereas heartworm disease was once considered a problem confined to areas such as the Southeastern U.S. and Mississippi Delta, it’s now recognized as a nationwide problem in the U.S. as well as a growing threat in many other parts of the world. This elevates the importance of understanding heartworm disease and discovering new strategies for prevention, diagnosis and treatment.”

Proceedings from the event will be made available to veterinary professionals who didn’t attend in the peer-reviewed journal Veterinary Parasitology, but topics included:

- The role of climate, microclimates, severe weather events, animal transport, mosquito feeding habits and other factors in heartworm transmission
- Research on products to prevent heartworm in dogs and cats
- A discussion on the critical role of the immune response in heartworm prevention
- Studies on heartworm antigen and microfilaria tests as well as strategies clearing antigen/antibody immune complexes
- New insights on heartworm treatment, including a study on doxycycline versus minocycline and additional strategies for managing dogs with severe heartworm disease
- Practical insights on compliance for canine and feline heartworm prevention.

Additionally, new leadership for the organization was announced, with current AHS President Christopher Rehm, DVM, turning over the reins to incoming president and practice owner Chris Duke, DVM, and incoming vice president Doug Carithers, DVM, director of applied research and publications at Boehringer Ingelheim.

Dr. Duke, a co-owner of Bienville Animal Medical Center in Ocean Springs, Mississippi, explained his interest in the many approaches researchers and veterinarians are taking today in dealing with heartworms.

“Scientists are approaching the prevention and management of heartworm disease from many angles,” says Dr. Duke in the release.

For those looking to learn more, additional information from the conference will be provided on AHS’s website (heartwormsociety.org) and also posted on Facebook, Twitter and YouTube.
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Still waters: How traumatic stress is poisoning the veterinary profession

For veterinarians, compassion fatigue, burnout and depression often flow from a problem far upstream—psychological trauma. And most of us don’t even realize we’re suffering. By Hilal Dogan, BVSc, CCTP

Traumatic stress flows freely through the veterinary profession, but most veterinarians aren’t practicing with an active awareness of this fact. And how can we solve a problem without understanding it? Simple answer: We can’t.

As a profession, we’ve focused primarily on symptoms—compassion fatigue, burnout, even suicide—but these are actually linked to the end stage of unresolved traumatic stress. Traumatic stress precedes all of these conditions we name so commonly in veterinary medicine. Educating ourselves on the effects of trauma will improve our health, the health of our practices and the strength of our teams.

What you don’t know can hurt you

It’s fascinating to me as a medical professional who’s undertaken years and years of schooling that there’s still a vast amount I don’t know about healing and medicine. I was faced with this reality when I stumbled into the field of psychological trauma. It was the first time I became starkly aware that what I didn’t know could hurt me—and had likely been hurting me for years.

Within the first few years of my graduating vet school, I began to question my career choice. I found myself struggling to understand why I felt so terrible when I left work, especially after dealing with emotionally intense clients and situations involving patients. In my search for answers, I came across the book The Body Keeps the Score by Bessel Van Der Kolk, MD. Through it I realized I was experiencing traumatic stress and, in turn, not recovering effectively from it.

Psychological trauma, according to the Diagnostic and Statistical Manual of Mental Disorders, V (DSM), occurs when an individual experiences an event involving death or serious injury and feels “intense fear, helplessness or horror” as a result. Once I realized this was happening in my work as a veterinarian, I sought help through therapy. Unfortunately, I couldn’t find a single trauma-informed therapist where I lived at the time in Hawaii.

Eventually I realized I didn’t have time to wait around for help—I needed to help myself. I contacted the International Association of Trauma Professionals and asked if I could pursue training as a veterinarian. They allowed me to enroll in an online course, which led to my certification as a clinical trauma professional.

Around this time I was also diagnosed with an illness that I would later discover was a tumor. While benign, it was causing health complications and affecting my quality of life. It took me almost three years of restorative therapy and multiple surgeries to finally resolve my health issues. I believe it was my discoveries related to traumatic stress that ultimately led to my healing and also helped me stay in a career I love. This is why I am passionately trying to spread the word about this epidemic that is quietly destroying us.

A poisoned river

As an analogy, we can compare psychological trauma to the Flint, Michigan, water crisis. On April 25, 2014, officials in Flint switched the city’s water supply to the Flint River in an effort to cut costs. This change introduced water contaminated with lead and other toxins into homes and businesses. The city of Flint was ill-equipped to handle its financial crisis, so officials made a decision that appeared to be sound initially. But they didn’t have enough support or
resources to make sure their decision was safe, and eventually this led to an even greater crisis—one that threatened the health of the city.

In this scenario you can think of your brain as the city officials—the ones in charge—and your body as the city. The brain likes to be efficient and economical. It commands decisions that affect the rest of the body. After a traumatic experience, if the trauma is not successfully resolved, the brain often employs a “diversion” tactic. This helps the brain save on costs associated with dealing with the pain of the trauma. However, this can lead to more serious consequences downstream.

Our brains are often not equipped to process trauma effectively. Some people have better resources (such as a personal support system), and others have services that is known as inherent resiliency (systems in place to quickly mitigate adverse situations). Likewise, some cities have better financial health and community support than others. Luckily for your brain (and the city of Flint), help can come from elsewhere, and you can heal even after trauma. However, if you continue to be unaware that the well is poisoned, you ignore signals of distress, you could be harmed irrevocably.

**A coverup of the brain**

A coverup of the brain. It’s interesting how, when the water change initially occurred in Flint, some residents tried to alert officials but were silenced. This coverup led to even more sickness in Flint, even after the truth came out. If the facts had been revealed sooner, fewer people would have had to suffer, and the damage may not have been as catastrophic.

Similarly, the brain likes to protect itself if it feels like it’s under attack, so it hides facts and keeps secrets, hoping things will move along undisturbed. Often with trauma, the body feels or senses something is wrong and tries to alert the brain. But the brain shuts off or ignores these alerts because it’s too busy worrying about other things coming its way, and it has a difficult time distinguishing what to prioritize.

In the end, the poison continues to flow downstream, causing residual effects for years to come. This is how secrets can continue to poison the well.

**Lovely on the surface**

A person who’s passing by the Flint River and doesn’t know its history might see it as beautiful and refreshing. They might want to take a dip in the river or fish from it. But in its depths is poison. It can also poison things around it: soil, foliage and so on. Often you can’t tell just by looking at something if dangers are hidden beneath the surface. Some things are hidden so well that even the person who did the original hiding has forgotten where and what it is.

Just as with lead poisoning, the effects of unresolved traumatic stress build up over months or years before outward manifestations of the toxicity appear. Symptoms can include developmental delays, learning difficulties, irritability, loss of appetite, weight loss, fatigue, abdominal pain, high blood pressure, joint and muscle pain, headaches and mood disorders. These are symptoms of lead poisoning—but they can also be symptoms of unresolved traumatic stress.

**What you do know can heal you**

What is the cure for lead poisoning? Treatment involves avoiding further exposure to lead, chelation therapy (if blood levels are confirmed around 45 µg/dL) and dietary changes (such as making sure your iron and calcium levels are adequate, as this prevents lead from being able to bind, be absorbed or be stored). There you have it: (1) Reduce exposure. (2) Therapy. (3) Protecants.

What is the cure for psychological trauma? The exact same steps.

**Reducing exposure.** Unfortunately in the veterinary field, we are repeatedly exposed to traumatic situations and are at risk for post-traumatic stress disorder (PTSD; sometimes referred to as “primary traumatic stress disorder”) and secondary traumatic stress disorder (STSD). Therefore it can be a struggle to reduce our exposure to sources of traumatic stress, especially if we don’t even realize we’re suffering. Just like the people of Flint, we can’t resolve our crisis until we know our level of exposure. This dvm360 Leadership Challenge includes many examples of how traumatic stress can manifest in veterinary medicine; find more at dvm360.com/traumaticstress.

**Treatment and protection.** The most healing treatments for trauma involve knowledge and support. Understanding causation and knowing what to do empower us to get back in the driver’s seat after our brains have been autopilot. Having people around us who can support us—whether it’s in our workplace culture or with the help of a professional therapist—will help us find our blind spots.

I hope you will continue to explore this topic through a deep dive into this dvm360 Leadership Challenge. If you find yourself thinking, “Nope, this is of zero interest to me,” I still urge you to keep reading, as it might help someone you know or work with. For now I will leave you with a quote from one of the fathers of research in the area of psychological trauma:

“If you are experiencing strange symptoms that no one seems to be able to explain, they could be arising from a traumatic reaction to a past event that you may not even remember. You are not alone. You are not crazy. There is a rational explanation for what is happening to you. You have not been irreversibly damaged, and it is possible to diminish or even eliminate your symptoms.” (Peter A. Levine, PhD, Waking the Tiger, Healing Trauma). dvm360

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**After a traumatic experience, the brain often employs a “diversion” tactic. This helps the brain save on costs associated with dealing with the pain of the trauma. However, this can lead to more serious consequences downstream.**
Trauma is not compassion fatigue—and other misconceptions clarified

Every year, Bessel Van Der Kolk, MD, founder and medical director of the Trauma Center in Brookline, Massachusetts, holds an international trauma conference in Boston. As with veterinary conferences, leading research is presented, problems are discussed and solutions are explored. I attended the event this year with the goal of asking some of the experts if they thought veterinary professionals were exposed to significant traumatic stress. The short answer from Dr. Van Der Kolk? Yes. The long answer is a bit more complex, but it starts with definitions.

These definitions are not provided for self-diagnosing, or diagnosing others, but they will provide you with a better understanding of traumatic stress. This information can provide a starting point for a conversation with a mental healthcare professional if you recognize any of these symptoms in yourself or others. These are paraphrased, and if you would like to see full definitions outlined exactly, please refer to the most current version of the Diagnostic and Statistical Manual of Mental Disorders (DSM).

**Primary stress injuries**

Primary stress injuries are brain and body changes that happen directly to you. Secondary stress injuries, which I’ll cover later, happen to someone else, but they create brain and body changes in you.

**Acute stress** is the most common form of stress. In the short term, it doesn’t have enough time to do the extensive damage associated with long-term stress. Common symptoms are:

- Emotional distress, a combination of the three stress emotions—anger or irritability, anxiety and depression.
- Muscular problems, including tension headache, back pain, jaw pain and tensions that lead to pulled muscles and tendon and ligament problems.
- Stomach, gut and bowel problems, such as heartburn, acidic stomach, flatulence, diarrhea, constipation and irritable bowel syndrome.
- Acute stress can lead to transient overarousal, which manifests physically as elevation in blood pressure, rapid heartbeat, sweaty palms, heart palpitations, dizziness, migraine headaches, cold hands or feet, shortness of breath and chest pain. It can crop up in anyone’s life, and it’s highly treatable and manageable.

**Acute stress disorder (ASD) is the initial reaction to witnessing or experiencing psychological trauma. The DSM characterizes ASD with these principal criteria:**

- Experiencing intense fear, helplessness or horror in response to a traumatic experience.
- Displaying three or more of the following dissociative symptoms:
  - Emotional numbing
  - Detachment or absence of emotional responsiveness
  - Reduced awareness of surroundings
  - Derealization (a feeling that the external world is unreal) or depersonalization (a feeling of being detached from oneself or one’s surroundings)
  - Dissociative amnesia (blocking out memory of personal information).
- Exhibiting at least one symptom from each of the following groups: >>
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Secondary stress happens when you observe something happening to another but feel effects in your own brain and body. The difference between primary and secondary stress is in relation to how they occur, but the result is the same.

you get hurt, my brain lights up like I got hurt. The way mirror neurons function and their role is still a topic of controversy (see dvm360.com/AnestheticLoss for a discussion of their role in anesthesia cases), but experts believe they’re linked to empathy, because they “light up” on brain imaging studies and affect how we respond when we see or hear something.

