Too many pets, too little care

Once thought to be an eccentric hobby, animal hoarding is beginning to get the attention it deserves. By Sarah Mouton Dowdy

The definition of animal hoarding may surprise you. That’s because the crux of what classifies a person as a hoarder isn’t a particular number of animals—it’s whether or not those animals are provided with sufficient care, says Fetch dvm360 conference educator Kirk Miller, DVM.

This means that someone with 20 cats who’s able to meet all of their needs wouldn’t classify as a hoarder. But a person with only seven cats who’s overwhelmed by the situation and unable to provide a minimum level of care would.

As a clinical instructor of small animal primary care and shelter medicine at Oregon State University College of Veterinary Medicine and a pract- See page 19>

a drug’s life

How David Bruyette’s biotech startup is changing the way veterinary products come to market. By Jessica Vogelsang, DVM, CVJ

Back in the mid-1990s, a pharmaceutical company was investigating a new drug called sildenafil as a potential treatment for heart disease. The drug did not improve anyone’s cardiac function, so the company began the standard procedures to discontinue the clinical trial. When investigators told the participants the trial was over, they refused to return the drug. Confounded, the doctors asked why the men would want to keep a drug that didn’t do anything for their heart condition.

Thus began the development of Viagra, perhaps the most successful serendipitous discovery in pharmaceutical industry history. Viagra follows the typical development arc for new pharmaceuticals: Scientists determine what a chemical compound does in the body, then see where it can be applied to human medicine. Lead with the solution, then find the problem. If a pharma company thinks a drug has potential, it launches a four-stage clinical trial.

See page 18>
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For more information, please see full prescribing information.
Partnership brings an opportunity for attendees to join a live podcast taping with well-known veterinarian Dr. Andy Roark.

The upcoming Fetch dvm360 conference in Kansas City, Missouri, will partner with the Uncharted Veterinary Conference created by Andy Roark, DVM, the groups announced recently. Both conferences are designed to provide veterinary professionals with the latest clinical information, patient care tips, and practice management content in a live format. The founder of the Uncharted Veterinary Conference, Dr. Roark has been a premier speaker at Fetch dvm360 conferences and a contributor to dvm360.com for many years. “Fetch has a great, fun vibe, just like Uncharted,” says Dr. Roark, a practicing veterinarian and international speaker, in a dvm360 release. “I’m so excited for managers, practice owners and veterinary staff to attend Uncharted and Fetch and return home ready, to make changes in the practice together.”

The 2019 Uncharted Veterinary Conference, which will be held from Wednesday, Aug. 21 to Monday, Aug. 26, with continuing education hours available. In addition, both conferences invite all attendees to join the first live Uncharted Veterinary Conference Podcast taping event Friday, Aug. 24, co-hosted by Dr. Roark and Practice Manager Stephanie Goss.

To find out more information, visit fetchdvm360.com/kansasCity.
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M6 | Behavior
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CAPC study: Proactive surveillance means dogs can predict Lyme disease risk for humans

According to new research from parasite council, regular monitoring of canine seroprevalence shows where people are at highest risk of contracting tick-borne disease.

Advocates of the One Health model focus on how veterinary medicine can positively impact other areas of health and vice versa. A new study from the Companion Animal Parasite Council (CAPC) gives credence to this idea. It found that regularly testing dogs for tick-borne illness can help predict where humans are at risk of Lyme disease.

The study quantifies the association between canine seroprevalence for Borrelia burgdorferi and human incidence of Lyme disease, according to a release from CAPC. As seroprevalence for B. burgdorferi in dogs increases, so does human incidence of Lyme disease.

Using data from dogs is less expensive and logistically challenging than monitoring Lyme disease rates in people, the release states. Canine seroprevalence monitoring is active and data are reported monthly at the county, state and national levels. In contrast, human Lyme disease surveillance is conducted passively, and it’s difficult to gather contemporary data, researchers say.

“Unlike human medicine, veterinarians are fortunate to have the advances and commonality of annual testing and vaccination for Lyme disease in dogs,” says Karen Fling, DVM, president of East Lake Veterinary Hospital in Dallas, Texas, in the release.

Human risk of exposure now goes beyond the traditional realm of the northeastern United States. States that include mostly high-incidence areas (10 cases or more per 100,000 humans) include Minnesota, Wisconsin and Virginia. Bordering states with some high-incidence areas include Michigan, Iowa, Illinois, West Virginia and North Carolina, according to the release.

Veterinarians, physicians and pet owners can access canine data on the CAPC website (petsandparasites.org) to assess risk for exposure.
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Beth, LVT
Austin Veterinary Specialty & Emergency (AVES)
CBD epilepsy trial results ‘encouraging’

The team behind the research at CSU found that 89% of dogs in study experienced a reduction in seizure frequency.

New findings from a pilot study to assess the use of cannabidiol (CBD) oil for dogs with epilepsy are “promising and exciting,” according to a recent release from Colorado State University.

The study, led by Stephanie McGrath, MS, DVM, DACVIM, a neurologist at Colorado State University’s James L. Voss Veterinary Teaching Hospital, and sponsored by Applied Basic Science Co., assessed the short-term effects of CBD on seizure frequency in dogs. Of the patients that received CBD in the clinical trial, 89% had a reduction in the frequency of seizures, the release states.

In this blinded study, 26 client-owned dogs with idiopathic epilepsy were assigned randomly to either the treatment or placebo (control) group for 12 weeks; 12 dogs were treated with CBD-infused oil, while 14 were given noninfused oil. All dogs remained on standard anticonvulsant medications, including phenobarbital and potassium bromide. After exclusions, nine dogs in the CBD group and seven in the control group were included in the analysis.

The CBD oil used in the study was derived from hemp, which has 0.3% or less of the psychoactive component of cannabis (THC), the release states. The compound is not considered to be marijuana and can be used for research purposes based on the 2014 Farm Bill. In addition to the distinct reduction in seizure frequency in the dogs that received CBD, there was reduction and the concentration of CBD in the blood. “We saw a correlation between how high the levels of CBD oil were in these dogs and how great the seizure reduction was,” Dr. McGrath says in the release.

Based on the results of this study, Dr. McGrath adjusted the dose of CBD oil for dogs in an ongoing clinical trial that aims to enroll 60 client-owned dogs with epilepsy. She also hopes to launch a new study later this year to determine the optimal dose of CBD to treat epilepsy in dogs.

Penn Vet announces new entrepreneurship program

This immersive program is designed to build entrepreneurial skills and affect public health on a larger scale. By Maureen McKinney

The veterinary profession’s influence on public health is becoming ever more evident. Veterinarians can offer insight and ideas that address complex societal issues ranging from public health to human and animal well-being.

That’s why the University of Pennsylvania School of Veterinary Medicine has added the Leading Veterinary Entrepreneurs to its continuing education platform.

The intensive executive program, which is intended for veterinarians, scientists, technologists, academic leaders and innovators, covers topics like entrepreneurship fundamentals, global challenges for veterinarians, the landscape of healthcare, utilizing resources, and fostering partnerships, sociopolitics and leadership. The first session took place in June.

“This program is designed to prepare individuals to take on an entrepreneurial mindset that may be outside their areas of education and experience,” Andrew Hoffman, DVM, DVSc, Gilbert S. Kahn Dean of Veterinary Medicine at Penn Vet and the program’s academic director, says in a release from the university. “It’s intended to introduce the foundational skills needed to develop a new product, service or to identify new organizational opportunities, says Dr. Hoffman.

Veterinarians are uniquely situated to conceptualize solutions that can enhance the quality of animal and human lives, from appliances that improve pet mobility to devices that monitor our health. "It is our role as educators to make sure our students and alumni are well equipped to identify market opportunities that could lead to entrepreneurial careers that parallel, or go beyond, the practice of medicine,” he says.
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Cat-killing veterinarian loses appeal in court

The Texas Supreme Court has reaffirmed the decision to hold Kristen Lindsey, DVM, accountable for her actions in 2015 that sparked international outrage. By Maureen McKinney

On April 15, 2015, Texas veterinarian Kristen Lindsey, DVM, made the fateful decision to post a photo of herself on Facebook holding a cat that she had just shot with a bow and arrow. The image, accompanied by boastful comments about the kill, including “My first bow kill ... lol,” quickly went viral and incited the wrath of pet lovers and veterinary professionals around the world.

Shortly after the incident occurred, Dr. Lindsey was fired from her position at the Washington Animal Clinic in Brenham and her actions were denounced by the AVMA, the Texas Veterinary Medical Association and her alma mater, Colorado State University.

In 2016, citing ethics violations and animal cruelty, the Texas Board of Veterinary Medical Examiners suspended Dr. Lindsey’s veterinary license for one year to be followed immediately by four years of probation.

According to court records, Dr. Lindsey’s appeal to the Texas Supreme Court to revoke her punishment was denied late last week. She remains permitted to practice veterinary medicine only on a probationary basis until February 2020.

Although Dr. Lindsey admitted to killing the animal, she said the feral cat had been on her property, which gave her the right to kill it. But neighbors said the cat was a pet named Tiger.

“This was a case of a veterinarian not only ignoring her responsibility to relieve suffering, but actually rejoicing in the suffering she was inflicting on Tiger,” said Becky Robinson, president and founder of Alley Cat Allies in a statement on the group’s website. "The Texas Supreme Court now becomes the highest authority in the state to confirm what we’ve known all along—that Kristen Lindsey is wholly deserving of punishment for her brutal killing of Tiger.”

Prior to appealing to the Texas Supreme Court, Dr. Lindsey made several failed attempts in lower courts to have her punishment revoked, claiming that it negated the right of property owners to protect their home and land against damage caused by animals.

According to a report on the Veterinary Information Network, Dr. Lindsey will not pursue further appeals in her case. It is unclear whether she is practicing veterinary medicine at this time.

Texas Tech takes a $17.4 million step toward new veterinary school

Funding in state budget—now approved by governor—is more than four times previous amounts allotted by legislators.

A Texas state legislative committee voted in May to include $17.4 million in the state budget to establish a new veterinary school at Texas Tech University. The amount is a significant increase from the roughly $4 million included in the first budget, according to a story from the Lubbock Avalanche-Journal.

Seven Texas congresspeople announced the funding to help “address the shortage of large and mixed animal veterinarians in rural parts of the state” and “to secure the food supply.”

“The school will address the hundreds of students who are leaving the state of Texas for a more costly education, then coming back to practice in their home state with upwards of $250,000 in debt due to out-of-state tuition,” the legislators’ release states.

Texas Tech first announced plans to develop the school in Amarillo, Texas, in 2015, forming a steering committee the next year. Two years later, plans for the school inspired a local economic development group to pledge up to $69 million to help with construction.