How does this translate to veterinary medicine? Well, there are both positive and negative impacts. When we see a happy, cute, bouncy puppy, we also get happy, cute and bouncy. Even if we don’t outwardly display this, we feel it. However, when we see a sick, emaciated, dying animal that appears to be in pain, we also take on that pain. We may seek to give it pain medication right away or euthanize it in an effort to stop the pain. We end up taking on secondary trauma not only from animals, but also from our clients and coworkers.

So, secondary traumatic stress occurs when you observe something traumatic happening to someone else. If you can’t cope, you may develop secondary traumatic stress disorder (STSD, aka compassion fatigue).

Recently I saw this comment on Instagram from a veterinary colleague: “Doctor was being mauled in the [exam] room and I was at the far end of the hospital on the microscope. I still get the shakes if there is a loud noise and I am at the scope.”

In this example, the person is “triggered” to relive somebody else’s traumatic event by any loud noise they hear when they’re at the microscope. If symptoms like “the shakes” have lasted more than four weeks, a mental health professional may diagnose this individual with STSD. You can see how crucial it is to understand how trauma affects our team: This person may avoid performing tasks at the microscope, and that could negatively affect their ability to work.

Controversies surrounding trauma definitions

Clinicians and researchers have criticized some aspects of the definition of psychological trauma. The debate over what constitutes a traumatic event emerged with the first inclusion of the diagnosis in the third edition of the DSM and has persisted. Some postulated that weakening the A1 criteria (direct experience of a trauma) had detrimental outcomes in client care and supported a too-narrow definition that didn’t include those with secondary traumatic stress. They argued that the fourth edition DSM’s broad definition of trauma led to overdiagnosis of PTSD resulting from less-threatening events. Others starkly disagreed, suggesting that what may be traumatic for one individual may not be for another, and that an attempt to include all possible traumatic events within the context of a diagnosis was futile.

Unfortunately, experts don’t currently agree on what definitively counts as a traumatic event or situation—the individual perceives it as traumatic or nontraumatic. In other words, trauma is in the eye of the beholder. For instance, when I’m working in the ER, I may not be traumatized when I see a brachycephalic dog whose eyeball popped out after the dog was stepped on. As a matter of fact, I see it as an exciting challenge because I love trying to replace that eyeball. It can be gratifying. However, to the pet owner, or even someone else working in the hospital, that same event may be perceived as traumatic. With the last case of this I saw, I sent a picture to my sister and a friend before and after tarsorrhaphy. They were disturbed and requested no more photos of that ever again.

Compare our example from earlier (the veterinary professional who was bitten and now panics every time a dog growls) to another Veterinary Confessionals post: “I had a Lab bite off my thumb but I still like Labradors. Took seven weeks of skin grafts and three surgeries to fix it. Still like my job. Love it.”

These are two similar veterinary clinic events that could have been equally traumatic. Yet it seems the first person was traumatized, and the second person wasn’t.

And animal trauma?
The brachycephalic dog with proptosis may be traumatized or it may not be. We know that psychological trauma likely exists in mammals with similar brain structure to ours. We all have seen some animals that are extremely resilient and can bounce back from anything and others that seem traumatized by the smallest event.

Yet our knowledge in this area is still infantile. Perhaps once we learn more about psychological trauma in humans, we can dive deeper into exploring what it might be like for the animals we treat. In turn, perhaps similar methods used to heal psychological trauma in people could be used someday to help heal psychological trauma in animals. dvm360

Frequent Fetch dvm360 speaker Dr. Hilal Dogan practices medicine in Denver, Colorado. She started the Veterinary Confessionals Project as a senior veterinary student at Massey University in New Zealand.

—Re-experiencing the event (recurring thoughts, memories, dreams or flashbacks)
—Avoidance of trauma-related stimuli (deliberately avoiding reminders of the trauma)
—Anxiety or increased arousal (increased autonomic nervous system activity)
—Significant distress or functional impairment that persists.

> Lasts more than two days but less than four weeks.

If the duration of ASD exceeds four weeks, post-traumatic stress disorder (PTSD) may be diagnosed.

Psychological trauma has two prerequisites—so-called A1 and A2.

A1. A direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one’s physical integrity; witnessing an event that involves death, injury or a threat to the physical integrity of another person; or learning about an unexpected or violent death, serious harm or threat of death or injury experienced by a family member or other close associate.

A2. An experience of “intense fear, helplessness or horror” following the event.

Primary traumatic stress happens directly to you. If you can’t cope, you may develop PTSD. Examples in the world include traumatic accidents, death, rape or sexual assault, war, violence and even neglect.

More specific examples in veterinary medicine might include being attacked or bitten by animals, threatened by clients or others, anesthetic or other procedure-related deaths, and professional mistakes such as surgical errors or drug overdoses.

Consider this post from the Veterinary Confessionals Project (see dvm360.com/vetconfessions): “I was badly bitten, broke my hand. Now when a dog growls I have a panic attack.”

This could be an example of PTSD (if it lasts more than four weeks), because the response to a dog growling is “exaggerated.” Having a self-described panic attack every time a dog growls would severely impede your ability to effectively deal with the situation. A more appropriate response would be to back off and consider sedation or a muzzle.

Secondary stress injuries

Remember, secondary stress injuries happen when you observe something happening to another but feel effects in your own brain and body. The difference between primary and secondary stress injuries are in relation to how they occur, but the end result is the same.

To understand secondary stress better, we need to understand mirror neurons, a strange category of neurons that function through observation. For instance, if I see you smile, my own neurons perceive as traumatic. With the last case of this I saw, I sent a picture to my sister and a friend before and after tarsorrhaphy. They were disturbed and requested no more photos of that ever again.

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Paid on production?
Don’t get ripped off

Small contractual oversights in calculating production-based pay can add up to substantial chunks of money in your associate employment contract. Here’s what to watch—like a hawk.

At a muscle-car auction many years ago (I’m a total classic-car nut), I met a fellow from Queens, New York, who’d amassed a major auto collection. Over a couple of beers (free for bidders), he told me all about his job—commission salesman. And judging from his stable of vintage Detroit iron, apparently a very successful commission salesman.

After I shared a bit about my work as a veterinarian, John explained that he made his living selling deposit bottle redemption machine contracts. You know: the gizmos you slide your empties into to retrieve the deposit you paid when you bought your diet soda or Coors Light. He was pleased to opine on the topic of what works in commission sales and what commission salespeople need for success.

I was intrigued and explained that his remuneration scheme sounded eerily similar to the production-based pay we refer to in our profession as “ProSal.” (Editor’s note: Mark Opperman, CVPM, argues that ProSal refers to his specific production-plus-salary formula that gets lumped in with all production-based pay plans. See dvm360.com/prosal for the basics.)

“I didn’t know vets got paid on commission,” he said. I replied that we don’t really call it that—that wouldn’t sound professional.

“You can call it ‘ProSal’ or whatever you want, doc,” John said. “But you guys are commission salesmen. And commission sales, well, it’s dog eat dog.”

I overlooked the marginally amusing pun. Long story short, my new friend offered to share—and I was anxious to learn—his tips on how to avoid being taken advantage of when your pay is based on the revenue you generate for your employer. I’ve set forth some of John’s valuable insights here, and translated them into veterinarian-speak. >>
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**Check what products and services are missing**
Small contractual oversights in production-based pay can add up to substantial chunks of money. John knows exactly how much time it takes to service a machine, the financial return to his stores and what his competitors are offering. His contractual commission pay is affected by these and numerous other details.

Similarly, when a veterinary associate contractually agrees to be paid either in part or entirely based on a percentage of total generated revenue, she’d better know clearly and unambiguously what percentages apply to which goods and services she’ll be providing. Here’s a classic example:

Many contracts I review exempt specific items from “gross associate-generated revenue” used to calculate the associate’s pay. Some of these exclusions I can justify: sales tax, cremation fees, medical waste charges. OK, I get those. But what about these items from contracts I’ve recently come across?

- “Associate will not receive credit toward her gross production revenue for heartworm preventive.” (Really? After a 20-minute explanation/pitch about the importance of using such products?)
- From a boarded intern’s contract: “Associate will receive no revenue generation credit for in-house laboratory work or laboratory work performed at outside labs.” (What? Blood analyses are among the largest fee generators in the intern’s roster of services.)
- From a boarded surgeon’s contract: “Associate will not receive credit toward a production bonus for radiographs.” (Of course not—the surgeon only has to spend 40 minutes reviewing the film with the pet owners to convince them to let him perform the pet’s exploratory.)

**Negotiate your percentages**
Look closely at the items not included in your gross revenue. If there are a lot of exclusions—prescriptions, prescription refills, flea preventives, whatever—one alternative to insisting that these items be included would be to ask for a higher-percentage commission on products and services that are included.

**Equine docs shouldn’t do free work**
A special shout-out to you hardworking equine associates on production-based pay. Time and again I see equine doctors sign contracts that don’t make adequate reference to “free work” they so often have to perform. Before signing your contract, make sure you will not be required to do extensive “complimentary” work for the clinic owner, his friends or his family or gratuitous work for stable or barn owners.

Equine veterinary pay is already well below what it should be, in my opinion. An associate needs to make sure her contract includes the fair value of services provided for free by her employer but that are actually performed by the associate.

One option would be to ask for a greater overall percentage (say, a jump from 20% to 22% of gross generated revenue). A second option would be to ask that there be no change in the original percentage but that the percentage apply to either or both of the following items routinely left out of the associate’s revenue credit:

1. “Drugs, medications and therapies that are subject to low or no markup.” This language means the hospital doesn’t make as much money as it would like to on items like Baytril or chemotherapy agents, so the associate has to share the hit.
2. “Gross production revenue will not be granted on charges that are not paid by the client within 90 days.” This widely used phrase means, “If we can’t get a client to pay for what the associate has done, the associate doesn’t get paid for the work either.” Forget about the fact that associates almost never have any control over their employer’s credit policy and/or how aggressively accounts receivable are pursued.

**‘Trust but verify’ your production-based pay**
My car buddy told me that one of the most critical things that commission salespeople need to do is “spot check” items calculated in their commission. Honest mistakes and outright ripoffs happen in the bottle-return commission world constantly. And I can assure you: The same is true in the veterinary compensation world. I see it all the time.

Here are some pointers for ensuring that you receive the pay you rightfully deserve with production-based compensation:

> Insist that your contract include a term specifically entitling you to review all records relevant to determining your gross revenue calculation for all cases you see or treat. If the clinic is hesitant to agree to that, you should be wary.

> Start early in monitoring your revenue and how it’s calculated. First, it’s good to get your employer used to your checking the numbers. Second, if you find errors long after a bonus has been paid, it may be more difficult to convince your employer to pay you retroactively.

> Remember, major calculation errors can occur from a number of sources. I’ve run across software issues affecting multiple associates in the same practice. Also, there could be a single receptionist or veterinarian technician who is entering data incorrectly.

**Associates, stay on your toes**
Determining an associate’s compensation is much more complicated when it’s based on revenue generation. As I told my auto enthusiast amigo, ProSal and other production-based pay contracts are here to stay. The key to receiving fair treatment with commission-based compensation is to be aware and proactive in scrutinizing both the employment contract and the employer’s revenue accounting. At the end of the day, whether you call it commission or production, a person should be paid for the work he or she does. And making sure that happens is the job of both employer and contract employee. dvm360

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Food aggression: Eligible for insurance coverage or not?

A proactive pet owner who receives competent and successful veterinary care for a behavior issue has her claim denied. Who’s correct in this scenario?

Dr. Lisa Haywood had been caring for Fred, the Lanes’ German shepherd, for four years. Fred received on-time preventive care, was microchipped, was covered by pet health insurance, and had loving owners.

Recently the Lanes had been visited by their daughter and grandchild. When Fred was eating his dinner and the youngster approached the dog, Fred reacted. He growled at the young boy, the youngster walked away, and Fred continued to finish his dinner. This alarmed Mrs. Lane and she immediately called Dr. Haywood.

The next day Fred came to see Dr. Lisa, his favorite veterinarian. In the exam room, the veterinary technician took Fred’s vitals and discussed the reason for his visit. Mrs. Lane told the technician what had happened when her grandson approached Fred’s food bowl while he was eating. She hoped to resolve this behavior if at all possible.

Dr. Haywood entered the exam room. She examined Fred and found him to be a healthy patient. She discussed the recent issue involving the young boy and Fred’s reaction around his food. After the examination, Dr. Haywood told Mrs. Lane that the behavior Fred displayed was not a result of any pathology. His response to the young boy was a normal protective behavior displayed by many dogs when eating. In some dogs this protective behavior is more pronounced.

She went on to say that the simplest remedy was to feed the dog in an undisturbed setting. In this case, due to the unique circumstance of the continued presence of an inquisitive youngster, a consultation with a veterinary behaviorist would be appropriate.

Mrs. Lane was relieved. She was referred to a behavioral specialist with a diagnosis of exaggerated food-driven protective behavior. The behaviorist assisted Fred by teaching Mrs. Lane some behavioral modification techniques that would alter the dog’s response to her grandchild’s intrusions. Fred responded beautifully, the child was told not bother the dog when he was eating, and all was well.

That is—until Mrs. Lane submitted her pet insurance claim.

The insurer declined both her primary and specialist care treatments based on the fact that the medical history revealed a possible pre-existing behavioral condition that excluded the dog from coverage. Mrs. Lane protested the exclusion to no avail. Finally, she went to her primary veterinarian for help. Dr. Haywood agreed with the owner and contacted the insurance carrier on her client’s behalf.

Dr. Haywood made two points. First, her diagnosis and history clearly indicated that the dog’s behavior was not pathological but simply a variation on the norm. Second, the judgment that a pre-existing condition may have existed was based on the owner’s description of the events as noted by the technician in the record. The insurance company should make a determination of a pre-existing condition based on the medical notes memorialized by a licensed veterinary professional. Client input in a medical history is a layperson’s interpretation of clinical signs and is often misconstrued or inaccurate. She went on to say that, in this case, the veterinarian had never indicated any pathology or presence of an excludable condition in her medical notes.

The insurance company took the case under appeal but ultimately denied the claim. They maintained that the dog had displayed aggressive behavior multiple times over several months. In addition, as the veterinarian had stated, this was not a medical issue but in fact within the scope of normal behavior. They respected the owner’s efforts to pursue veterinary treatment for the problem; nevertheless, just because the behavior had been recently exacerbated did not mean this dog’s aggressive tendencies were not present before insurance had been acquired when the dog was 14 months of age.

No one was happy with this outcome—no one except Fred, who now had a private dining room.

Who do you think was correct in the situation? We would like to know. Email us at dvm360news@mmhgroup.com.

Dr. Rosenberg’s response

First of all, this is an actual case (names have been changed to protect the innocent). Some canine behavioral issues are clearly rooted in eligible medical disorders. For example, acute separation anxiety, head trauma, seizure activity, brain lesions and the toxic ingestion of behavior-altering substances have all been associated with behavioral signs in pets.

But pet insurance should not be considered a be-all and end-all. It’s an adjunct support that a responsible pet owner uses to help defray unexpected professional care fees. This particular behavioral problem involving the health and wellbeing of a youngster was not necessarily a behavioral abnormality, but it was a behavioral problem. The spirit of pet health insurance and its coverage was never intended to pay for canine idiosyncrasies. I do not want to minimize the gravity of this particular situation. It mandates a satisfactory resolution. Nevertheless, I feel it goes beyond the scope of the pet healthcare mandate.

Dr. Marc Rosenberg is director of the Voorhees Veterinary Center in Voorhees, New Jersey. Although many of the scenarios Dr. Rosenberg describes in his column are based on real-life events, the veterinary practices, doctors and employees described are fictional.
What’s your vision for the future of your business?

Questions to ask as you enter discussions with potential partners.

NO. 01
Is it the right culture fit for your team?

As you begin considering your options for selling your pet hospital business, it’s important to find a partner aligned with your values, respectful of the individuality of what you’ve built, and equipped to grow your business, while your team and culture remain intact.

Ask around to find out which buyers have the best reputation for caring for pets and the people who love them.

NO. 02
Are there flexible deal structures?

Because selling your pet hospital is such a personal decision, you’ll want to understand what types of options are available, and to what level they can tailor the terms to meet your needs.

ASK IF THE BUYER CAN:
• Make all cash offers with no finance contingency
• Offer Joint Venture partnerships for growth and flexibility
• Buy the real estate outright or lease from you

NO. 03
How comprehensive are the support services?

As you contemplate transitioning your business, you’ll want to know every aspect is covered. Seek out a partner with a dedicated team seasoned in marketing (including digital advertising and social media strategy), web development and hosting, client satisfaction surveys, IT, HR, accounting, taxes, legal and more.

NVA has over 700 partnerships in the US, Canada, Australia and New Zealand. Our passionate, visionary local pet resort and hospital leaders embody NVA’s unique entrepreneurial spirit. We’d be more than happy to talk through your questions and concerns. You can reach us at 888.767.7755 or info@nva.com.
As Americans prepare for the prolonged process of selecting our country’s leaders, my other home of Anguilla is beginning the same process on a smaller scale. So these days I find myself listening to and watching two elections that will impact my life, trying to stay informed in a sea of disinformation and wondering how people make their voting decisions. What do we look for in our leaders?

In architecture, there is a truism that form follows function, which is the idea that design should reflect the ultimate purpose of a building. Unfortunately, in politics it seems that function follows form. Leaders make decisions—and we pick them—based on their personality and style, rather than character and substance. That virtually guarantees that elected leaders lack the skills to be a good leader and make good decisions.

What separates the wheat from the chaff? What does it take to be a better leader, not just someone who can convince people to give them a management job or be elected to office? According to experts, it’s probably a mix of innate talent and learned skills that result in flexible leadership that allows an individual to adapt to different situations. To be a successful and effective leader in changing and challenging settings one must adapt to change.

Autocratic, demanding leaders (most of us have had them one time or another) are rarely successful. They never were leaders. They were bosses. That used to work but no more. Leaders today in public office, in business and in veterinary practices must come prepared with the following traits and tools.

Communicate well and truthfully
As in most corners of life, the most important skill to master is communication. When I think back on the best leaders I’ve worked with, they were great communicators. Poor communicators aren’t trusted or respected, because they’re dishonest and delivering less than they ask from others.

Truly great leaders are clear, consistent, truthful and genuine. Lying and inconsistency make it hard to feel safe, interpret the truth or prepare for the future. It’s important for leaders to internalize the fact that untruths and exaggerations result in people not trusting and therefore not listening to you.

Great leaders must be trustworthy. Once violated, trust is gone and results in a loss of commitment and loyalty. After all, why trust a person who has been proven untrustworthy? More lies and misdeeds will surely lie ahead.
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Contact a Representative Today!
Show fairness
Treat everyone fairly and equally. Playing favorites undercuts relationships not only between management and team members but among team members. A sense of unfair treatment has been shown to increase staff turnover and back biting. Bullying, real or perceived, decreases employee and customer retention. The best leaders have a skill for treating people fairly and right.
Leaders make sure that praise and recognition are disseminated appropriately to all. They don't need to be the hero. The goal is cooperation and collaboration, a team working together to optimize one another's strengths and balance each other's weaknesses.

Be willing to listen and learn
There's no place in leadership for a know-it-all. Know-it-all leaders create a culture where people stop sharing ideas and eventually stop participating at all. The know-it-all stifles creativity. Pretty soon, staff meetings result in a room full of crickets. The know-it-all gets what they want: They're always right.

Be strong, not the focus
Naturally, a leader should be strong and confident but not egotistical. Humility is a critical trait of a strong individual, and strength is crucial for leadership. I've heard it said, humility isn't thinking less of yourself—it's thinking of yourself less.
I asked my son recently what he does at an international consulting firm. The answer left me unclear on his duties, but crystal clear that he knew what he was doing: “My job is to make sure that everyone on my team succeeds and shines.” I think I'd like to work for him.

Lighten up
Being an extraordinary leader is not as easy as having your name on the letterhead or your desk. Leadership is stressful work that requires involvement in every key decision and puts big decisions on your shoulders. Laughter and a sense of humor carry you and those you work with a long way. Even in difficult times, a friendly smile or a laugh are contagious and go a long way to a generally positive environment. Laughter relieves stress, improves attitudes and enhances personal satisfaction. Ultimately, maybe laughter is the best medicine.

Imagine the leader you want to be and live by these rules of leadership.
**MEDICINE | Pain management**

**Pet owner perceptions of small animal surgery, anesthesia and pain management**

You don’t need us to tell you about the importance of client communication. But a recent survey proves a gap in pet owners’ understanding of animal pain and surgery.  

By Natalie Stilwell, DVM, MS, PhD

As you know, effective client communication is a vital component of a successful veterinary practice. Pet owners’ perceptions of veterinary procedures have been reported in Canada and Finland, revealing that many owners believe they receive insufficient information from their veterinary service providers. Until recently, however, an equivalent study had not been performed in the United States.

**What researchers did**

Investigators at Texas A&M University conducted a survey to gauge the opinions and perceptions of small animal pet owners in the U.S. about surgical procedures.

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ONE HEALTH
Study applies human research to canine encephalitis

ONCOLOGY
In defense of the incisional biopsy

ENDOCRINOLOGY
Complicated diabetes cases: Foiling the frustrations

DENTISTRY
The ABCs of veterinary dentistry: ‘T’ is for treatment of oral disease

SURGERY
GDV: It doesn’t have to make your stomach turn

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anesthesia, pain management and client communication during the perioperative period. The study’s purpose was to identify knowledge gaps that would help veterinarians provide “education on perioperative pain management during a client visit” to “improve compliance, [the] veterinarian-client relationship, client satisfaction, and patient wellbeing.”

The authors generated a survey adapted from similar studies conducted in Canada and Finland. Eight privately owned, small animal referral hospitals in Alaska, Florida, Hawaii, Massachusetts, Ohio, Oregon, Texas and Washington, DC agreed to participate in the study. The participating hospitals met all the inclusion criteria, which included a sufficient caseload and current employment of at least one board-certified veterinary specialist.

Each practice distributed 200 paper surveys to adult dog- and cat-owning clients on a voluntary basis from March to June 2016. The study’s principal investigator also assigned one employee at each practice as a survey leader to collect and return the completed surveys, which clients sealed in envelopes to maintain anonymity.

The survey, which was designed to be completed within five minutes, consisted of 34 questions that were each answered by checking a box best representing the pet owner’s beliefs. In addition to collecting owner demographics, the survey questioned owners on their perceptions regarding the following categories:

- The need for analgesia for specific surgical procedures and medical conditions
- The importance of perioperative client communication and having a board-certified anesthesiologist perform anesthesia
- The understanding of pain and pain management in veterinary medicine.

The authors performed statistical analyses to examine relationships between client demographics and survey responses. Client age was divided into two categories based around the median age of 46 years, and education level was classified as either at or below high school level or at college level and above.

What they found

Of the 1,600 questionnaires distributed, 948 (59.3%) were completed. Seventy-four percent of respondents were male, and 99% indicated a college-level or higher education. Approximately one-quarter of respondents were healthcare professionals. Pet ownership was classified as either at or below high school level or median age of 46 years, and education level was classified as either at or below high school level or at college level and above.

Pain management. Between 50% and 75% of all respondents indicated that pain medication was important while treating lameness and ear infection, suggesting that owners do not recognize lameness as an indicator of pain and that, likewise, they do not consider otitis a painful condition. While 76% of respondents at least partially agreed that pain medication helps accelerate surgical recovery, 38% also considered postoperative pain to be beneficial during the recovery process as it limits a recovering animal’s activity. Approximately half of respondents also indicated concern for possible negative side effects associated with analgesic drugs.