The new college of veterinary medicine would join Texas A&M University as the second Texas school to educate veterinarians. The two schools squabbled back in 2016 about the need for the school, with Texas A&M against a new veterinary school at the time and arguing that their off-campus partnerships would take care of the state’s needs for food animal and agricultural veterinarians.

Gov. Greg Abbott signed the full $250 million state budget on June 15 with no line-item vetoes.
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**TOTAL URINARY CARE — INCLUDING STONES AND FIC**

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What are the most common puppy names you might be seeing at your veterinary practice? Nationwide says a *Harry Potter*-inspired name beat out *Twilight*.

What are people naming puppies these days? Nationwide shared its list of names of dogs 2 years or younger drawn from a database of more than 750,000 insured pets.

The top five most popular puppy names and in what states are:

1. "Luna" (from fan-favorite character Luna Lovegood in the *Harry Potter* books) was tops in California, Colorado, Connecticut, Delaware, Florida, Indiana, Massachusetts, Michigan, Minnesota, New Jersey, New York, Ohio, Pennsylvania, South Dakota, Utah, Virginia, Washington, Wisconsin and Wyoming.

2. "Bella" (from the main character in the *Twilight* series—a name that has spent years atop lists for both dogs and cats of all ages) was most popular in Alabama, Arizona, Georgia, Hawaii, Idaho, Iowa, Kansas, Mississippi, Nevada, New Hampshire, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee and Texas.

3. "Charlie" was the favorite puppy name in Illinois.

4. "Bailey" was tops in Kentucky and Maryland.

5. "Cooper" won in Maine, Missouri and Rhode Island.

Other state-by-state winners include these classics:

- "Buddy" (New Mexico)
- "Duke" (Arkansas)
- "Louie" (North Dakota)
- "Lucy" (Alaska, Ohio)
- "Max" (Nebraska)
- "Molly" (West Virginia)
- "Penny" (Washington, D.C.)
- "Ruger" (Vermont)
- "Sadie" (Montana)
- "Stella" (Louisiana).

Kansas State University announces Bonnie Rush as dean of vet school

Dr. Rush has been at K-State since 1993 and interim dean since 2017. After a national search, Bonnie Rush, DVM, MS, DACVIM, has been selected as the new dean of the College of Veterinary Medicine at Kansas State University. Rush has been serving as interim dean since 2017.

"With her strong history of leadership for the College of Veterinary Medicine, Dr. Rush is the right choice to lead this college and its vital teaching, research, service and outreach programs into the future," says Charles Tabor, MS, PhD, provost and executive vice president of Kansas State University, in a release from the university.

Dr. Rush became a faculty member at Kansas State University in 1993 and head of the clinical sciences department in 2006, where she coordinated core courses, led curriculum reform and maintained responsibility for clinical outcome assessment, according to the release. As a professor of equine internal medicine, Dr. Rush specializes in equine respiratory disease with an emphasis on respiratory physiology, immunology and aerosol drug therapy.

As dean, she will be tasked with program development, faculty and student development, research, teaching and extension, program accreditation, diversity and the 2025 plans for both the college and the university, according to the release. The College of Veterinary Medicine has three academic departments and two service units, and provides broad training opportunities across companion and exotic animals and livestock species.

"It has been an honor to serve as the interim dean," Dr. Rush says in the release. "The students, faculty and staff of the College of Veterinary Medicine are tremendously talented and committed to advancing the missions to strengthen animal health and well-being through research, education and service."

Her appointment began June 16.
AAFP releases feline diabetes toolkit

Resource aims to make treatment of diabetes in cats more effective.

Diagnosing, treating and monitoring diabetes in cats is challenging, in part because every patient requires a customized treatment plan that must be reassessed and adjusted on an ongoing basis.

To help veterinary professionals make the best diagnostic and treatment decisions for their feline patients, the American Association of Feline Practitioners (AAFP) has released a Diabetes Educational Toolkit.

This digital resource is intended to help veterinary professionals access and gather information quickly from clients, according to an AAFP release. The toolkit focuses on diagnosis, treatment, remission strategy, troubleshooting and frequently asked questions. Each section of the toolkit can be downloaded and printed for easy accessibility in the practice.

The release notes that effective treatment of diabetes in cats is based on a combination of patient goals, client finances, implementation of the treatment plan and the patient’s response. A strong partnership between the veterinarian and the cat owner is key.

“We are excited to release this digital resource to the veterinary community in the hopes that we can help veterinary professionals in the diagnosis and treatment of their diabetic feline patients,” Apryl Steele, DVM, president of the AAFP Board of Directors, says in the release.

The toolkit was made possible by an educational grant from Boehringer Ingelheim and developed by Audrey Cook, BVM&S, Msc VetEd, DACVIM-SAIM, DECVIM-CA, DABVP (feline); Kelly St. Denis, DVM, DABVP (feline); Sonnya Dennis, DVM, DABVP (canine/feline); and Elaine Weidler-Mitchell, DVM, DABVP (feline), chair.

Access the toolkit at catvets.com/diabetes-toolkit.

Another resource dvm360.com/felinecenter.

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How tired are vet students, exactly?

No shocker, veterinary students are tired. This new study proves it and raises a new question: Now what?  

By Brendan Howard

See, it all started when Michael Nappier, DVM, DABVP, was making the argument that checklists built from Partners for Healthy Pets material could help veterinary students perform better, more consistent wellness exams. He was surprised at the pushback.

“Believe it or not, I got this feedback: ‘We know checklists are useful in situations where people are under stress or sleep-deprived, like airline pilots or human-medicine surgeons, but we have no data that veterinary students are stressed or sleep-deprived,’” Dr. Nappier says. “It was one of the most confoundingly ridiculous statements I’d heard in a long time, especially with all the talk in the profession about wellness.”

So, Dr. Nappier and three other study coauthors surveyed veterinary students at the Virginia-Maryland College of Veterinary Medicine in Blacksburg, Virginia, at five points (September, November, December, February and May) over the course of an academic year to quantify their perceived sleep quality and sleepiness during activities. The study used the Pittsburgh Sleep Quality Index and Epworth Sleepiness Scale, and the results showed that the 312 students participating had poor sleep quality and above-average to excessive daytime sleepiness. (See Table 1.)

Dr. Nappier hopes the research will spur critical examination of veterinary school curriculum and evaluation of how students spend time in school. One possible takeaway for Dr. Nappier: “I remember my own time as a veterinary student. I’d be in the hospital 24 hours straight. As I review this data about how tired students are, I’m thinking hey, if you’re going to work overnight in ICU, maybe you shouldn’t have to be on the next day.”

Adjusting the curriculum and pace of assessments is another change the research could support, he says. “We’re asking students to digest so much, and we cram in back-to-back assessments during their education. Let’s step back. Why are we doing it this way? Is everything we’re teaching truly material they need as veterinarians? How many hours are we physically expecting them to be there and learning?”

It’s easy to say veterinary school is just stressful. Veterinary students will survive, graduate and get out in the real world, where, in theory, they’ll be more well-rested. “Veterinary school is their real world for a number of years, though,” says Dr. Nappier. “Yes, we produce excellent clinicians—but at what personal cost?”

From our readers

We got some great personal feedback on this study on Facebook. A few highlights:

“The pinnacle for me was my surgery rotation. There were supposed to be eight students, but there was an outbreak of MRSA on the surgery ward, so four dropped it last minute. So we had the case load for eight, with four students. I was there every day until 11 p.m., and had to be back the next morning for 5 a.m. to have all my patients written up before rounds. Let’s just say that is not the ideal way to learn. Definitely nearly passed out holding a leg for the surgeon. I lost 10 pounds in two weeks.”  
—Teresa Bousquet

“I was super sleepy, and still am 12 years later. In vet school I used to stay at school until sometimes 8 or 9 at night, study until 1 a.m. then set my alarm for 4, study for a bit then go back to school. I can’t believe I did it. Then 10 years of on call. Needless to say, my sleep is now permanently screwed.”
—Heather James

“Just because it’s the way it’s always been, doesn’t mean it has to be that way forever. Even if that’s how it is in practice, no reason schools can’t have it be better. I’m sure someone will reply with something along the lines of ‘spoiled millennials,’ and ‘we had to put in our time, so should you.’ But if that’s true, and you suffered, why not let that motivate you to affect change?  
*IDK. I survived clinics despite the lack of sleep. I know there’s sleepless nights ahead. But if students after me can have it easier? Great. I want that for them.”
—Lucy Rose

Table 1: Means across 5 time points for sleep quality and sleepiness

<table>
<thead>
<tr>
<th>Month</th>
<th>Sleep Quality</th>
<th>Sleepiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>September</td>
<td>7.05</td>
<td>9.24</td>
</tr>
<tr>
<td>November</td>
<td>7.43</td>
<td>9.79</td>
</tr>
<tr>
<td>December</td>
<td>7.38</td>
<td>9.68</td>
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<tr>
<td>February</td>
<td>7.37</td>
<td>9.61</td>
</tr>
<tr>
<td>May</td>
<td>6.78</td>
<td>8.63</td>
</tr>
</tbody>
</table>

PHOTOGRAPHEE.EU/STOCK.ADOBE.COM

Veterinary students sleep like babies... as in definitely not enough and they usually wake up crying.
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.

We’re confident that we can care for and grow your practice like no one else. We’d be more than happy to talk through your questions. You can reach us at: 888.767.7755 | NVA.com | info@NVA.com

Dr. John Paulson, Ridgetop Animal Hospital
NVA partner since 2012.
Ten years and $100 million later, about 14% of those drugs make it through the FDA approval process to market. The FDA mandates a drug be safe and effective. The pharmaceutical company that spends the $100 million mandates it be profitable.

Somewhere in another part of the building, the animal health divisions of large pharma companies wait on the sidelines. “What typically happens in these big pharma companies is that a drug bombs on the human side and they give it to the vet side,” says David Bruyette, DVM, DACVIM, chief medical officer at Anivive Lifesciences.

“Then they say, ‘See if you can make something happen with it.’”

If there’s potential, the process starts all over again with a new veterinary trial. This laborious, time-consuming and expensive series of steps may explain why FDA-approved veterinary drugs are so sparse. But Dr. Bruyette thinks Anivive can change all that.

“It’s not really surprising that 85% of the diseases that veterinarians face either don’t have any treatment, or veterinarians tend to use human drugs off label,” says Dr. Bruyette. “It just doesn’t make financial sense to spend 10 years and $100 million on a product that may only sell $10 million a year. And that doesn’t mean that that product and that disease aren’t important. It just means there are probably better ways to invest your capital.”

The intro that almost didn’t happen

Dr. Bruyette’s entrance into the startup world began three and a half years ago, with a random email sent through LinkedIn. At the time, he was medical director at VCA West Los Angeles. Before that, he was head of internal medicine at Kansas State. Well-entrenched in traditional clinical practice, Dr. Bruyette almost ignored the LinkedIn message from a 20-something entrepreneur asking if he knew anything about dog diabetes. Dr. Bruyette, a diplomate of the American College of Veterinary Internal Medicine, replied that he did. Eventually.

“I wrote him back. I said, who are you? I don’t know you,” Dr. Bruyette says, laughing. “I couldn’t find him on the Internet anywhere.”

The entrepreneur in question was Dylan Balsz, who had already launched several successful companies, including International Pet Solutions, which sells a “pet potty” called PetLawn. Impressed by Balsz’s success, Dr. Bruyette agreed to meet him. Balsz shared that he’d been approached by a pharma company wondering if he had any ideas for determining whether one of its shelved drugs might be of use in the veterinary space. Although the drug wasn’t applicable on the human side, much of the preliminary testing had already been performed.

“On the human side, to get a drug approved, you show that it’s safe in rodents and then typically you move it into something larger,” says Dr. Bruyette. “The larger animal could be a primate or a pig. A lot of times, it’s a dog.”

Much of this research is in pharmacokinetics, Dr. Bruyette continues: “Do dogs absorb it? What concentrations? Does it get in their blood? Is it safe?”

In a large company, this would be where the handoff to animal health would take place if the drug had no human application. But in smaller companies with no easy way to access the veterinary market, the products are simply sheltered.

The company that contacted Balsz hoped he might know how to discover whether any of those drugs might improve the lives of animals. Balsz knew business, but he had no background in veterinary medicine—hence his out-of-the-blue LinkedIn message to a prominent veterinary endocrinologist.

Dr. Bruyette was in. Although he and Balsz did not end up developing the original drug they explored, things were about to get more interesting.

Re-inventing drug discovery

In talking about the drug approval process, Balsz and Dr. Bruyette questioned whether there was a way to more make it more efficient and streamlined. “Does it really need to take 10 years and $100 million to get a drug approved?” says Dr. Bruyette.

Making the process more cost-effective would remove a huge barrier to new drugs entering the veterinary market. “Is there a way to leverage existing data and target an unmet need?”

His and Balsz’s goal became even loftier than their original idea of taking human medicine’s castoffs and trying them on animals. What if, they asked, they could use software platforms to develop potential new therapies more efficiently?

Fast-forward to today. If you look at the who’s-who on the Anivive homepage, you’ll notice that many are software engineers and computer scientists. How does this jibe with the stereotypical image of the lab-coat-wearing, beaker-holding scientist we associate with pharma research? “The best way to develop a lead,” says Dr. Bruyette, “is to develop software.”

“It’s not really surprising that 85% of the diseases that veterinarians face either don’t have any treatment, or veterinarians tend to use human drugs off label.”

—Dr. David Bruyette

Turns out that software development has kicked off a new golden era of drug discovery, and it’s all thanks to the approach.

“We look for an unmet need—for instance, lymphoma,” says Dr. Bruyette. “And then we ask, OK, what’s really needed for lymphoma patients? What we would like to have for treatment is a veterinary-approved drug with a good safety margin that can be administered orally, that works through a mechanism of action that’s different from other chemotherapeutics that are out there.” Anivive takes a veterinarian’s therapeutic wish list and, through specially developed software platforms, starts sorting through existing data to see if such a compound might exist.

The software delivers an initial set of compounds. Then the process of elimination begins. “Do those compounds interact with a target that we know is present in lymphoma?” Dr. Bruyette says. “Is there a mutation in dog lymphoma cells and human lymphoma cells that would generate a target, and would this drug interact with that target?” The list of 20,000 becomes 10,000.

“Then we ask how many of those 10,000 compounds have data,” says Dr. Bruyette. The team also researches whether any of the compounds are already protected by a patent. Eventually, the list is whittled down to just a handful. With that list in hand, Anivive approaches the groups working with the drugs.

“We go out to whoever those people are, whether they’re universities or pharma companies. We take an option so we can learn a little bit more about the drug. And if we like it, then we end-license it for veterinary use,” says Dr. Bruyette.

Anivive’s internal regulatory team has experience taking therapeutics through both the FDA and USDA approval processes and eventually to market. The importance of the regulatory component can’t be underestimated—particularly when it comes to determining whether a new product falls under the auspices of the FDA or USDA. In human medicine, it’s easy: it all falls to the FDA. In animal medicine, there used to be a clear delineation: FDA for drugs that treat, USDA for vaccines that prevent. But today’s newest biomedical technologies can blur the lines.

“The FDA has ruled that viral vector gene therapies are therapeutics. They’re not biologic in nature,” says Dr. Bruyette. “But Cytopenic is a monoclonal antibody that went through USDA. Things that rely on the host to elicit the response, like a biological response modifier or monoclonal antibody—those are USDA products.”

Sometimes not even the agencies themselves are sure where to file a product. What if something is therapeutically by virtue of its immune-modulating properties? One product under investigation by Anivive is just such a compound. “We actually had a joint meeting with the USDA and FDA and presented our information to them and said, ‘Where does this go?’”

At the moment, the product is available only through clinical trials under the FDA’s pre-approval compassionate use provision.

“We’re an unmet needs company”

Nowhere is the need for novel drugs more apparent than in veterinary on-
Too many pets, too little care

Continued from the cover

ing veterinarian with the Oregon Humane Society in Portland, Dr. Miller is no stranger to the world of animal hoarding—a world that includes an estimated 250,000 animals per year in the United States alone. With so many affected animals, there’s unfortunate-ly a good chance that if you haven’t witnessed animal hoarding yet, you will in the future.

“According to the Animal Legal Defense Fund and the Pet Abuse Database, the animal hoarding trend seems to be going upward, especially in the past 10 years,” says Dr. Miller. “But it’s hard to say if that’s because there’s more hoarding going on or if awareness is simply growing. Thanks to television shows on the topic, the problem is more top of mind.”

Animal hoarder typology

Building on the definition of hoarding we started with, Dr. Miller says animal hoarders are often characterized by obsessive attempts to accumulate or maintain a collection of animals in the face of progressively deteriorating conditions.

“Even though things are bad or going downhill, they’re still trying to get more animals or keep the ones they’ve got,” he explains.

Animal hoarders fail to provide their pets with minimal standards of sanitation, space, nutrition and veterinary care, and they are unable to recognize the effects of this failure on the welfare of the animals, themselves and other people who live in the household, says Dr. Miller.

Though he stresses that there can be a lot of overlap and gray area, Dr. Miller explains that it can be helpful to know the three types of hoarders, as the typology can be used to guide authorities on the most appropriate intervention approach.

The overwhelmed caregiver. According to Dr.
Miller, this is a person with good intentions who’s trying to take care of their animals but eventually becomes overwhelmed. Pets in this situation are often passively acquired, he explains—consider the “neighborhood cat lady” who keeps getting cats brought to her until the situation spins out of control.

“Overwhelmed caregivers are more likely to understand there’s a problem and thus typically have fewer issues with authority and accepting intervention,” Dr. Miller says.

The rescue hoarder. Rescue hoarders, on the other hand, have a compulsive need to rescue animals from euthanasia and tend to see humane organizations as the enemy—in their eyes, they’re the only ones who can help these animals, explains Dr. Miller. Unlike overwhelmed caregivers, they actively acquire pets and will avoid authority.

“They’re not amenable to help because they believe they’re the only ones who can help,” he says. “Sometimes it’s just to have a bunch of animals.”

This category can include those who run puppy mills and who illegally sell animals into research. Exploiter hoarders have an extreme need for control and will lie, cheat and steal to achieve their ends.

A detriment to pets and people
Malnutrition, neglect, stress and infectious diseases are common with these animals, says Dr. Miller. “Cats and dogs are sometimes too far gone—medically, behaviorally or both—to be adopted out after being rescued.”

The people involved in these situations don’t go unscathed either—risk of zoonotic disease is high and sanitation concerns and self-neglect are common. To illustrate his point, Dr. Miller describes a case in which a woman lived in a one-bedroom apartment with 48 cats. When her toilet stopped working, she was unable to ask for help from her landlord (due to violating the conditions of her lease) and started using her bathtub as a toilet.

That’s not the worst of it. “Sometimes, the hoarder’s home is so bad that it has to be destroyed,” he says.

From an eccentricity to a disorder
While the effects are obvious, the causes of animal hoarding are less clear. When animal hoarding was first reported in the early 1980s, it was referred to as “animal collecting.” Such a term made it sound more like an eccentric hobby, says Dr. Miller. Hoarding disorder is now a separate listing in the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders, and theories regarding the cause abound. Some speculate that it’s linked to a traumatic event or an attachment disorder stemming from childhood (i.e., a person who wasn’t cared for properly as a child may turn to animals and develop unhealthy dependencies). Others have pointed to addiction models, delusional disorder, borderline personality disorder, obsessive compulsive disorder and consistent caregiving—none of which adequately describes every hoarder, says Dr. Miller. Dementia has also been documented in many hoarders, but not all of them.

Problematic prosecution
Prosecuting animal hoarders and getting them the long-term monitoring and therapy they need is difficult, Dr. Miller says. Animal hoarding is typically prosecuted under state animal cruelty laws as a crime of omission or neglect, though some states have developed hoarding-specific legislation.

Forfeiture laws are often used but can have a dramatic effect on the shelter that must house the seized animals while the case moves through the legal system. Bond laws, which require the animals’ owner to post a security or bond to pay for the care of the seized animals, can also be used. According to Dr. Miller, this approach can either help defray the costs associated with caring for these animals or can be used as a negotiating tool for getting hoarders to sign over their animals so they can be fostered and adopted out.

The penalties for animal hoarding are often inconsistent and ineffective at deterring the crime. For one, district attorneys may try to lump everything into one charge to avoid clogging the court system, says Dr. Miller.

“These are individual animals and should be treated as individual cases,” he continues. “Having all of those separate charges really helps during the penalty phase.”

Moreover, because the causes of animal hoarding are not well understood, and because hoarders are usually in denial that they have a problem, therapy is rarely mandated or followed through on, Dr. Miller explains. Monitored probation is also uncommon.

In cases that do go to trial, Dr. Miller highlights the importance of having veterinarians serve as expert witnesses.

“Someone with a white coat who can tell it like it is carries a lot of weight,” he says. “The defense is going to have their own medical expert witnesses, so it’s really important that the prosecution has expert witnesses as well.”