Detailed analysis of pet owner demographics revealed that college-educated individuals, healthcare professionals, or respondents who had undergone surgery themselves or owned pets with previous surgery all generally considered pain medication for surgical procedures to be of higher importance than did other respondents. Healthcare professionals were also more likely to agree that the use of postoperative pain medications speeds recovery.

Perception of feline declawing procedures. Overall, 59% of respondents agreed that declawing is a painful procedure, and 32% believed the practice should be banned in the U.S. Compared with other respondents, those who were female, cat owners, healthcare providers, or owners of pets that had had previous surgery were more likely to want a declaw ban.

Anesthesia. The majority of respondents (93.6%) reported that having a board-certified anesthesiologist perform anesthesia on patients was important, a response that was higher in women than in men.

Preoperative communication, education and client expectations. Women were also more likely than men to place emphasis on knowing what to expect during surgery and how to manage postoperative pain. The cost of pain medication and the risk of side effects from pain medication were not as much of a concern for respondents who were college educated or owned pets that had undergone surgery previously.

Take-home points

These survey results revealed that client education is an important component of effective veterinary care. Most survey respondents stated that receiving detailed information regarding surgical procedures, cost of services, and expectations for recovery was very important, thus indicating that pet owners value honesty and inclusion from their veterinarian. Similarly, previous studies have shown that veterinary clients who receive a greater amount of communication from their veterinarians are more satisfied with the level of patient care.

Furthermore, pet owner demographics and education level appeared to affect how owners felt about the subject of pain management. The authors cited human medical studies that revealed patient compliance increased with a greater level of communication and education from healthcare providers. They also emphasized that clients should be informed during preoperative discussion about current American Animal Hospital Association and American College of Veterinary Anesthesia and Analgesia guidelines, which describe pain management as a necessary component of all surgical cases.

Finally, in fulfillment of the veterinarian’s oath to “do no harm,” practitioners should always make sure that clients fully understand the negative consequences of pain on their pets’ health and welfare.

References


Dr. Natalie Stilwell provides freelance medical writing and aquatic veterinary consulting services through her business, Seastar Communications and Consulting. In addition to her DVM obtained from Auburn University, she holds a MS in fisheries and aquatic sciences and a PhD in veterinary medical sciences from the University of Florida.
Study applies human research to canine encephalitis

NC State researchers investigate whether antibodies play a role in autoimmune disease.

Results of a new study from North Carolina State University reveal that dogs suffer from the same type of autoimmune encephalitis as humans, according to a release from the College of Veterinary Medicine. The study’s findings, published in the September issue of the Journal of Veterinary Internal Medicine, may lead to improved screening methods for diagnosis and possibly more effective treatments for canine encephalitis.

“Being able to show that dogs suffer from a specific autoimmune encephalitis is really a paradigm shift,” says Natasha Olby, MB, PhD, MRCVS, DACVIM, one of the study authors and professor of veterinary neurology at North Carolina State. “While treatment options will remain the same, we can now look for more antibody targets and perhaps be able to change the diagnosis from ‘unknown etiology’ to a diagnosis by neuronal cell surface target.”

Autoimmune encephalitis is challenging to treat in dogs. In fact, veterinary neurologists have been unable to differentiate between non-infectious cases, referring to these cases as “meningoencephalitis of unknown etiology.”

“If we rule out infection (which accounts for only a small portion of cases), we are left with a diagnosis of meningoencephalitis of unknown etiology ...” Dr. Olby says, “and we treat these dogs with immunosuppression.”

In human medicine, researchers have discovered antibodies to surface proteins on neurons found in people with encephalitis. “In reality, there are likely to be many different forms of autoimmune encephalitis in which the immune system is reacting to different targets within the brain,” Dr. Olby says.

Dr. Olby and her team used a test that screens for antibodies against six different neuronal surface targets involved with autoimmune encephalitis in humans to test the cerebrospinal fluid from dogs with encephalitis. Human and canine genes for these targets are practically identical, the release indicates.

Nineteen of the 32 dogs screened were diagnosed with inflammatory disease, of which three were positive for antibodies to the NMDA receptor target. All three dogs responded well to immunosuppressive therapy, the researchers say.

“Being able to categorize the disease more accurately may give both dogs and humans more options for treatments in the future,” says Dr. Olby.
In defense of the incisional biopsy

Knowledge of tumor type leads to the smartest therapeutic options and most accurate prognosis. The challenge is to communicate value to clients. By Michael O. Childress, DVM, MS, DACVIM (oncology)

After 15 years in practice, it is my distinct impression that convincing a pet owner to perform an incisional biopsy of a tumor is about the toughest sell in all of veterinary medicine. (OK, OK, maybe the notion of “strict cage rest” for orthopedic injuries is tougher, but still.) After all, it’s difficult enough to convince owners to pay for histopathology at all after a tumor has been removed. Why on earth would they consider paying for it twice?

I think this point of view is a shame, because there are a number of medically sound reasons for performing an incisional biopsy. All of these have been reviewed in textbooks or the veterinary literature and are likely well known to most practicing veterinarians. Stuffy recommendations from medical textbooks, however, are unlikely to resonate with pet owners, so here I will speak plainly to the most important reason for performing an incisional biopsy.

Namely, the incisional biopsy serves to manage the pet owner’s expectation of the benefit that can be derived from attempts at definitive treatment for a cancer.

What cutting can (and can’t) do

Managing client expectations is of critical importance when treating pets with cancer. This is because owners rarely understand what cancer treatments can and cannot do. I find this to be especially true where surgery is concerned. I have (unintentionally) brought many a pet owner to tears while describing what curative-intent cancer surgery actually entails. Their hopes of a quick, tidy snip-stitch-stitch procedure to fix their pet’s tumor quickly vanish when the discussion turns to the inconvenient details of fascial planes and surgical margins.

I do not say this callously—it brings me no more joy to make someone cry than it does any other conscientious practitioner. But I do take satisfaction from these moments in knowing that I have helped someone see the truth about their pet’s cancer. And the truth is this: Attempting to surgically remove a tumor is sometimes a very bad idea.

The reason for this, of course, is that serious complications can arise from unconsidered attempts at surgical tumor removal. Hemorrhage, infection, dehiscence, and always, inexorably, the scourge of cancer recurrence should be at the forefront of the surgeon’s mind when planning the resection of a tumor. Developing strategies to minimize the risk of these complications requires foreknowledge of the tumor’s clinical biology—information often afforded by a well-procured incisional biopsy. This information notably includes tumor type and histopathologic grade, which are intimately associated with the treatment of choice as well as prognosis for most tumors.

Knowledge of tumor type, for example, may affect treatment decisions for cutaneous and subcutaneous round cell tumors, such as mast cell tumors, plasma cell tumors and histiocytic sarcomas. These tumors are often managed surgically but also respond well to chemotherapy or radiation therapy. Opting for these treatments over surgery may be wise if the surgeon believes the likelihood of complete excision is low or surgical complications high. Knowledge of tumor grade also may affect the decision to pursue surgery, as the likelihood of local recurrence for high-grade mast cell tumors (36%)1 and soft-tissue sarcomas (up to 75%)2 is significantly greater than that for their lower-grade counterparts (likely ≤10% for mast cell tumors1,3 and approximately 10%–30% for soft tissue sarcomas4–10).
Low-grade tumors are thus often excellent candidates for surgical resection, whereas the choice for surgery must be made more carefully with high-grade tumors. This is doubly true because not only does tumor grade affect the likelihood of local recurrence, but it is also a powerful determinant of a patient’s overall survival time, as high-grade tumors are significantly more likely than low-grade tumors to metastasize.

Forewarned is forearmed

Forewarned with this knowledge about the likely benefit (or harm) to be derived from surgical tumor removal, pet owners can make informed decisions about what course of treatment they wish to pursue. Knowledge of the potential complications associated with surgical removal may prompt owners to choose lower-risk options, such as palliative radiation therapy or chemotherapy. Knowledge of the prognosis for survival may prompt owners to forego definitive therapy altogether, opting instead for a hospice-style approach to their pet’s care.

It may be tempting to view this pivot from a potentially curative approach to a purely palliative one as failure to deliver good patient care. It’s not. Providing owners with the truth—however grim—about their pet’s cancer using minimally invasive techniques, as opposed to stoking false hopes while potentially doing significant harm, is the essence of compassionate, thoughtful cancer medicine.

Veterinarians must bring this thoughtfulness to bear when recommending an incisional biopsy to a client and performing one on a patient. The procedure is, of course, not indicated for many tumors (see Figures 1 and 2).

In tumors for which it is indicated (see Figures 3 and 4), the clinician must be cautious to avoid the two major complications of incisional biopsy: (1) obtaining of a nondiagnostic sample, and (2) seeding of cancer cells along the biopsy tract.

To avoid the first of these, it is essential that the biopsy be of sufficient size and quality to allow the pathologist to render a useful interpretation. As such, the biopsy should be as large as is reasonable (the incision does have to be closed, after all) and consist of tissue that is not grossly hemorrhagic or necrotic. To avoid the second, the biopsy should be obtained in such a way that the entire biopsy tract can be excised if definitive surgery is pursued afterwards.

Figure 1: (Left) Squamous cell carcinoma of the rostral mandible in a dog. Veterinarians are often requested to surgically remove tumors such as this one for cosmetic reasons. However, pet owners must understand that local recurrence inevitably follows resection of such tumors without including a wide margin of surrounding bone. The broad-based appearance and imperceptible borders of this mass make it a poor candidate for excisional biopsy. Rather, imaging studies (either radiography or computed tomography to assess bony involvement) and incisonal biopsy are indicated. This tumor was cured by partial rostral mandibulectomy.

Figure 3: (Left) High-grade soft tissue sarcoma in the dorsal interscapular region of a dog. The anatomic site of the tumor makes it potentially amenable to wide excision. However, the tumor is large and fixed to underlying tissues. The red discoloration and ulcerated surface suggest, respectively, induction of a localized inflammatory response and the presence of regions of hypoxia or necrosis within the tumor. Both of these characteristics are associated with aggressive malignancies. Unplanned excisional biopsy of a tumor with this appearance is likely to result in tumor recurrence or other surgical complications. In this case, the diagnosis was achieved by incisional biopsy, and the owner opted to treat the dog with palliative chemotherapy.

Figure 4: (Left) High-grade soft tissue sarcoma in the dorsal interscapular region of a dog. The anatomic site of the tumor makes it potentially amenable to wide excision. However, the tumor is large and fixed to underlying tissues. The red discoloration and ulcerated surface suggest, respectively, induction of a localized inflammatory response and the presence of regions of hypoxia or necrosis within the tumor. Both of these characteristics are associated with aggressive malignancies. Unplanned excisional biopsy of a tumor with this appearance is likely to result in tumor recurrence or other surgical complications. In this case, the diagnosis was achieved by incisional biopsy, and the owner opted to treat the dog with palliative chemotherapy.


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Dr. Michael Childress is associate professor of comparative oncology at the Purdue College of Veterinary Medicine.
Complicated diabetes cases:
Foiling the frustrations

Diagnosing diabetes in your veterinary patients may be straightforward, but treating the condition is sometimes anything but. Here’s the lowdown on why treatments fail, how best to monitor patients and new insulin products on the market. By Maureen McKinney

“Why is my pet’s insulin dose so high?”

“Should I switch insulins?”

These are the questions that Daniel K. Langlois, DVM, DACVIM, assistant professor of internal medicine at Michigan State University College of Veterinary Medicine, is asked most commonly by pet owners who are frustrated by unremitting clinical signs in their diabetic pets despite the administration of high amounts of insulin.