Hope for hoarding
According to Dr. Miller, the recidivism rate for animal hoarding is estimated to be 100 percent.

“The old adage that an animal hoarder is going to leave the courthouse and pick up another animal on the way home likely has a lot of truth to it,” he says.

But that doesn’t mean Dr. Miller doesn’t think things can improve.

“Overall, the legal system needs to treat the problem more seriously,” he explains. “The biggest thing we can do is mandate therapy for these people so we can start collecting data to learn what’s behind animal hoarding. And we need to institute monitored probation to make sure offenders don’t leave the area and keep doing what they’re doing elsewhere.”

Sarah Mouton Dowdy, a former associate content specialist for dvm360.com, is a freelance writer and editor in Kansas City, Missouri.
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Please see Brief Summary on page 20.
Minimal clutter, maximum efficiency

Using her work as an associate and then locum tenens, this Hospital Design Competition Merit Award winner knew what she wanted: good-looking and clutter-free, with a much-needed break room for team members to decompress. By Sarah Moser

By the numbers

Goose Creek Veterinary Hospital

Owner: Dr. Margaret Fortier
Number of doctors: 1
Exam rooms: 3
Total cost: $2,255,461
Cost per square foot: $120
Square footage: 3,000
Structure type: New, leasehold
Architect: Charles Joch, CHJ3
Architecture
Experience is a great teacher. After 10 years practicing veterinary medicine in Washington, D.C., in a four-story row house, Margaret Fortier, DVM, moved to the suburbs with a dream of opening her own veterinary practice. She had served as hospital director at her previous facility, and now her work as a relief veterinarian was invaluable to thinking over exactly what her practice would look like, she says.

“I saw a lot of what I liked and didn't like, and I was able to learn what size practice I was hoping for,” says Dr. Fortier.

Her No. 1 design objective turned out to be neatness: “Clean, no clutter, every object has a purpose, and everything is easy to clean,” she says. “A minimalist, industrial design element was the look I wanted. It was extremely important to me to have an appealing visual aesthetic, especially since I hope to be working and thriving in this space for the next 20 years.”

In March 2018, Goose Creek Veterinary Hospital in Ashburn, Virginia, was born. The 3,000-square-foot small animal hospital earned a 2019 Hospital Design Competition Merit Award for its clean, open and airy design and uncluttered style.

“I'm a clean, minimalist person
Veterinary clinics tend to accumulate stuff over time,” says Dr. Fortier. “Personally, I'm a clean, minimalist person, and I wanted that reflected in my practice.”

Her design objectives were to have everything off the ground, have a place and a purpose for everything in the hospital, for everything to be easy to clean, and for the practice to look and smell clean at all times.

These objectives led every design decision. For example, in the dental area, the counter was built higher than usual to store the dental compressor underneath. Dr. Fortier says the area doesn’t feel as crowded thanks to this detail.

Custom-built shelves in the pharmacy give a home for each and every drug and supply, making inventory management easier.

“I've practiced in places where drugs and supplies were all over the building; we couldn't find anything,” Dr. Fortier says.

She also focused on building spaces for as many items as possible to go under counters, leaving countertops clear. This included designing a space for the centrifuge to sit under the cabinet with a hole in the counter for access. An added benefit, besides a clear counter, is that it helps muffle the noise of running the centrifuge.

Even small details—like not putting too many trash cans in treatment—caught Dr. Fortier’s attention. She has only one trash can on the floor in the treatment area, and staff members have been trained to take the few extra steps to keep the area clean.

Giving everything its own space extends to the staff members, too.

“I've worked in a practice before that was a 'U' shape, with doctors sitting at high-top bars in the middle of the treatment area, with no personal space,” says Dr. Fortier. “I felt like we could never get away from the animals, never had privacy or a place to breathe.”

This led to Goose Creek’s staff area.

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‘If you don’t ask, you don’t get’

Obviously, Dr. Fortier had clear thoughts on what she wanted in a practice. And as a first-time practice owner and builder, it would have been easy for her to let others dictate how the process should go.

“In the beginning, I felt shy to ask for what I wanted, but that soon faded and I developed the philosophy that this is my life’s dream and that it’s going to look the way I want it to look,” says Dr. Fortier. “I’m not afraid to ask for what I want and speak up. This applied to getting good prices, fixing mistakes and getting stuff for free when things didn’t go smoothly. If you don’t ask, you don’t get.”

Dr. Fortier says she’s been undermined in her job in the past, and she wasn’t about to let that happen to her again, especially in her very own practice—the place she spends most of her days.

“If life knocks you down from time to time, and as women we might feel that we don’t deserve things, “she says. “But if I have to be pushy or aggressive to get what I want, I won’t apologize for it. It’s my money, my dream, and ultimately me working to make it work.”

Exam rooms feature whimsical artwork, decorative benches and glass-paned doors that let light flow in.

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A walk through

Goose Creek Veterinary Hospital is in a newly constructed leasehold space. The neutral color exterior with a pop of red on the awning sets the tone for what awaits inside.

Crisp white greets pet owners when they first walk in. To tie into the red in the logo, Dr. Fortier had a bold-red printed commercial-grade steel panel applied to the front of the reception desk. The piece “makes a statement,” she says, and people see the pop of red when driving up.

The lobby is sparsely decorated purpose, with only a magnetic chalkboard labeled with the day’s incoming patient names, which kids can also write and draw on.

The three exam rooms hold to Dr. Fortier’s less-is-more philosophy: A simple aesthetic with minimal decor makes the rooms easy to clean.

The treatment area features heated cages, one of Dr. Fortier’s favorite splurges for her patients. And all of the equipment is given a home off the top of counters, keeping clutter out of the way but still accessible.

The designated staff room gives the team a break from the chaos.

The surgery suite features equipment including a Baxter IV pump and surgical table from VSSI.

The neutral color exterior with a pop of red makes the rooms easy to clean.
Will the feds forgive your student loans?

A primer on the Public Service Loan Forgiveness program from the AVMA Economics team.

Editor’s note: Caroline Cantner, VMD, contributed to this column. She is assistant director for student initiatives with the Association of American Veterinary Medical Colleges.

Here at the AVMA, we’re often asked by association members about the federal government’s Public Service Loan Forgiveness (PSLF) program as a strategy to pay student debt. This program, administered by the U.S. government, forgives the remaining debt on eligible loans for borrowers who have worked at least 10 years in public service or the nonprofit sector.

PSLF has proven to be a critical resource for veterinarians who otherwise would be unable to work in public health or other public service fields. It’s a viable option for many, but there are strict rules about who qualifies. If you’re wondering whether PSLF is right for you, here’s what you need to know.

How to qualify
Eligibility for PSLF is based on three criteria:

1. Employment. Qualifying for PSLF isn’t about the specific job you do, but rather who you do it for. Essentially, it’s intended for government employees and people who work for a 501(c)(3) nonprofit organization. There also are nonprofits that aren’t 501(c)(3) organizations that can qualify for PSLF—if their “primary purpose is to provide certain types of qualifying public services.”

   Aside from your employer, other employment-related details also may affect your eligibility—for example, whether you are working full or part time and if you are employed as a contractor. This is especially important for veterinarians working in academia or other sectors where their position may be funded in such a way that they are not technically classified as full-time employees.

2. Loan type. Only direct loans from the government qualify for PSLF. Private loans do not qualify. For example, direct loans that have been consolidated into private loans no longer qualify for PSLF. On the other hand, consolidating a nonqualifying loan, such as a Perkins loan, into a direct government loan will allow it to qualify from the time of consolidation.

3. Payment. The final requirement for PSLF eligibility is that you have made 120 on-time payments in a qualifying repayment plan. In general, this means an income-driven repayment plan (IDR). IDRs are repayment plans based on your income and family size. They’re especially useful for high-debt, low-income borrowers who are looking to make lower monthly payments than they would with a standard 10-year plan. If your debt isn’t repaid at the end of the plan term—that is, 20 or 25 years—the IDR will forgive the remaining balance, which will be taxed as income in the year it’s forgiven.

   An important note is that the required 120 payments do not need to be made consecutively. They do, however, need to be scheduled. That means you can’t accelerate payments, and over-paying won’t help you reach forgiveness faster. In fact, extra payments will only decrease the forgiven amount.

Working to preserve PSLF
Recently, PSLF has come under scrutiny, and concerns about its potential cost continue to be discussed by Congress. Adding to the uncertainty is the low approval rate—just over 1%—on the applications processed since 2017. For people who are counting on PSLF, we know that questions about its status and approval rating can be especially stressful. Among the questions we hear are whether PSLF will be “guaranteed” for existing borrowers and whether forgiveness amounts will be capped. We don’t yet have the answers, but when we do, we’ll make them available at avma.org/PSLF.

   If you were denied PSLF eligibility because you weren’t in the correct repayment plan, you may be eligible to receive funds under a Temporary Expanded Public Service Loan Forgiveness program. Learn more at studentaid.ed.gov.

Making PSLF work for you
You can only apply for PSLF after you’ve made 120 qualifying payments. But if you’re considering the program, there are things you can be doing now:

   • File an Employment Certification Form annually. This will help you (and the federal government) confirm that you meet PSLF employment criteria.
   • Anyone interested in PSLF should file this form every year. It’s the only PSLF-specific paper trail you’ll have on file with the government while you’re working toward forgiveness.
   • Recertify your IDR annually. Document every conversation you have with your loan servicer, including reference numbers or employee IDs for each call. Also, double-check any information or recommendation provided to you, and keep a spreadsheet of all your payment amounts with dates and confirmation numbers.

   Be informed and be prepared. It’s wise to have a backup plan in case PSLF doesn’t work for you. An income-driven repayment plan—which you may already be enrolled in if you’re working toward PSLF—can be a good option. Be sure to understand what this will look like if you need to use IDR—that it will affect your finances for a longer period and require saving for the added taxes that come with IDR’s forgiveness.

In conclusion
IDRs and PSLF both offer debt forgiveness, but they are very different programs. PSLF is not a loan repayment plan itself. You are required to make monthly payments through your IDR while you’re working toward PSLF. Here are a few more key distinctions:

• PSLF
  • Debt is forgiven after 120 qualifying payments, or 10 years if the payments are made consecutively.
  • Forgiveness is tax-free.
  • An Employer Certification Form is recommended annually.

• IDR
  • Debt is forgiven after 20 or 25 years, depending on the specific plan.
  • Forgiveness is taxed. Borrowers would have to plan for a potentially high tax bill in the year their debt balance is forgiven.
  • Recertification is required annually.

Matthew Salois, PhD, is chief economist and Veterinary Economics Division director at the AVMA.
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For more information on products mentioned in this ad, please see full prescribing information on page 28-29.
The dilemma

Marc Rosenberg, VMD

When medications go missing in a veterinary practice, this owner opts to watch a watchful eye in the form of video surveillance.

Three years ago, Dr. Jim Ray opened a veterinary clinic after working as an associate for eight years at a facility in the next town. His staff quickly grew from six to 17 in just 36 months.

That's when the trouble started. Dr. Ray's clinic administrator came to him with some troubling news: The drug inventory and controlled substances logs showed missing medications.

Dr. Ray was devastated. Police were brought in to investigate.

THE DILEMMA | Marc Rosenberg, VMD

Do cameras belong in a veterinary institution?
An investigation showed that Dr. Ray's security protocols were practical-ly nonexistent, and the police recom-mended he install a video surveillance system. After rummaging about what this would never have happened when his clinic was smaller and the staff more intimate, Dr. Ray installed cam-eras throughout the clinic.

The new cameras saw in light and dark and were triggered by motion, and they collected up to 30 days of footage. Dr. Ray sent a memo to all staff members informing them that the surveillance was now in place. He went on to say he was sorry he had to take these steps, but circumstances dictated that they were necessary. Finally, he at-tempted to lighten the mood by telling team members they should feel free to make faces at the camera. Nevertheless, several of the staff members were concerned. They told Dr. Ray that they were disappointed when he felt they couldn’t be trusted. In ad-dition, one of his staff doctors advised of a law that prohibited him from reading or recording any audio to the cameras captured. In his state, video surveillance in the workplace was legal with the permission of one party only, but audio recording was prohibited without the permission of all parties concerned. Furthermore, private areas such as restrooms and the break room were exempt.

Dr. Ray started to feel like his prac-tice growth was a double-edged sword. The intimate trust and collegiality of the small clinic had been replaced by the stricter workplace rules and regula-tions of a “bigger company.” Dr. Ray reluctantly adjusted to the changes. He wondered if he would ever be able to reestablish his small clinic feeling of intimacy now that his facility had grown larger. He knew the answer was a resounding “no.”

Do you agree with Dr. Ray’s choices? Have you had a similar experience? Let us know at dvmd360@mghgroup.com.

Dr. Rosenberg’s response
Small veterinary practices—like other “mom and pop” businesses—are shrinking in number. There are lots of reasons for this. Progressive veterinary technology is expensive. The internet, online pharmacies, increasing health-care costs and workers’ compensation premiums have all stressed small-prac-tice bottom lines.

In spite of all this, I agree with Dr. Ray’s choice to install cameras. Safety protocols and theft deterrents assist everyone. In addition, the practice leader or leader needs to be ethical, moral and honest role models. Coworkers are comforted when they can honestly respect practice leader-ship, and the collegiality that Dr. Ray had with a smaller team doesn’t have to disappear with an increase in staff. Over time, morale may even get better, with informal protocols and thought-less watercooler gossip replaced by interactions and procedures that everyone feels comfortable with.

Dr. Marc Rosenberg is director of the Voorhees Veterinary Center in Voor-hees, New Jersey. Although many of his scenarios in “The Dilemma” are based on real-life events, the veterinary prac-tices, doctors and employees described are fictitious.
8 steps in a practice sale

With consolidators and investors snapping up practices, owners who weren’t thinking of selling wonder if now’s the time. Here’s how the process works.

1. Initial outreach gets a practice owner thinking

Today, I rarely encounter a clinic partner or owner who hasn’t been contacted by somebody who wants to discuss acquisition. Sometimes these entreaties are rebuffed, but that contact can still start the owner’s gears turning. Even the attention of Dr. NeverSell will be, at least momentarily, drawn to outsized offers by corporate chains.

2. The sit-down may happen in secret

Not everybody who owns a practice is actively selling. But even the “extremely unlikely but marginally possible” potential seller may think, “What have I got to lose? It might be interesting to hear what that consolidator has in mind.” So there’s often an initial meeting—in secret at a coffee shop in a nearby town at a late hour.

3. A ‘letter of intent’ locks down confidentiality

Whether the suitor is a billion-dollar corporation or a pair of guys looking to get a better return on their IRAs, the deal is generally initiated with the drafting of a “letter of intent” (LOI), a document that describes the essential terms of a potential clinic purchase. LOIs generally mandate one or both of the following: (1) nondisclosure of the details of the deal, and (2) the obligation of the seller not to entertain other offers until expiration of the LOI.

5. The reveal must be managed well

Now the tough part: At some point, the clinic team needs to be told the hospital is being sold. The way this news is revealed can determine whether the practice sells or the buyer walks away—leaving behind a hospital whose earth has been scorched by an employer now perceived as having blindsided or sacrificed the interests of his dedicated team.

7. Contingencies cover what occurs after the sale

The LOI, the contract or both may contain pre-closing contingencies—specific requirements that must be met before closing occurs. One common contingency is that staff veterinarians must all sign commitments to remain with the practice for a minimum of (x) months after the closing. Another might be a requirement that the buyer be able to negotiate an acceptable lease for the use of the clinic property (either from the seller or from the seller’s landlord).

8. The closing can be anticlimactic

For anyone who’s bought a home, you likely remember that closing was a nerve-wracking and exciting time. Maybe you had a table with seller and buyer present, flanked by representatives of the seller, the buyer, one or more banks, a developer, a title insurer and more.

6. The contract is crucial to secure financing

Ordinarily, in the case of larger practice sales, a final, definitive contract is prepared (if not executed) before the actual closing of the sale. The main reason is the need to secure the money to buy the practice. A contract may be necessary before a funding source—bank, venture capitalist, the buyer’s Uncle Fred—will commit to providing the funds for acquisition.

4. Due diligence shows where the money’s at

If the deal survives the LOI process, there will be a far more specific set of terms set forth in a purchase-and-sale contract between buyer and seller. Regardless of whether the contract is signed shortly after finalization of the LOI or at closing (or any time between), the buyer must take a close look at the representations of the seller.

That’s how it works

Those are the relatively universal stages involved in the transformation of Dr. NeverSell into the wealthiest worker bee on staff at a veterinary practice he used to own. Clearly there are many moving parts: The order in which the steps are carried out, and the flow of information among all those affected, can make or break the outcome. It makes good sense, before moving forward, for a seller and a buyer to realistically assess whether the deal works emotionally, financially and practically in their individual circumstances. If so, then it’s game on!

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The most important things are simple—but they’re not easy

Meaningful personal and professional growth may come at a level that seems easy as pie. Like, so basic that surely the veterinary profession succeeds at it already. But no.

Well-being author and speaker Mike Robbins tells us that the advice we give others is often the exact advice we need ourselves. As the Sermon on the Mount admonishes, “First remove the log out of your own eye, then you can see clearly to remove the speck from your brother’s eye.” Sort of like, “People who live in glass houses…”

We all have the solution to our friends’ problems. So, here’s a thought: Maybe it’s time we all listen to our own advice rather than doling it out like Halloween candy.

I don’t know about you, but I struggle with seemingly universal issues. It isn’t easy. Maybe that’s why they’re called struggles. Relationships, truthfulness, tolerance, compassion … you get the idea. Where do you wish you could hold yourself to a higher ideal? In the quest to be your best, most amazing self, where would you want to dial up your effort just one more notch?

I think we can all grow by focusing on the simple and basic. For example:

**Be honest.** I know. We’re all honest, right? Then why is the world so full of doubt, mistrust and accusations? The more open and honest we are with ourselves and about ourselves, the less likely we are to be arrogant, judgmental, self-righteous or defensive about our own need for love and support—and the more likely we are to be compassionate toward others.

**Be compassionate.** We are all doing the best we can at any moment. Having compassion is really simple, but it’s not easy. Start by giving yourself a break. When we can get off our own back and forgive ourselves (not as easy as it sounds) then we are on the road to giving others that same gift.

**Stop fighting for perfection.** Perfection doesn’t exist. So, stop asking for perfection from yourself and others. We all screw up sometimes. Recognizing and accepting that is a first step toward acceptance in yourself and others. Turn down the heat under your burner and give yourself space to be you and impact others in a positive way.

Dr. Michael Paul is the former executive director of the Companion Animal Parasite Council and a former president of the American Animal Hospital Association. He is currently the principal of MAGPIE Veterinary Consulting. He is retired from practice and lives in Anguilla, British West Indies.
Let’s talk cannabidiol

CBD in practice comes with many questions and legal concerns. Here’s what you need to know.  

By Michael Petty, DVM, CVVP, CVMA, CCRT, CAAPM

The use of cannabidiol (CBD) for medical conditions in veterinary medicine—most commonly for pain, anxiety and epilepsy—seems to be the most talked-about area of medical therapy at the moment. And it’s no wonder: in a recent survey published in *Frontiers in Veterinary Science*, 29% of veterinarians reported they got a weekly inquiry about CBD from their clients. Twenty-seven percent were asked about it monthly and 7% were asked daily.

Yet the same survey showed that less than half of these veterinarians were comfortable talking to their clients about CBD products. Since then, the number of people asking about CBD products has probably grown exponentially, especially after hemp-derived CBD was removed from the Schedule I list in December 2018.

**What’s the big deal?**

First of all—and this is important—CBD products can come from either hemp or marijuana. Although they may look alike, those CBD products derived from marijuana are still Schedule I and illegal to use. In other words, they can put your DEA license at risk. (In California, veterinarians can legally discuss marijuana, but they can’t prescribe it or use it in treatment.)

Always ask for the source of the CBD (licensed hemp grower, not marijuana grower) before buying, dispensing or recommending a particular product, should you be inclined to do so. On the human side, dispensers of marijuana-derived CBD are being pursued aggressively in some states—most notably Texas, Ohio and Nebraska.

Federally, CBD oil from hemp with less than 0.3% 19-tetrahydrocannabinol (THC), the psychotropic part of marijuana (and possibly hemp as it contains small amounts), is legal. The real issue is that many states have not caught up with their own legislation regarding the use of CBD from hemp and some have been more aggressive in enforcing their laws than others.

On the human side, it’s usually OK to dispense CBD as long as it’s not dispensed as a drug, no medical claims are made and it’s not part of a dietary supplement or added to food. Of course, in some states, CBD from marijuana is a legal human drug. To make it more confusing, on the veterinary side, animal supplements are not regulated by the FDA, so there’s no prohibition on the federal level against using CBD as an animal supplement.