For the most part, Dr. Langlois told Fetch dvm360 conference attendees recently, recognition and diagnosis of diabetes mellitus in pets is relatively straightforward—telltale signs include polyuria/polydipsia, polyphagia, weight loss, fasting hyperglycemia and sugar in the urine. Initial treatment recommendations are similarly uncomplicated. But that’s where the easy path often ends for many diabetic pets, their owners and their veterinarians.

“Many dogs and cats have poor glycemic control despite being on relatively high doses of insulin, and treatment and monitoring of these patients can be challenging,” Dr. Langlois said. Here are some guidelines on how he manages the more frustrating cases of diabetes—and how you can achieve similar success.
Why does treatment fail?

In many cases, a stepwise approach to treatment can help you avoid the need for referrals and consults. Dr. Langlois said, “But before we go on a big diagnostic hunt, let’s make sure there are no insulin handling or administration issues at play,” he said—these account for about 5% to 10% of so-called treatment failures. Rolling instead of shaking the insulin bottle, administering insulin incorrectly (e.g., through the skin) and keeping insulin for too long are among the most common culprits.

“Handling and administration faux pas aren’t the most common reasons for poor glycemic control,” Dr. Langlois said, “but if these issues are not identified on the front end, you won’t be able to help the client and patient no matter what you do.”

When these issues are not at play, he continues, odds are the problem is insulin resistance. Other potential problems include an inadequate duration of action of insulin, inappropriate insulin dosing and an inconsistent routine.

**Insulin resistance.** Insulin resistance should be suspected when individual insulin doses exceed about 1.5 U/kg in dogs and 0.5 U/kg in cats. “When animals are not responding to these doses, we usually start thinking about insulin resistance,” Dr. Langlois said. This typically means an abundance of counter-regulatory hormones (e.g., cortisol, sex hormones, growth hormone, glucagon, epinephrine, norepinephrine) that are interfering with insulin release, binding or metabolism. Inflammation and concurrent disease processes commonly result in insulin antagonism, and one of the first steps in assessing the poorly controlled diabetic is to perform abdominal ultrasound and thoracic radiographs to aid in the identification of concurrent disease processes.

This doesn’t necessarily mean the pet has Cushing’s or acromegaly. Dr. Langlois noted. Many diseases that cause inflammation and stress result in increased secretion of all these hormones, so almost any concurrent disease in an animal has the potential to result in insulin resistance. “If it’s not an insulin handling or administration issue, we usually go straight to obesity and diet,” he said. We know that fat does a lot of good things, but excess or hypertrophied fat releases a variety of cytokines and chemokines that all promote a pro-inflammatory state, which leads to insulin resistance.

Fat cats are about four times as likely to develop diabetes as lean cats.

**Monitoring musts**

Enhanced monitoring is often required to identify the underlying reasons for poor diabetic control. One of the newest tools gaining traction in veterinary medicine is continuous interstitial glucose monitoring using the FreeStyle Libre systems. These systems rely on a small sensor that continuously measures subcutaneous interstitial (not blood) glucose concentrations. Measurements are obtained by a small transmitter/scanning device every minute the device is in place. These measurements can be obtained in real time and, equally as valuable, 10 to 14 days’ worth of data can be uploaded, thus allowing detailed retrospective reports and analyses. Studies suggest that this method has good correlation with reference laboratory measurements of blood glucose, and it is likely more accurate than portable blood glucose monitors.

The FreeStyle Libre can be used in several ways, Dr. Langlois said, noting that his method is to place the device on the dorsum immediately caudal to the shoulder blades (he recommended a video in which Patty Lathan, DVM, DACVIM, demonstrates its use: youtube.com/watch?v=ytkcjpxdtKv). “Our initial experience with these devices has been quite encouraging,” he says, noting that most dogs are able to maintain the device for more than 10 days. His team has started using this system to manage pets with diabetic ketoacidosis to avoid the need for repeated venous sampling. “Overall, we have found the data obtained from these systems to greatly improve our management of the poorly controlled diabetic dog,” he said.
Weight loss: the slow and steady approach

Weight loss in diabetic cats is important, Dr. Langlois said, and there are many ways to approach it. Targeting a loss of about 1% of body weight every one to two weeks is appropriate for both dogs and cats. “Addressing the issue incrementally helps to avoid pet behavior issues and owner frustration,” he said.

“We also make sure we’re feeding an appropriate diet,” he said. “Cats are obligate carnivores and don’t process simple sugars very well, so we try to restrict them from a carbohydrate standpoint.”

Importantly, Dr. Langlois said, he never recommends changes in insulin type based off just one or two blood glucose curves. His experience, as well as that of others, suggests that there is substantial day-to-day variability in blood glucose curves in some pets. So it’s best to assess multiple data points with consistently documented inadequate duration of action before recommending a switch to a different type of insulin.

“In dogs receiving NPH insulin, we typically switch to Vetsulin, and in dogs receiving Vetsulin, we recommend a switch to ProZinc if financially feasible for the owners,” Dr. Langlois said. “In cats, we will typically recommend switching from glargine to ProZinc or vice versa. If this is not successful, we are now considering the use of a new, more concentrated formulation of glargine.” (See ‘Newer insulin options.’)

Inappropriate insulin dosing.

A relatively simple problem with diabetes treatment issues is when the pet needs more insulin. “Many of the poorly controlled diabetics evaluated at our hospital will be discharged on a higher dose of insulin than what they were previously receiving,” Dr. Langlois said. In some cases, the reliance on spot blood glucose testing or urine dipstick monitoring alone leads to inappropriately low doses. In other cases, the animals may indeed have insulin resistance, but it’s not always a fixable problem (i.e. a dog or cat receiving glucocorticoids for management of a life-threatening condition or a cat with concurrent acromegaly). In these cases, he said, more insulin—even at what are typically thought of as high doses—is needed and appropriate for adequate clinical control.

Inconsistent routine.

Consistency is key in managing diabetes. Day-to-day changes in the diet and treats provided and the pet’s activity level will alter daily insulin requirements. “Given that we attempt to maintain dogs and cats on a steady daily insulin dose, these types of changes will decrease glycemic control,” Dr. Langlois said. Lifestyle and quality of life issues may preclude absolute day-to-day consistency, but a major point of emphasis with pet owners is maintaining a relatively consistent schedule for their pets. The timing of feeding, type of food and amount fed should be as consistent as possible. The same holds true for snacks and exercise.

Newer insulin options

Insulins available for use in veterinary medicine are frequently changing. Dr. Langlois treats the majority of diabetic dogs in his practice with either NPH (neutral protamine Hagedorn) or Vetsulin (porcine insulin zinc suspension, Merck Animal Health); most diabetic cats are treated with Lantus (insulin glargine; Sanofi-Aventis) or ProZinc (protamine zinc; Boehringer Ingelheim). A change in insulin type is not necessary for most animals, he said, but there are certain cases in which a different insulin could be more effective. Two newer options include ProZinc for dogs and Toujeo (glargine U-300; Sanofi-Aventis) for cats.

ProZinc has recently been licensed for use in dogs after the completion of a large field trial of over 250 diabetic dogs. ProZinc can be used as a once-daily insulin in some dogs. Results of a pharmacokinetic/pharmacodynamic study suggest a duration of action approaching 24 hours in many dogs.1 The starting label dose of ProZinc is 0.5 to 1.0 U/kg when given once daily in dogs. As a 300-U/ml suspension, Toujeo is a super-concentrated form of glargine that generates a greater tissue reaction that results in even slower absorption. “Because of that tissue reaction, some of the glargine being given is going to be degraded before reaching the systemic circulation,” Dr. Langlois said. He also noted that Toujeo’s duration of action and time to peak activity are longer than with detemir, so this also leads to having to give a larger amount—but you should have a smoother glucose curve. As such, Toujeo may be helpful for difficult to control cats in which you’re struggling to get optimal control.

“Several clinical trials of Toujeo are currently in process at other institutions, and we have received anecdotal reports suggesting that several refractory diabetic cats have been successfully managed with this insulin,” he said.

In closing, Dr. Langlois noted that changing insulin types is not the solution for most refractory cases, but it is in some. “When we’re making decisions it’s critical to recognize the day-to-day variability we see,” he said. “You also must be aware of the variability between patients. Different animals will respond to different insulins quite differently.”

Reference


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Halitosis, malpositioned teeth, oral tumors, fractured teeth, oral ulcers, swellings under the eyes—what to do? For many veterinarians, treatment is the most challenging aspect of dentistry due to the needs for client consent, specialized equipment, time and training.

It’s often simpler to overlook dental pathology—but that’s not right for the patient, client or practice. We became veterinarians to relieve suffering, and providing dental therapy followed by prevention ensures the best care for our patients. In addition, seeing our patients’ lives improve and sharing the bliss of their owners’ appreciation contributes to the joy of veterinary dentistry.

A straightforward approach to dental treatment is well within the scope of general veterinary practice. Most dental therapy strategies fall into one of four buckets, or the four R’s: recheck, remove, repair or refer. Let’s look at each of these in turn.

**Recheck the patient**
It can be hard to do nothing when you discover an abnormality, but sometimes it’s in the patient’s best interest. The decision to follow up and recheck an oral health problem rather than actively treat it should be based on whether the abnormality is nonfunctional (actively treat) versus functional (recheck), progressive (actively treat) versus nonprogressive (recheck), and painful (actively treat) versus nonpainful (recheck).

**Remove teeth or oral masses**
Fortunately, domesticated dogs and cats do not need teeth to survive. What they need is a healthy, pain-free mouth. In addition to dental scaling and polishing, extractions are the primary treatments we provide to dental patients. Often by the time we see dogs and cats with advanced dental disease, the teeth should not be saved; removing them usually resolves the problem effectively.

Oral masses, including gingival enlargement, can also be treated through complete or partial removal. Benign masses generally will not recur after at least 1-cm clean surgical margins in all directions have been achieved. With malignant masses, 2-cm margins are recommended.

**Repair the lesion**
Some oral lesions can be repaired versus addressed via tooth removal. Examples include sealants used to treat enamel hypoplasia.
light-cured acrylic resin to repair enamel defects, and CO2 laser treatment of oral ulcers.

**Refer to a veterinary dentist**

Patients requiring advanced dental procedures can be referred to a dental specialist (visit the American Veterinary Dental College website at avdc.org to find one). The veterinarians listed are comfortable handling complex dental procedures and anesthesia concerns. Before you make the referral, it’s best to call a dental specialist personally to explain what the patient is being referred for, whether preanesthetic laboratory results and radiographs will be accompanying the patient, if it’s OK for the specialist to evaluate (and treat) the entire oral cavity in addition to the specific referred issue, and whether you prefer to handle the follow-up rechecks or wish the specialist to do them both in the short and long term. This phone call also makes the client feel more comfortable about the process. Be specific. For example:

- You want the specialist to treat the immediate problem and not address any other dental issues. You want to see the patient back as soon as possible. Or …
- You want the specialist to treat all dental issues found and follow up until they are completely resolved. You expect to see your patient back to continue all future routine dental care. Or …
- You want the specialist to take care of all current and future dental issues. You do not have the necessary equipment or are not comfortable performing dental procedures.

**The four R’s in the trenches of daily practice**

Here’s how the four R’s might play out with some of the common oral health scenarios veterinarians face in general practice.

**Periodontal diseases.** Periodontal diseases are the most common maladies affecting dogs and cats. They are more common than gastrointestinal, dermatologic and orthopedic diseases combined. The treatment decision can be funneled down to one concept—if a tooth does not have at least 50% solid bone and/or gingival support as evidenced by mobility, probing, intraoral radiographs or some combination of the above, it’s best to remove it (Figure 1). Teeth with greater than 50% support and periodontal pockets can be repaired with root planing plus or minus locally applied antimicrobials (Figure 2) and stringent home care. If gingival recession is the cause of the support loss, locally applied antimicrobials are not indicated. These treatments should be followed with recommendations for daily preventive care such as toothbrushing, wiping and use of products accepted by the Veterinary Oral Health Council (VOHC). If the client cannot commit to daily home care, removal of teeth with less than 50% support loss may be necessary.
HELPING DIABETIC PETS LEAD A CHARMED LIFE JUST GOT EASIER

SUPPORTING PET OWNERS TO CONFIDENTLY PERFORM AT-HOME GLUCOSE MONITORING IS THE FIRST STEP

At the core of properly managing dog and cat diabetes is regular, at-home glucose monitoring by the pet owner. With the educational and training materials of T.E.A.M. AlphaTRAK from Zoetis (visit www.alphatrak.com), you and your staff will have the tools you need to easily give any pet owner the guidance and encouragement to confidently perform at-home glucose monitoring.