**Taking it state by state**

The following is a list provided to me by Stacey Evans, JD, an independent legal consultant who works with Elle-Vet (a provider of hemp products that contain CBD) and individual veterinarians. Note: When a state veterinary medical association (VMA) says CBD is illegal or cautions against its use, the association might be wrong. The issue of whether the CBD comes from hemp or marijuana has muddied the declarations of several state VMAs, as has the fact that many prefer to err on the side of caution. This list could change at any moment. Please contact your state VMA for any updates.

- **California VMA** cautions veterinarians against selling or administering hemp.
- **Michigan VMA** cautions that veterinarians face increased liability when CBD is used to treat animals.
- **Oregon VMA** states that it shares the FDA’s position on unapproved animal drugs.
- **Illinois VMA** provides an AVMA memo about not making any claims that CBD can treat, cure, prevent or mitigate a medical condition or disease.
- **Oklahoma VMA** states that although legal, veterinarians may face increased liability when CBD is used to treat animals.

Want to consider one more layer of legal confusion? A product that doesn’t make claims or intend to treat, mitigate or cure a medical condition doesn’t automatically become a drug if a client or a veterinarian administers the product to an animal to treat, mitigate or cure a medical condition. Nor is a product a drug just because it contains an ingredient, such as CBD, that’s also used in another FDA-approved drug. Such a product is an animal supplement, which the FDA does not regulate.

Once each state government actually passes legislation, most if not all legal issues should be resolved. My advice is to ask your state VMA to push for CBD legislation for animals so you don’t accidentally break the law during these confusing early days. And for the time being, to be safe, never ever make a claim that it can treat a medical condition or disease or use a product whose packaging makes such a claim.

Dr. Michael Petty owns Arbor Pointe Veterinary Hospital in Canton, Michigan.
‘She seems fine,’ but you see pain

There's a fine line to walk when talking about pets' discomfort without paining clients and, of course, yourself. **By Gina Singleton, DVM**

I saw a dog for a rabies vaccine in my clinic a while ago. When I walked into the exam room, I was smacked in the face with the smell of rot. I looked down and saw a tiny, gray, quivering poodle in a cheetah-print faux-fur sweater. One of her eyes was draining pus and her tongue was hanging out. Her owner picked her up, unfolded her legs like a picnic chair and placed her on the table.

“She gets stiff,” the owner explained.

The younger, politer version of myself would gently ask if she was on any medications or being treated for any health conditions. The current version of myself isn’t as mild: “Are you giving her anything for pain?”

I’ve found this to be an effective, time-saving phrase in my life. It might be a little blunt, but I’m done with the careful, don’t-want-to-hurt-anyone’s-feelings-or-god-forbid-make-a-client-upset approach to medicine. The bottom line: This poor dog was in pain and her owner was blind to it.

Her answer to my question? “No, she seems fine.”

Sigh.

So, we talked about pain in animals (not my best educational session, as it was the fourth exam that day) and afterwards, she left with the trembling poodle under her arm.

The following week, she returned with Poopsie, the poodle, as well as her daughter’s dog, Smoochie. She thought they both might be painful. Luckily for us, it was a morning appointment, so I had only talked about pain once that day. Poopsie and Smoochie both had a little bloodwork done and left with some meloxicam.

Hurrah! Relief of an animal suffering needless pain achieved!

As you can probably tell from my jaded tone, this whole scenario is causing me pain. There are many versions of this story:

- The fat, happy shepherd mix whose tail never stops wagging with stiffies that palpate like bubble wrap.
- The active young Lab who tore her cranial cruciate ligament six months ago and whose owner couldn’t afford surgery, but seemed dedicated to physical therapy and gabapentin.
- The active young Lab who tore her cranial cruciate ligament six months ago and whose owner couldn’t afford surgery, but seemed dedicated to physical therapy and gabapentin.

You can actually see the tibia sliding forward while she’s gimping across the room. You naively ask, “How are the meds going?”

“Oh, I stopped giving them,” her owner says. “She seems fine.”

I’ve come to realize that many owners define “fine” as eating, drinking, peeing, pooping and moving about in some fashion—in other words, still alive. And I know that it’s not helpful to be cranky about this, because I’ve had an excessive amount of education regarding animal health and owners haven’t. I know this.

However, is it crazy of me to assume that a human can make the mental leap that limping equals pain? When is the last time you limped when some part of you didn’t hurt? What creates this obstacle in the minds of otherwise intelligent people? Denial? Distraction? Just not thinking at all?

My favorite pain quote of all time: “We can’t take him for walks anymore because he’s too stiff, but we stopped giving him the Rimadyl ‘cause he seems fine.” (Another observation— somehow stiff does not equal pain.)

Educating clients about pain is tricky. If we’re too gentle, clients stay firm in their belief that the pet is fine. If we’re too firm, clients feel blamed or guilty and sometimes angry. You have to get it just right, and some days I don’t have the patience for perfection.

So, hopefully without being a total jerk, I’ve become content with my question—“What are you giving for pain?”—which is really a backhanded way of saying, “Your pet is in pain.”

However, if I have to be a jerk to help the poor Poopsies of the world, I guess I’m fine with that.

Gina Singleton is an associate veterinarian practicing at a small animal practice in Maine. If she had free time, she would love to make movies, travel the world and dance. For now she is devoted to being a mom, wife and vet.
Fun with feline flu: Can cats get influenza?

The short answer is ‘yes,’ and the long answer is ‘sort of’ and ‘it depends.’ What does that mean for you? By Jenifer Chatfield, DVM, DACZM

While influenza has been around since the 1500s, the virus caught the public’s attention in a new way recently when the pandemic of 2009 emerged (H1N1, anyone?). Prior to “swine ‘09,” bird flu was the big fear, giving us all a legitimate reason to look askance at seagulls and grackles, but interest seemed to fizzle after several years. Avian influenza is certainly still a threat, as we saw with the 2014-2015 highly pathogenic avian influenza (HPAI) outbreak that spread from the Pacific Northwest all the way to Iowa—still the largest foreign animal disease outbreak in the history of the United States. Moreover, a handful of people still die every year of avian influenza infections in Asia. And up until 2004, a coughing dog only meant an annoying bout with kennel cough was likely. These days that cough could be a sign of anything from Bordetella to influenza to the catchall canine infectious respiratory disease complex.

Cats and influenza
But what about cats? Can they get influenza? The short answer is “yes.” The long answer is “sort of” and “it depends.”
While there isn’t a specific “feline influenza” adapted for maintenance in feline populations, influenza in cats has been documented. For example, some domestic cats and their more glamorous cousins (i.e. cheetahs) were confirmed infected with the H1N1 strain in 2009.

The cheetahs were thought to have been infected by an animal park staff member who had flu-like symptoms for a couple of days before going home sick. This person had come into contact with the cheetahs’ food and environment but had not had direct contact with the cats themselves. Soon after, the cheetahs began exhibiting mild respiratory signs, including nasal and ocular discharge and lethargy—your basic influenza-like signs.

The infected domestic cats had also come into contact with infected humans and displayed similar nonspecific respiratory signs. While all four of the infected big cats survived, a handful of the domestic cats died. It does bear mentioning here that ferrets were also confirmed to be infected by the 2009 H1N1 strain during the outbreak. Ferrets are feline-adjacent, aren’t they?

Influenza in domestic animal species was monitored much more closely after the 2009 H1N1 pandemic. As canine influenza continued to spread across the United States, many pet owners began opting for vaccination to prevent illness in their dogs. And yet, despite being experimentally infected with the canine H3N8, cats were still not really addressed in either public messaging or by veterinarians at large.

Then a second novel canine influenza strain that had been circulating in Asia was identified in the United States: canine H3N2. The strain is more virulent in dogs and more easily transmitted among them than the original canine influenza, H3N8. Vaccines were quickly developed and implemented in areas experiencing outbreaks. But again, cats weren’t really a part of the conversation.

A whole new ballgame

Once cat-to-cat transmission of H3N2 was confirmed, however (albeit in a shelter environment), people started to wonder about cats and influenza more vocally. Then, a veterinarian working in a shelter (again, read: unnatural population density) in the Northeast was infected with an avian influenza virus, H7N2, and it turned out the cats in the shelter were the source. Not only were the cats able to transmit the flu to the humans, cat-to-cat transmission was also confirmed. This was a whole new ballgame.

While the “H” and the “N” may vary, the fundamental concept that cats are susceptible to influenza and that transmission between cats and other animals (including people) is possible remains constant. There is one vaccine currently labeled for use in cats to prevent them from becoming infected with canine H3N2. Another vaccine has recently been shown to be efficacious against H3N2 in cats, though it’s not labeled for use in the species. As the development of cross-protective immunity among similar strains of influenza is possible, the vaccine may be able to mitigate illness derived from other influenza strains.

It’s important to note that vaccination recommendations should be made using a risk-based assessment rather than relying on blanket statements (e.g. “All cats should be vaccinated”). Understanding the mechanisms of transmission of infectious diseases combined with a patient’s and owner’s lifestyle are key to an accurate recommendation.

Is it time to fret about feline flu?

Do veterinarians need to practice saying “feline flu” five times fast without spitting? In my opinion, not yet. As far as we know, felids don’t yet have an influenza that is endemic or maintained among cats. However, given how adaptable influenza is and how mobile humans continue to be, it seems inevitable that a feline influenza strain will appear in the future. That said, if I could predict the future, I would currently be in Las Vegas diversifying my income.

Bottom line, I implore all practitioners to talk to their clients about the real threat of influenza to people and their animals and to make appropriate risk assessments based on what we know—namely, that influenza is easily transmitted, that it sheds prior to the onset of clinical signs and that it can be prevented or the course of disease mitigated through vaccination.

References


Dr. Jenifer Chatfield is staff veterinarian at 4F Conservation Center in Pasco, Florida, as well as an instructor for federal disaster management courses and a regional commander for the National Disaster Medicine System Team. She has also chaired the Florida Veterinary Medical Association’s One Health Committee and co-chaired its Disaster Response Committee.
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Pinch and flush: Relieving urethral obstructions in male dogs

By pinching the penis and flushing the urethra—plus a few more steps—you can relieve painful obstructions and avoid complicated surgical procedures. By Andrew Jackson, DVM, DACVS.

Urethral obstructions in male dogs are common in veterinary practice. These obstructions can be difficult to relieve, and many patients are referred to emergency/specialty hospitals still obstructed. It doesn’t have to be this way! With a few precise but straightforward steps, general practitioners can relieve most urethral obstructions with minimal fuss to the patient.