Equipped with the AlphaTRAK 2 meter, the most trusted and widely used pet glucose meter on the market, and with team support from you and your staff, you can help pet owners ensure their pets lead a more charmed life—even with diabetes.1,2

For more information, resources and support on how to help diabetic pets lead their best life, visit www.alphatrak.com.

1. ZMR: Trend Analysis of AlphaTRAK Unit Sales, 2012-2014

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Tooth resorption. External tooth resorption is a common finding in our veterinary patients thanks to detection on intraoral radiographs performed during professional oral assessment, treatment and prevention (oral ATP) visits. When the resorption visibly or radiographically extends into the oral cavity, the treatment decision is easy: tooth removal (Figure 3). Tooth resorption isolated below the gingiva is not considered to be painful and can be followed through rechecks (Figure 4) or proactively extracted.

Internal root resorptions are treated either with extraction or root canal therapy. Those rare cases with root replacement resorption (type 2) as evidenced by decreased root opacity can be treated with crown reduction followed by gingival closure (Figure 5).

Orthodontic diseases. Occlusion is the contact between the masticating surfaces of the maxillary and mandibular teeth. Normal occlusion in dogs and cats occurs when the mandibular teeth reside just lingual to the maxillary teeth and the mandibular incisor cusp tips rest on the cingulum on the palatal side of the maxillary incisors. In addition, the mandibular canine crowns should lie equidistantly between the maxillary third incisor and maxillary canine. The mandibular premolar crown tips should point to the interproximal spaces between the crowns of the maxillary premolars. Each mandibular premolar should be positioned rostral to the corresponding maxillary premolar. Dogs and cats with normal occlusion generally do not have bite-related problems.

Abnormal occlusion is any presentation other than that described above. This concept creates controversy with some breeds in which mandibular mesioclusion (underbite) is considered normal (for the breed) but is often not a healthy bite. Mandibular distoclusion (overbite) is never considered normal. Dogs and cats with abnormal occlusions (even if normal for their breed) need to be closely watched for tooth-to-tooth and tooth-to-gingiva dental trauma (Figure 6). In cases where abnormal occlusion causes oral trauma, the offending tooth or teeth need to be removed (Figure 7) or moved (Figure 8).

In some cases of nonfunctional orthodontic disease, instead of removing the entire offending tooth, part of the crown is removed (crown reduction) then restored, which eliminates the local trauma and saves the tooth.

Endodontic diseases. Fractured teeth abound in our canine and feline patients, with the canines and carnassial teeth most commonly affected. When an affected tooth lacks periodontal support,
removal is indicated. If an affected tooth has good periodontal support, treatment with either vital pulp or root canal therapy is indicated. Generally, referral to a veterinary dental specialist is necessary in these cases.

Endodontic care is largely dictated by the clinical and radiographic extent of disease at presentation, the age of the patient, and the age of the fracture. Here are some guidelines:

> Uncomplicated fractures in young animals: Restore the tooth with light-cured composite or a metallic crown.
> Uncomplicated fractures in older animals: Often no treatment is indicated if the animal is not prone to injure the tooth further.
> Uncomplicated crown-root fractures: Above steps plus care to remove the periodontal pocket; gingivectomy.
> Complicated fractures in young animals: Acute—extract or perform vital pulp therapy; chronic—extract if root canal therapy cannot be performed with a good prognosis.

> Complicated fractures in mature animals: Acute—extract or perform vital pulp therapy or root canal therapy; chronic—extract or perform root canal therapy (preferred).

**Treatment workflow**

Now that you know what to do, how can you fit it into the day? Much depends on how many tables and staff you have available. One approach is to perform cleaning, polishing, intraoral radiographs, probing and charting like human dentists and have the patient come back for needed treatment. The benefits of this approach include effective scheduling, discussion with the owner without pressure and decreased initial anesthesia time. Disadvantages include failure of client compliance, resulting in patient suffering due to undelivered treatment. At my practice, we do it in one setting with a client call to explain what needs to be done once our diagnostics are reviewed.

The foundation of companion animal dental care is the tooth-by-tooth examination. Once dental abnormalities are discovered, think about the four R’s—recheck, remove, repair and refer. Your patients (and their owners) will thank you.

Dr. Jan Bellows owns All Pets Dental in Weston, Florida. He is a diplomate of the American Veterinary Dental College and the American Board of Veterinary Practitioners.
Gastric dilatation-volvulus: It doesn’t have to make your stomach turn

Whether you perform surgery yourself or refer your patient to a specialist, aggressive stabilization can make all the difference. By Bronwyn Fullagar, BVSc, MS, DACVS-SA

Just before closing time, a large-breed dog arrives at your clinic with a history of nonproductive retching, lethargy and a progressively distending abdomen. You know gastric dilatation-volvulus (GDV) is likely, but where do you begin? Should you refer the patient straightaway? Will you need to perform surgery yourself?

If this scenario makes your palms sweat and your adrenals squeeze, fear not. GDV is a true medical and surgical emergency, but with a logical diagnostic and treatment approach and a focus on thorough preoperative stabilization, a good outcome can be achieved in the majority of cases. Even if you intend to refer the case to a specialist or emergency clinic, the early stabilization procedures you perform can make a big difference to your patient’s success, and your clients will appreciate your help as they grapple with a stressful situation.

Triage: What is the patient’s status?

Patients that present with a history suggestive of GDV should be brought immediately to the treatment area and assessed by a veterinarian. In the meantime, owners should be asked to sign a consent form authorizing initial stabilization procedures and diagnostics. Remember that although middle-aged, large- and giant-breed, deep-chested dogs are the poster children of GDV, dogs of any breed between 10 months and 14 years of age—and even cats—may be affected.

Patients with GDV are often hyper-salivating with a painful abdomen, and a tympanic quality can be auscultated on abdominal percussion. Patients may present in critical condition with an unstable cardiovascular status. Heart rate, respiratory rate, temperature, blood pressure and pulse quality should be evaluated immediately.

**Stabilization: Improve perfusion and tissue oxygenation**

The first priority in treating patients with suspected GDV is to stabilize their cardiovascular status. The sooner you treat shock and restore oxygen delivery to the tissues, the less likely it is that the patient will require resection of necrotic gastric wall and the better the overall prognosis. Although it can be tempting to perform radiographs immediately, this step should be postponed until after initial resuscitation.

Use initial physical exam findings to guide your stabilization efforts and be aware that patients may present in varying degrees of shock. Those presented earlier in the disease process will have signs consistent with hypovolemic shock due to their blood volume being restricted by the enlarged stomach compressing the caudal vena cava. These dogs will be tachycardic and tachypneic, with normal femoral pulses, pale mucous membranes and a slow capillary refill time.

As the syndrome progresses, dogs will develop injected mucous membranes and weak femoral pulses—signs of endotoxic shock. Eventually, patients will decompensate to a point where they are hypotensive and bradycardic with white mucous membranes; at this stage they often present laterally recumbent.

Fluid resuscitation is the most important component of GDV patient stabilization. Place two venous catheters in the cranial half of the body (cephalic or jugular veins can be used). Select the largest size catheters possible to allow rapid delivery of fluids. Provide crystalloid fluid therapy (e.g. lactated Ringer’s solution, Plasmalyte or 0.9% sodium chloride) initially at a dose of 40 to 90 ml/kg over the first 30 to 60 minutes. As a rule of thumb, a large-breed (30-kg) dog will require 1.5 to 3 L crystalloids, while a giant-breed (60-kg) dog will require 2.5 to 5.5 L. Alternatively, you can use colloid fluids (e.g. hydroxyethyl starch) at a dose of 10 to 20 ml/kg combined with crystalloids at 10 to 40 ml/kg. Titrate fluids to effect until you note improvements in heart rate, respiratory rate, mucous membrane color and refill, and blood pressure.

Patients with GDV can be painful, so administration of opioid analgesia is helpful. Pure mu agonists (fentanyl, methadone, hydromorphone) are preferred over agonist-antagonists (buprenorphine) or partial agonists (butorphanol), as these can interfere with the effects of pure mu agonists administered perioperatively. Nonsteroidal anti-inflammatory drugs (NSAIDs) are always contraindicated in cases of GDV.

Gastric decompression is an important part of stabilization as it relieves pressure on the caudal vena cava, thus allowing blood to
flow from the caudal half of the body back to
the heart (improved preload). It also helps to
improve gastric perfusion and patient comfort. Decompression can be performed either
via orogastric intubation or trocharization. Although orogastric intubation is more effec-
tive in decompressing the stomach, it can be
challenging in awake patients and is generally
reserved for those that are sedated or recum-
bent. Take care to protect the airway; intubation
may be required to avoid aspiration pneumonia. Premedicate a large-bore, smooth tube to the
last rib and lubricate it. Note that often the tube
cannot be passed past the lower esophageal
sphincter due to the torsion, and care must be
taken not to force the tube as esophageal perfo-
ration is possible.

If orogastric intubation is not possible or
not safe, you can perform trocharization over
the region of greatest gastric tympany, usually
over the right lateral abdomen caudal to the
last rib. Clip and aseptically prepare the skin,
insert a 14- to 18-ga over-the-needle cath-
er, and remove the stylette. You may need to
repeat trocharization if surgery is delayed as the
stomach will continue to fill with gas.

An electrocardiogram should be performed on
GDV patients prior to surgery. Up to 70% of dogs
with GDV develop cardiac arrhythmias,1 which
are frequently ventricular in origin. Arrhythmias
may occur up to 72 hours postoperatively. Patients with ventricular tachycardia, R on T
complexes, multif orm ventricular premature
complexes, or clinical hypotension related to
their arrhythmia should be treated with lidocaine
and albumin levels. Coagulation testing (PT and aPTT) can help
to identify patients that are coagulopathic or
trending toward disseminated intravascular
coeagulation (DIC) preoperatively.

Diagnostics: GDV, GD
or something else?
A right lateral abdominal radiographic is the view
of choice to diagnose GDV and is important
to differentiate dogs with gastric dilatation from
those with true dilatation and volvulus. In the
latter, a soft tissue band will be present between
the distended pylorus and the fundus—the
so-called “double bubble” or “Popeye arm.” Dogs
with gastric dilatation without volvulus will have
a distended stomach without the soft tissue fold
between the two regions.

The radiograph should also be evaluated for
free peritoneal gas, which may indicate gastric
dilatation from which true dilatation and volvulus. In the
latter, a soft tissue band will be present between
the distended pylorus and the fundus—the
so-called “double bubble” or “Popeye arm.” Dogs
with gastric dilatation without volvulus will have
a distended stomach without the soft tissue fold
between the two regions.

Initial bloodwork should include packed cell
volume and total solids, blood glucose and
venous blood gas with electrolytes if available. In patients that will undergo surgery, complete
blood count and serum biochemistry are
indicated to assess platelet number, leukogram,
liver and kidney function, and albumin levels.

Surgery: Derotate,
assess viability, pexy
Once you’ve made the decision to pursue
surgery, the next consideration is whether to
refer the case to a specialty or 24-hour facility
or perform surgery at your own clinic. There
are a number of factors that affect this deci-
sion, but referral is strongly recommended in
all cases where gastric necrosis is suspected.
Gastrectomy greatly increases the technical
difficulty of the surgery, surgical stapling
equipment available in specialty practices...
improves the efficiency and safety of the procedure, and postoperative care is significantly more intensive in patients that have undergone gastrectomy. Of course it’s not possible to know for sure preoperatively that a gastrectomy will be required, but using the prognostic indicators above can give a reasonable idea of which cases will be more complicated.