Background and diagnostic steps
Canine urethral obstruction is almost always due to urolithiasis. In most cases, the objective of treatment is to relieve the obstruction via retropulsion and extract the urolith via cystotomy. Urethrotomy can result in urine leakage into soft tissues, stricture, persistent hemorrhage and infection, both perioperatively and long-term, and should therefore be avoided. Scrotal urethrostomy, while more invasive than most patients need, may be appropriate in certain breeds (such as Dalmatians) or in dogs with multiple obstructions. It may also be a better long-term solution in cases of multiple urethral blockages.

Still, almost all urethral obstructions can be relieved and converted to a cystotomy procedure if appropriate treatment is provided. When a dog presents with urethral obstruction, the veterinary team should immediately be aware that this is a painful condition. It’s important to consider pain relief medications right away and understand that general anesthesia will be completed to relieve the obstruction. Also, every urethral obstruction should be treated as an emergency because it can lead to urinary bladder rupture.

First, conduct a thorough physical examination, obtain a complete blood count with serum chemistry profile and urinalysis with culture, and take a set of radiographs. When you perform lateral abdominal radiography, be sure to capture the entire rear end of the dog so you can evaluate the entire
urethra. In addition, take lateral radiographs with normal limb positioning and also with rear limbs pulled forward to help visualize the perineal urethra.

Also note that these dogs can be azotemic and will need appropriate therapy. In addition, hypercalcemia may be present, which will typically require further diagnostic tests, such as a parathyroid panel.

The pinch-and-flush procedure

General anesthesia with intubation, although it might not seem necessary, is always recommended because it eases passage of the obstruction and relieves discomfort. When the dog is asleep and relaxed and the airway is protected, you should be able to relieve the obstruction more easily. Give a premedication of a narcotic and sedative (e.g. hydromorphone and acepromazine) before inducing anesthesia.

Now the dog is ready for retroplulsion of urethral stones. Remember that the premise of this procedure is to flush the stones into the bladder, not to push the stones into the bladder with the catheter. I recommend that three people be involved when available: one person is on the catheter, one person is flushing and one person is rectally occluding the urethra. See Figure 1 (page M4) for a review of canine anatomy relevant to this procedure.

Here are the procedure steps:

1. Select an appropriately sized red rubber catheter and a 60- or 30-ml catheter-tip syringe depending on the size of the dog. Prefill the syringes with sterile saline or a 50-50 mix of saline and sterile lubricant mixed vigorously.
2. Place the catheter at the level of the obstruction or just distal to it, adhering strictly to sterile technique.
3. Have a gloved assistant place a finger rectally and compress the urethra onto the floor of the pelvis (Figures 2A-2C).
4. Attach the saline-filled syringe to the red rubber catheter. Lube can be added to the saline for additional viscosity if needed.
5. Pinch the tip of the penis to make sure the urethra is distending while flushing 5 to 10 ml saline into the distal urethra via the catheter.
6. With the urethra distended with saline, double-check that the assistant is detecting pressure rectally while still compressing the urethra. The urethra will be taut and distended distally to the rectal compression.
7. As a timed procedure—for example, on the count of three—release the rectal urethral compression and flush the saline with pressure at the exact same moment (Figure 3). Most obstructions will be relieved with one or two attempts.
8. Confirm retroplulsion of the stones with radiographs.

If the blockage doesn’t budge

If this procedure doesn’t work and you can’t pass a catheter, check the urinary bladder. If the bladder is distended, relieve pressure by manual expression or cystocentesis. Then create a 50-50 mix of saline and sterile lubricant mixed vigorously to increase the viscosity of the flush. The increased viscosity of this solution helps to increase the resistance and help with retroplulsion.

If the obstruction is still not relieved, the next option to try is epidural anesthesia. Typically, placing a preservative-free morphine epidural is enough to help in this situation; bupivacaine can potentially be added for increased muscle relaxation. Repeat retroplulsion as needed to relieve the obstruction.

This procedure should relieve almost all obstructions. If the obstruction is not addressed with retroplulsion, you may need to perform a urethrotomy or urethrostomy. If the dog needs to be referred, perform a temporary cystocentesis first.

Conclusion

In surgery, avoiding complications is highly desirable. Cystotomy is associated with far fewer complications than urethrotomy or urethrostomy. Retropulsion of urethral calculi causing urethral obstruction accomplishes this goal and is a highly successful procedure when completed correctly. Relieving the obstruction with minimal inflammation and irritation means fewer attempts at catheterization. If you follow these steps to “pinch and flush,” you should successfully relieve the obstruction with only a few attempts.

Surgery STAT is a collaborative column between the American College of Veterinary Surgeons (ACVS) and dvm360 magazine. To locate a diplomate, visit ACVS online directory, which includes practice setting, species emphasis and research interests, at acvs.org.
While acepromazine may make patients more tractable in the clinic, it’s likely doing nothing to reduce their anxiety.

**Question: Why shouldn’t acepromazine be a go-to sedative to help manage fear aggression in dogs during physical examinations? Which medications are good alternatives to consider?**

**Answer:** Psychopharmacology can be a confusing and overwhelming subject in veterinary medicine, in large part due to the wide individual variation in observable effects and the overlap in clinical applications. Another factor is the current paradigm shift from drugs that simply produce behavioral suppression and decreased motor activity to those that have antianxiety properties as well.

Acepromazine is an antipsychotic, a class of drugs originally used to treat psychoses such as schizophrenia in humans by blocking the action of dopamine, a catecholamine neurotransmitter. More specifically, acepromazine is a low-potency phenothiazine neuroleptic drug and, like most of the older antipsychotics used in veterinary medicine (including haloperidol and fluphenazine as well as acepromazine), it blocks all the dopamine pathways responsible for cognition, motivation and motor coordination. Acepromazine affects other physiologic systems as well and can cause cardiovascular, motor and endocrine side effects.

Though acepromazine is generally safe and can ease handling by blunting behavioral responses, it has fallen out of favor, especially as an oral monotherapy, due to numerous reports of sedation without acceptable reduction in signs of fear or anxiety.

So, to answer the specific question about the use of acepromazine to manage fear-related aggression, acepromazine may make the animal more tractable for handling, but it’s unlikely to be addressing the underlying fear. Other medications such as benzodiazepines, gabapentin, the atypical antidepressant trazodone, and norepinephrine release blockers like dexmedetomidine are more likely to create emotional calmness (again, primarily based on body language assessment) with or without sedation.

My clients and consulting general practitioners are looking for the silver bullet to help make visits go more smoothly. Unfortunately, fast-acting situational oral drugs can have variable effects due to several factors. Most of these drugs have reduced bioavailability compared to other administration routes due to the hepatic first pass effect. In addition, many of our patients are experiencing an extreme level of distress during the average clinic visit, and single administration of most of these medications is simply not effective in the face of such acute physiologic arousal.

In my practice, once we’ve identified a fearful patient, I have the clients conduct a trial of two to three medications at home—usually some combination of those discussed above. We monitor for gastrointestinal or agitation side effects and adjust doses until we reach the desired clinic effect with few to no side effects. Acepromazine may be one of the medications we use in the cocktail, but that is rare these days.

For most of my aggressive patients, the goal of client-administered pre-visit medications is to produce enough sedation and relaxation to allow the team to administer a low-stress intramuscular injection of additional medications for a more thorough physical exam or other procedures. However, occasionally we feel the patient is comfortable enough to continue our visit with just the oral medications.

Either way, when the patient is calm in the veterinary clinic—and not just still—the team can do what it needs to do to optimize physical health without harming emotional well-being. And everyone feels better about that.

Dr. Julia Albright is assistant professor of veterinary behavior and PetSafe Chair of Small Animal Behavioral Research at the University of Tennessee’s College of Veterinary Medicine.

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**Is ace not so ace for examining patients with fear aggression?**

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Do we really know what we think we know about feline CKD?

One study lays out all the elements of this common condition in cats. By Hilal Dogan, BVSc, CCTP

Chronic kidney disease (CKD) is the most common metabolic disease of domesticated cats presented to veterinarians for evaluation. A recent journal article evaluates our current knowledge of feline CKD, discussing pathogenesis, initiation factors and progression factors. The study involved a retrospective evaluation of scientific data available from both human and veterinary medicine.

How common is CKD?
Two consistent trends on the prevalence of CKD in cats have been identified: (1) The prevalence of CKD increases with advancing age from 5 to 6 years onward, and (2) overall prevalence of CKD in cats increased from 0.4% in the 1980s to 0.2% in the 1990s to 1% in the 2000s. It’s unknown whether this increase reflects greater awareness and enhanced diagnostic acumen, an increase in median age in cat populations or a true increase in prevalence.

Pathologic findings
Most geriatric cats with CKD don’t have histologic evidence of primary glomerular disease. Instead they have tubulointerstitial lesions with only mild secondary lesions within glomeruli.

Grossly, kidneys are decreased in size with surface pitting. Histologically, renal lesions are multifocal to segmental and include interstitial mononuclear cell infiltration, tubular degeneration and atrophy, interstitial fibrosis, mineralization of Bowman’s capsule and tubular basement membranes, interstitial lipid, and glomerulosclerosis. The inflammatory infiltrate typically consists of lymphocytes, which may be mixed with plasma cells and macrophages; they are typically present in the interstitium surrounding atrophic tubules.

Pathogenesis
Chronic primary renal diseases found to cause CKD in cats include:

- Amyloidosis
- Juvenile renal dysplasia or glomerulonephritis
- Lymphoma
- Chronic feeding of unbalanced diets
- Polycystic kidney disease
- Bacterial pyelonephritis
- Nephro- and ureterolithiasis
- Chronic infection of feline immunodeficiency virus, feline leukemia virus or feline infectious peritonitis
- Intra-glomerular glomerulonephritis
- Acute kidney injury

Factors associated with the onset of CKD include:

- Aging. An abundance of evidence supports a link, perhaps causal, between aging and feline CKD. Aging itself does not initiate CKD, but it’s plausible that age-associated changes enhance susceptibility to CKD development. These may include diseases that are more common in older cats, such as hyperthyroidism, dental disease, systemic hypertension and inflammatory bowel disease (IBD).

- Hyperthyroidism. Convincing evidence is lacking, as most cats with CKD do not have overt hyperthyroidism. Consequences of hyperperfusion and direct effects of thyroid hormone on feline tubular cells are also not well understood.

- Periodontal disease. This is a complex, possibly bidirectional relationship, but there is more evidence in people and dogs than in cats.

- Systemic hypertension. While this condition is common in cats with CKD, it’s not clear if it precedes or is coincident with CKD initiation.

- IBD. This is an interesting but unsubstantiated hypothesis. People with IBD may exhibit tubular dysfunction. Other initiating factors include hyperparathyroidism and other AKI. There is evidence that AKI, specifically ischemic, initiates changes that mimic CKD in cats, consistent with the suggestion that maladaptive repair mechanisms following an AKI can lead to CKD.