Anesthesia for GDV patients should prioritize maintaining blood pressure and tissue oxygenation and avoiding arrhythmogenic agents. Therefore, alpha-2 agonists (dexmedetomidine, medetomidine), acepromazine and ketamine should be avoided. If possible, patients should remain in lateral recumbency for as long as possible during preparation for surgery to avoid additional pressure on the caudal vena cava, and preoxygenation is beneficial. A common protocol is premedication with a benzodiazepine (e.g. midazolam or diazepam) and an opioid (e.g. hydromorphone or fentanyl), induction with propofol or alfaxalone, rapid intubation and endotracheal tube cuff inflation, and maintenance with isoflurane and oxygen. A fentanyl CRI of 5 to 10 μg/kg/h can be helpful to reduce the minimum alveolar concentration of isoflurane required. A lidocaine CRI can be administered concurrently with fentanyl—this has the dual effect of treating cardiac arrhythmias and providing analgesia.

Perioperative antibiotics are indicated in all cases of GDV, and a first-generation cephalosporin (e.g. cefazolin) or ampicillin-sulbactam is appropriate. Administer the first dose at anesthetic induction and then every 90 minutes intraoperatively. Be sure to clip a wide area—the caudal half of the thorax and the entire abdomen to the pubis should be prepared aseptically. The surgeon stands to the patient’s right side. Perform a ventral midline celiotomy from the xyphoid to the fourth mammary glands or prepuce. Be prepared to encounter a hemobdomen, as avulsion of the short gastric arteries from the greater curvature of the stomach occurs. In most cases, hemorrhage is self-limiting or can be addressed after gastric derotation. In patients with GDV, the greater omentum will be draped over the stomach upon entering the abdomen. Occasionally the stomach has dero-tated itself, in which case you will encounter the ventral surface of the stomach and spleen first, without omentum covering them.

In most cases, the stomach has rotated 180 to 270 degrees. To dero-tate the stomach, it may be necessary to first decompress it, which can be performed either by having an assis-tant pass an orogastric tube or by trocharizing the stomach with a needle intraoperatively. Then use your right hand to reach the pylorus, which is usually located dorsal to the esophagus on the patient’s left side. With your left hand, form a fist and push the distended fundus (malpositioned on the dog’s right side) dorsally while you pull the pylorus ventrally and to the right. The spleen will usually derotate with the stomach.

After derotation, perform complete exploration of the abdomen. Residual hemorrhage from the short gastric arteries may need to be controlled with ligatures. Palpate the stomach carefully for a gastric foreign body—gastrotomy is required in this case. Assess the color of the spleen—splenic engorgement is expected and the spleen should return to a dark purple color following derotation. If the spleen is black in color or thrombosis of the splenic artery has occurred (or both), a splenectomy is indicated.

Next, assess the gastric wall. This is a subjective assessment; accuracy improves with surgeon experience. When gastric wall color, thickness, peristalsis and bleeding on incision are evaluated in combination, accu-racy of assessment is about 85%. The most common region affected by ischemic injury is the fundus along the greater curvature. Be sure to evaluate the stomach all the way to the lower esophageal sphincter. If the gastric wall remains black without improvement following reperfusion, if the serosal surface is pale greenish or grey, if there is absence of the normal mucosal “slip” or the wall is very thin, or if the serosal surface does not bleed when a partial-thickness incision is made, partial gastrectomy is required. Gastrectomy can be performed by a cut-and-sew technique with an inverting suture pattern, the use of surgical stapling equipment, or invagination of the isch-emic gastric wall. The procedure is well described elsewhere.
If you have performed a gastrectomy, lavage the abdomen with warm sterile saline and suction it, then exchange gloves and instruments for a sterile set. The next step is gastroscopy. Incisional gastroscopy is technically simple and highly effective, with reported rates of GDV recurrence almost 0%.14 Gastroscopy takes place between the pylorus and the patient’s right abdominal wall, so it’s easiest if the surgeon moves to stand on the patient’s left side. The pxy site on the stomach is located 2 to 3 cm oral to the pylorus, on the ventral surface, between the greater and lesser curvatures. The pxy site on the body wall is located in the right transverse abdominis, caudal to the last rib, parallel to the skin incision and approximately one-third of the distance from ventral to dorsal. In some larger dogs it may be necessary to place the pxy slightly more cranial, over the last ribs, but take care not to pass the insertion of the diaphragm on rib 11 to avoid an inadvertent thoracotomy! It is helpful to have an assistant stand on the patient’s right side, grasp the right abdominal wall along the linea alba with towel clamps and elevate it toward the ceiling for better visualization. Here’s a description of one way to perform the procedure:

1. Place two partial-thickness (seromuscular layer only) stay sutures of 2-0 polydioxanone (PDS) 4 to 5 cm apart at either end of the proposed pxy site on the stomach (leave about 3 cm between the pxy site and the pylorus). Knot the stay sutures to the stomach and leave the needles attached, with a long suture tag.
2. Make a partial-thickness (seromuscular) incision in the gastric wall between stay sutures using a new No. 15 scalpel blade. The submucosa can be visualized, but do not enter the gastric lumen.
3. Suture each 2-0 PDS stay suture to the right transverse abdominis at the site of proposed pxy. Leave the needles attached to the sutures.
4. Make a full-thickness incision in the transverse abdominis between the stay sutures.
5. Suture each seromuscular layer of gastric wall to the cut edge of the transverse abdominis, using a simple continuous appositional pattern (2-0 PDS). Suture the dorsal edge first.

Postoperative care: Continue support and resuscitation; monitor for complications
Patients will require 24-hour care postoperatively, so transfer to a referral facility may be necessary. Continue fluid resuscitation and address electrolyte imbalances. Continue analgesia with pure mu agonists until the patient is able to tolerate oral analgesia. NSAIDs are contraindicated. You can continue to provide a lidocaine CRI to provide analgesia as well as to treat cardiac arrhythmias. Continuous ECG is helpful to screen for ventricular arrhythmias, which may persist for 48 to 72 hours postoperatively. Discontinue antibiotics within 24 hours of surgery unless gastric necrosis was present.

Patients can be fed within 12 to 24 hours of surgery, either via nasogastric (NG) feeding tube or orally. Small meals of a bland or gastrointestinal diet are ideal. Prokinetic therapy (e.g. metoclopramide or cisapride) and intermittent suctioning of the NG tube may be necessary in cases of ileus, and an antiemetic (e.g. maropitant) is helpful to prevent vomiting secondary to ischemic gastritis. H2 antagonists (e.g famotidine) or proton pump inhibitors (e.g. omeprazole, pantoprazole) can be administered to treat gastric ulceration.

Major complications of surgery following GDV include peritonitis, sepsis and DIC. Peritonitis is most often due to ongoing gastric necrosis that was not adequately assessed initially and repeat surgery is required.

Prophylactic gastroscopy: Prevention is better than cure!
Did you know that Great Danes have a 42% chance of developing GDV in their lifetime?10 Other large and giant breeds have a lifetime risk of 4% to 37%.11 Prophylactic gastroscopy in predisposed dogs reduces their mortality rate by 29 times,1 and GDV incidence after incisional gastroscopy is nearly 0%.12 Gastroscopy can be performed at the time of spay or neuter and is recommended once dogs are close to adult size. Pexy can be performed either via a traditional “open” approach (as described above) or via laparoscopy or laparoscopic-assisted techniques. Minimally invasive approaches result in less postoperative pain and a faster return to normal activity than open approaches and are equally effective.13,14 Next time you meet a puppy of a predisposed breed or are performing abdominal surgery for another reason on a large- or giant-breed dog, consider recommending prophylactic gastroscopy—it may just save a life.

Approach your next case with confidence
GDV is a true medical and surgical emergency, but most patients can do well with aggressive early stabilization and prompt surgical care. Taking the time to stabilize your patient prior to surgery will greatly improve postoperative outcomes, whether you plan to perform surgery yourself or transfer the patient to a referral facility. Palpating as many normal stomachs as possible and performing gastroscopy in a prophylactic setting first will improve your technical expertise and confidence if and when you are required to perform surgery on a clinical GDV case.

Client education plays a major role in both the prevention of GDV through prophylactic gastroscopy and rapid identification of the condition, which allows for timely veterinary care. Treating patients with GDV can be challenging, so don’t hesitate to seek advice from your local emergency or specialist veterinary facility.

References
Predictive diagnostic RenalTech now available

Developed using artificial intelligence, this tool enables veterinarians to tailor healthcare plans for feline patients based on future health concerns.

Last month, Antech Diagnostics (part of Mars Petcare) announced the availability of RenalTech, a new diagnostic tool that allows for the prediction of chronic kidney disease (CKD) in cats up to two years before a clinical diagnosis could be made.

The company also announced the publication of data demonstrating the effectiveness of RenalTech, which was created using data from the electronic health records of more than 150,000 cats. CKD is a leading cause of death in cats over age 5, and affects 30% to 40% of all cats older than 10, according to the release.

RenalTech uses six health parameters—creatinine, blood urea nitrogen, white blood cell count, urine specific gravity, urine protein and urine pH, along with patient age—to offer definitive insight into whether a cat has or will develop CKD within the next two years.

“The ability to predict disease is a game changer for veterinarians,” says Antech’s chief technology officer, David Aucoin, DVM, DACVCP, in the release. “Now, veterinarians can act early, before disease strikes, allowing them to create a highly personalized care plan enabling pet owners to take the necessary steps to minimize the effects of chronic kidney disease. We believe this will dramatically improve a veterinarian’s ability to keep pets with their people for as long as possible, which is truly why we all come to work every day.”

Antech intends to develop additional diagnostics using machine learning. For more information about RenalTech and the future of predictive and preventive healthcare for pets, visit antechdiagnostics.com/renaltech and waltham.com/waltham-science/preventive-health.
Elanco: Animals are the ‘X factor’ at the center of world issues

Newly focused on animal health alone, Elanco management team shares hopes for more relevance in people’s lives and deepening commitment to make lasting change.  

By Brendan Howard

Jeff Simmons has a little bit of the joy and swagger that come from deep roots (he started in horse barns in Indiana and is still at home in the state), and he’s currently president and CEO of a newly independent animal health company. With the additions of Aratana Therapeutics and Bayer’s animal health unit, Elanco is raring to go and ready to make a difference, Simmons says.

In a September presentation celebrating Elanco’s first year as a dedicated animal health organization (the company is freshly separated from Eli Lilly & Co.), Simmons made the pitch that animals—both in agriculture and pets in people’s homes—are the “X factor” connecting many of society’s biggest problems, and he wants to “tell the story of farmers and veterinarians and why they matter so much.”

Simmons focused on five global issues touching on animals, starting with African swine fever, which is making it hard for the world’s farmers to produce animal protein at a time when demand is increasing. It’s a gap that the intriguing—but-too-new alternative proteins—showing up in Burger King’s plant-based Impossible Whoppers and KFC’s Beyond Fried Chicken—can’t fill—that’s issue No. 2. And what about the No. 3 issue, the environment?

Simmons touched on those same farmers’ efforts to change the way they raise animals, use land and manage waste to appeal to a new generation of environmentally conscious consumers. Pets’ positive effects on people’s own physical and mental health—issues 4 and 5—rounded out the list that Elanco is poised to focus on in the coming months and years.

The struggle, Simmons says—whether for veterinarians, farmers, animal health companies, media outlets or animal health associations—will be relevance and belief.

“That we—encompassing all of us—become relevant to these issues in societies today?” Simmons asked. “And being relevant isn’t enough; we need belief … deep belief. We can’t stand on the sidelines. Belief needs to be strong enough to take action.”

Simmons promised audience members that the newly independent Elanco will be sharing “practical, accountable and public” goals in the near future surrounding these big issues. He said Elanco is establishing a foundation that’s “sustainable, economical and efficient” to focus on these goals.

An audience member asked Simmons what being an independent company focused exclusively on animal health has meant in this first year.

“To come out of Lilly [and human pharmaceutical concerns] after 64 years, [we have] a dedicated focus on our customers, our industry and deploying our capital against our opportunities,” Simmons says. “[Before,] we did what we needed to do to generate profit and serve customers, but now Elanco is more focused, a faster company, and we don’t have the nonindustry things we need to be focused on.”

Everyone will need to stay tuned for the specific goals and the future foundation that could spring up from Elanco’s excitement about its new place in animal health.

Zoetis to vet students: We want to give you $2,000

Students invited to apply for scholarships courtesy of Zoetis and the AAVMC.

News | PRODUCTS
**MIDMARK**

**Updates to steam sterilizers**

Midmark has updated the Midmark M9 and M11 Steam Sterilizers, a line of tabletop sterilizers designed to be safe and dependable. The stainless-steel construction and American Society of Mechanical Engineers (ASME) certification of these sterilizers help ensure control of infection and long-lasting reliability. The sterilizers feature improved drying capabilities and an on-edge pouch rack. They are easier to service and available in a new, modern color. The optional printer accessory has been updated for simpler, immediate documentation.

To learn more, visit midmark.com.

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**OCKHAM PUBLISHING**

**Alternative medicine exposé**

*Placebos for Pets?* by Brennen McKenzie, VMD, MSc—popularly known as the SkeptVet (see skeptvet.com)—helps pet owners and veterinary professionals understand the claims and the evidence for unconventional pet health products and make good choices for their companions and patients. Dr. McKenzie has reviewed the latest scientific evidence for all of the major alternative medicine approaches, as well as dozens of individual products, while creating a toolkit so readers can sort through claims on their own. This book aims to do for veterinary medicine what *Bad Science* and *Trick or Treatment* have done for human medicine.

To learn more, visit ockham-publishing.com.

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**TEST & TREAT**

**Point-of-care UTI test**

Test & Treat’s U-Treat diagnostic product is designed to change how veterinarians approach suspected urinary tract infection (UTI) in dogs and cats. This patient-side test identifies the presence of UTI and the best antibiotics to treat the condition, with results available in minutes. This means veterinarians will no longer have to treat empirically while the urine sample is sent to an external laboratory or risk delaying treatment until results are received. With increasing concern over antimicrobial resistance, the test can also help vets deliver treatment in line with best practices. In clinical evaluations, U-Treat demonstrated high levels of sensitivity (97.1%) and specificity (92%) compared with reference lab results. The first part of the two-part test detects the presence of a urinary infection. The second part looks at antibiotic susceptibility, rapidly showing the best choice of antibiotic, as well as identifying those that won’t work due to antimicrobial resistance. The tests can be run independently of each other and are simple to carry out. The product is being distributed in the U.S. by MicroVet Diagnostics.

To learn more, visit microvetdiagnostics.com.
**QED MEDICAL**

**LED light source**

The Beamer 10-watt LED light source for equine treatments and exams affixes to any steel surface with a powerful earth magnet and provides beautiful, white-light intensity to fiber optic headlights, scopes or instruments through a convenient three-port turret. With a 50,000-hour LED life and a footprint of 3.25 by 2.5 by 1.75 in, the Beamer weighs 10 oz and is operational in 100-V to 240-V environments—a truly versatile light source.

To learn more, visit qed-medical.com.

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**PETWELLCLINIC**

**Franchise opportunity featuring new clinic concept**

PetWellClinic has launched a veterinary franchise system focused on delivering its veterinary service model to cities across the country. Currently operating multiple company affiliates in East Tennessee, PetWellClinic plans to disrupt the veterinary industry fundamentally by reconfiguring how essential veterinary care is provided. This market-tested formula provides essential preventive and wellness care along with treatment for minor ailments. PetWellClinic also equips veterinarians—its target franchisees—with the tools and resources to develop into successful, independent business owners. PetWellClinic focuses on addressing the needs of both pet owners and veterinarians who are hungry to grow through its company values of community, kindness, growth, openness and service.

To learn more, call (865) 696-5381 or email hunter@petwellclinic.com.

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**KINDRED BIO**

**Educational website**

Kindred Biosciences has announced the availability of KINections, a new educational website for veterinarians, practice staff, veterinary students and pet owners. The site provides information on feline, canine and equine disease states related to Kindred Bio’s product portfolio, including feline anemia, immune-mediated diseases and equine metabolic syndrome. The site also features videos, downloadable brochures and blog posts authored by KindredBio veterinarians, as well as details about KindredBio’s veterinary student outreach program.

To learn more, visit kinections.kindredbio.com.

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Here are the CE opportunities coming in the next few months:

**November 1**
- Overview of the Nervous System: A Case-Based Approach
  - Madison, WI
  - (608) 265-5206
  - apps.vetmed.wisc.edu/cereg

**November 2**
- Hands-On Feline Extraction Lab
  - Salt Lake City, UT
  - (360) 309-4951
  - vetetsteam.com

**November 3**
- Veterinary Forensics Seminar & Autopsy Lab
  - Madison, WI
  - (608) 265-5206
  - apps.vetmed.wisc.edu/cereg

**November 4-5**
- Equine Ultrasound-Guided Orthopaedic Injection Techniques & Therapies
  - Sheridan, IN
  - (812) 422-0943
  - vetetsteam.com

**November 5-7**
- Updates in Neurology and Emergency Critical Care
  - Islamorada, FL
  - (888) 488-3882
  - vetvacation.com

**November 8-9**
- Equine Hindlimb Lameness Diagnostics & Therapies
  - Rocky View County, AB
  - 844-870-6097
  - vetpd.com/courses/course-details/hindlimb-lameness-diagnostics-incl-objective-gait-analysis-and-therapies-nov2019

**November 8-10**
- Illinois State Veterinary Medical Association Annual Convention
  - Tinley Park, IL
  - (217) 546-8381

**November 11-12**
- VMC's Human Resources Boot Camp
  - Dallas, TX
  - (303) 674-8169
  - vmc-inc.com

**November 13-17**
- Great Smokies Veterinary Conference
  - Asheville, NC
  - (252) 422-0943

**November 14-15**
- VMC's Financial Boot Camp
  - Phoenix, AZ
  - (303) 674-8169
  - vmc-inc.com

**November 15-16**
- Evidence-Based Podiatry for Equine Practitioners
  - Thompson's Station, TN
  - 844-870-6097
  - vetpd.com/courses/course-details/evidence-based-podiatry-for-equine-practitioners-nov2019

**November 16-17**
- The Gift of Presence San Antonio, TX
  - lonestorveterinaryacademy.com

**November 16-17**
- Canine Fall Dentistry Course and Dental Extraction Wet Lab
  - Orlando, FL
  - (941) 276-9141
  - veterinarydentistry.net/canine-fall-2019

**November 17-19**
- Practical Techniques in Soft Tissue & Orthopedic Surgery
  - Las Vegas, NV

**November 18**
- Indispensable Associate Initiative Union City, CA
  - (720) 963-4481
  - aaha.org/associate

**November 20-24**
- Colonial Veterinary Conference
  - Williamsburg, VA
  - (252) 747-8180

**November 22-23**
- Rehabilitation for Lower Limb Tendon & Ligament Conditions
  - Ocala, FL
  - (864) 870-6097

**November 23-24**
- Feline Fall Dentistry Course and Dental Extraction Wet Lab
  - Orlando, FL
  - (941) 276-9141
  - veterinarydentistry.net/feline-fall-2019

**November 24-26**
- Intermediate Abdominal Ultrasound
  - Las Vegas, NE
  - vwc.org/intermediate-abdominal-ultrasound-november-2019

**December 3-7**
- Updates in Oncology, Geriatrics, and End of Life
  - Sint Maarten
  - (888) 488-3882
  - vetvacation.com

**December 12-15**
- Fetch dvm360 Conference
  - San Diego, CA
  - (913) 871-3900
  - fetchdvm360.com/sd

**January 18, 2020**
- Veterinary Meeting and Expo (VMX)
  - Orlando, FL
  - (352) 375-5672
  - navc.com/vmx

**February 16-19, 2020**
- Western Veterinary Conference (WVC)
  - Las Vegas, NV
  - (866) 800-7326
  - vwc.org/conference

For a full listing of events in 2019, visit dvm360.com/calendar

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Slow down, Billy!

Large and mixed animal veterinary practices expect some great escapes here and there. But why do these critters always seem to head for the biggest highway or a residential district?

You’d think we veterinarians would all know better than to build a large animal clinic in town. I can’t speak for the rest of the country, but I know we do it in Texas. Every small to midsize city has at least one veterinary clinic that’s not surrounded completely by a fence. This, of course, means there will be escapes.

I’ve worked as a veterinarian in two small Texas towns. What animal do you think would cause the most damage if it were let loose on the innocent citizens of rural America? Maybe a bull, a mean horse, a wild cow or perhaps a goat? What was that last one—a goat? I’ve had all of those critters loose at some time or another and I can tell you, the worst offender is the goat.

Off he goes
The little billy goat escaped first from its owner and then from me. This rascal was not much bigger than a boxer dog, but he was mighty. He was quick, smart and determined to remain intact. The clinic in Clarendon was located on a major highway, and across this major highway was the high-dollar district.

Billy managed to cross the highway without encountering an 18-wheeler, leaving him free to roam some of the finer neighborhoods Clarendon had to offer. I was hot on his heels but had to stop at the highway to let a few cars pass. This gave him just enough of a head start that there was no way I could catch him on foot, so I decided to go back and get my truck. My last glance of him was turning right onto “Ritz Avenue.” I figured he would run for a while and then stop and graze on some Bermuda grass.

By the way, this goat was mangy, weighed about 65 pounds (probably 25 of which were horns), had a bad attitude and was used to running with about 40 nannies. As such, he was used to fighting other billy goats for the right to pass his genes on to those nannies.

Getting his goat on
As I drove down Ritz Avenue the goat was nowhere to be seen, but I knew where he’d been. About every second or third house on this street had a glass front door. And every time the goat had passed one, he’d seen another 65-pound billy goat that looked just like him. Evidently this prompted him to have a head-butting contest even while fleeing from the veterinarian who was about to castrate him.

It wasn’t until I saw the second or third front door with broken glass that it dawned on me what was happening. And every time the goat had passed one, he’d seen another 65-pound billy goat that looked just like him. Evidently this prompted him to have a head-butting contest even while fleeing from the veterinarian who was about to castrate him.

About that time I heard the fourth door shatter and saw Billy leaving the crime scene with glass still dripping off his head. With a sinking feeling I realized that every time this small goat busted up a glass door it was costing the clinic about $500. I was only planning to charge $35 to castrate the rascal!

By now the neighbors had come out to see what all the commotion was. One by one they joined in the chase until we had a posse of Ritz Avenue residents in hot pursuit. We joined ranks and began heading Billy down alleys where there were no glass doors. As luck would have it, one backyard gate was open and the little goat ducked in. This gave us the means to corner him.

I jumped out of the pickup and made a beeline for the goat. He was standing next to a shed looking away from me. I snuck around the corner and pounced, taking him completely by surprise. I could tell him by the horns, and this time there was no way he was escaping my grip.

A lingering reminder
I had to put Billy in the cab of the pickup with me for the trip home. Do you know how long billy goat smell stays in the cloth seats of a 1981 Ford pickup? Well, I can tell you—weeks. Only four doors were lost that day (thank goodness), so it sure could have been worse. But to think: I was worried about him tromping through yards and eating a flower bed.

Bo Brock, DVM, owns Brock Veterinary Clinic in Lamesa, Texas. His latest book is Crowded in the Middle of Nowhere.
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