Husbandry factors discussed in conjunction with CKD include:

- Ad lib feeding or high-protein diets—there’s a lack of supportive evidence.
- Food additives such as ethoxyquin or genetically modified plants also lack real evidence.
- Glucosamine, a herbicide, has some evidence of toxic renal effects, but the authors were unaware of studies in cats.
- Routine vaccinations have been hypothesized to be an initiating factor, but further studies are needed.
- Chronic stress due to confinement, cofeeding, litterbox sharing and living with other animals might lead to chronic overactivation of the hypothalamic-pituitary-adrenal (HPA) axis.
- Renal injury could be an initiating factor—potential causes are stress, aging, ischemia as a result of tubular hypermetabolism, anemia, transient systemic hypotension, systemic overactivity or activation of the renin-angiotensin-aldosterone system (RAAS), and subclinical exposure to compounds with effects on renal vasculature (NSAIDs or melatonin).

Progression factors
It’s assumed that CKD is an inherently progressive disease, but this is difficult to demonstrate in lab models. Several factors have been associated with progression of feline CKD:

- Phosphorus intake
- Proteinuria
- Anemia
- Systemic hypertension
- Intraglomerular hypertension
- Activation of the RAAS
- Sodium intake
- Tubular hypoxia
- Interstitial fibrosis.

Take-home points
This was an interesting review of an incredibly common disease with many moving parts. It’s important to be reminded that cats are different from dogs and people and that the disease affects tubules in cats versus glomeruli in dogs and humans. Also, it’s important to remember that CKD is not just one or two insults to the kidney; it’s a combination of factors that form a cascade—almost like a domino effect.

Reference

Dr. Hilal Dogan practices in Denver, Colorado. She is the founder of the Veterinary Confederations Project.
Banfield develops telehealth service

Jane Lynch has signed on to speak for the new on-demand platform. By Brendan Howard

Banfield has introduced a telehealth service, Vet Chat, to the smartphone app designed for pet owners on their wellness plans. What’s more, actress Jane Lynch has signed on to help warn people about the dangers of seeking advice about their pets’ health from the internet.

“Vet Chat gives Banfield Optimum Wellness Plan clients on-demand access to a veterinarian, through the Banfield app, for immediate guidance,” reads the new service’s FAQ.

The website goes on to explain exactly what the veterinarians on the service can and will do (it’s less than what other telemedicine apps operating under established veterinarian-client-patient relationships do): “Vet Chat doctors do not have access to pet medical records and do not treat, diagnose, prognose or prescribe/refill. They limit their interactions to general advice and recommending one of these next steps: refer to Banfield for an in-person visit, watch and wait, general information and refer to emergency.”

That makes Vet Chat similar to other telemedicine triage services available to private practitioners, like Guardian-Vets, but unlike Anipanion, Petzam, TeleTails and TeleVet, which let practices directly manage cases virtually.

Jane Lynch, a dog-owning celebrity who supports pet causes, is helping Banfield raise awareness of the dangers of turning to the internet with pet health issues instead of seeking counsel from a veterinarian.

“As the proud owner of three rescue pups, I am all too familiar with the sounds of a dog vomiting at 3 in the morning—and the comfort and peace of mind that comes with having a veterinary team I can count on,” says Lynch in a Banfield press release.

Banfield’s app is not a way not to circumvent veterinary visits, the company says, but a method to counter bad pet health advice online and help folks figure out if they need to come in.

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A few of the big pet microchip companies provided dvm360 with details about their current products. Curious if there’s any reason to switch your choice? Check ‘em out! *By Brendan Howard*

Some veterinary practices implant very few microchips and leave it all to rescue groups and animal shelters. Other hospitals use the, as a part of their packages for new adoptions, puppies and kittens. Whichever way your hospital swings, here are a few details on players in the market to compare ...

### Veterinary microchips for pets

<table>
<thead>
<tr>
<th>Microchip</th>
<th>Website</th>
<th>Price to veterinarian</th>
<th>Price to register chip</th>
<th>Designated code</th>
<th>Additional services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AKC Reunite</strong></td>
<td>akcreunite.com</td>
<td>Varies according to number of chips or whether they’re bundled with a scanner</td>
<td>Free registration and updates; other chips: $17.50</td>
<td>956</td>
<td>24/7/365 call center; calls, emails, texts and/or snail mail to contact lost pet owners; broadcasts lost pet info to Reunited Network</td>
</tr>
<tr>
<td><strong>BuddyID Minichip</strong></td>
<td>buddyid.com</td>
<td>Free with registration</td>
<td>One-time $24.95</td>
<td>933</td>
<td>Lifetime warranty; nationwide search alerts; mobile app; text alerts; direct-to-owner lost pet recovery</td>
</tr>
<tr>
<td><strong>HomeAgain</strong></td>
<td></td>
<td>Free with registration</td>
<td>$19.99 lifetime registration (includes lifetime profile updates)</td>
<td>985</td>
<td>Enhanced pet recovery; emergency medical hotline</td>
</tr>
<tr>
<td><strong>PetLink</strong></td>
<td>petlink.com</td>
<td>$15.50</td>
<td>Free registration for chips sold to veterinarians</td>
<td>981</td>
<td>24/7/365 U.S.-based call center; lost pet posters for print; library of resources; lunch-and-learn training for veterinary clients available</td>
</tr>
<tr>
<td><strong>SmartTag</strong></td>
<td>idtag.com</td>
<td>Data $8.50, Mini Data $9</td>
<td>Free</td>
<td>987</td>
<td>24/7/365 call center; lost pet broadcast alerts; metal (RF) tag; smaller-gauge Mini Data chips, temperature-reading chips</td>
</tr>
</tbody>
</table>

Source: Companies self-reported
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When to REACT: Colic in horses

Check out this British-developed acronym you can use to educate your equine clients on signs of colic in a horse. It could just lead to a better-informed, faster-responding and quicker-calling clientele.  By Ericka Cherry, Jennifer Vossman, RVT, CMP
Not all horses with colic present telltale signs of the disease (pawing the ground, kicking at the belly and rolling) but more subtle signs that can often be attributed to another issue. Colic can be more complicated than veterinary clients think, according to Sarah Freeman, BVetMed, PhD, DECVS, FHEA, FRCS, who presented a session to veterinarians on better colic education for horse owners at the West Indies Veterinary Conference hosted by Ross University School of Veterinary Medicine last year. Dr. Freeman worked in collaboration with the British Horse Society and a group she leads—the Nottingham Equine Colic Project.

This evidence-based equine health initiative helps horse owners recognize colic in their horses earlier, so they can contact their veterinarians sooner. According to the British Horse Society's website, one in 10 colic cases may be critical and up to 80% of these critical cases can result in death or euthanasia.

REACT is an acronym-centered marketing effort to reduce the instance of critical cases by highlighting the early signs of the disease. Videos, handouts and educational material shares jargon-free language on colic signs like this:

**Tired or lethargic**
- Lying down more
- Lowered head position
- Dull and depressed

**Get more on colic and other conditions**
Dig deeper into the British Horse Society’s website on the topic, and you’ll find resources including:
- “REACT Now to Beat Colic,” a free video for horse owners
- “REACT to Colic,” a longer version of the video
- More than a dozen PDF handouts related to colic, including “Recognizing the signs of colic,” “Emergency decision making” and “Waiting for the vet to arrive.” See a sample on the opposing page of one of the handouts.

With these resources literally at horse owners’ fingertips, the chances of them catching colic sooner and quickly contacting veterinarians for solutions is better than ever. Find them all at dvm360.com/react.

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The dental dozen: 12 products that improve oral health

Here are some of my favorite products that are making it easier for clients and veterinary practices to improve the oral health and well-being of cats and dogs. By Jan Bellows, DVM, DAVDC, DABVP, FAVD

More and more veterinary clients are realizing the importance of pet dental health, and the industry is responding with products that offer more effective home care and enable veterinarians to perform dental procedures more accurately and efficiently. From dental chews to surgical instruments to anesthesia monitors, here are some of the latest and greatest dental products to have hit the market.

1. Digital sensor

New from Dentalaire is a sensor boot for the Dentalaire intraoral digital sensor. This boot helps place the sensor in the mouth more easily and provides added protection against bite trauma.

2. Mouth prop

Also from Dentalaire is an autoclavable mouth prop, available in small, medium and large sizes.

3. Dental chew

Working with a boarded veterinary nutritionist and a boarded dentist, Pets Best Life has introduced a new dental chew. Yummy Combs has a patented six-sided honeycomb shape to get between close teeth and aid oral hygiene.

4. Dental chew

New from Virbac, C.E.T. Veggiedent Fr3sh Tartar Control Chews for Dogs have earned the Veterinary Oral Health Council Seal of Acceptance. These vegetable-based chews offer the added benefit of decreasing oral malodor. They contain no animal proteins and are available in four sizes.
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Contact our SVP of Retail to learn more about how you can partake in these programs: Wayne Bennett | (440) 528-4213 | WBennett@ECRM.MarketGate.com

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5. Warming blanket

Hot Dog warming blankets now offer a dual-port controller that allows for warming two patients at the same time using a single controller. Safe, effective, durable and reusable, these warming blankets are clinically proven to be more effective than competitive products.

6. Hot air warmer

Bair Hugger Warming Unit Model 675 from 3M incorporates updated software that accurately reflects the temperature at the end of the hose and displays on the LCD screen. The product is compatible with all Bair Hugger blanket styles.

7. Digital sensor

Midmark has introduced the first and only veterinary-specific, bite-resistant intraoral digital sensor with patented sensor housing to provide clear, crisp images that resist bite damage four times as well as the company’s standard sensor. Midmark also provides free unlimited technical support and software upgrades for the life of the sensor.

8. Capnograph

Rad-97 with NomoLine Capnography from Masimo features an integrated sidestream gas analyzer for capnography, meeting continuous pulse carbon dioxide—oximetry and capnography needs in a single device with numeric, trend and waveform viewing options as well as fractional concentration of inspired carbon dioxide and respiration rate.

9. Endodontic motor

X-Smart IQ from Dentsply Sirona is a cordless endodontic motor controlled by a free Apple iOS IQ app. The monitor offers ease of use, virtually unbreakable NiTi rotary files tailor-made for dogs and cats, and the automatic reverse feature when a file binds. X-Smart IQ is a complete solution when shaping a root canal before cleaning and filling.

10. Physiologic monitor

Digicare’s LifeWindow One is a multiparameter portable physiologic monitor engineered for veterinary anesthesia. Compact and user-friendly, LifeWindow offers optional Wi-Fi connectivity to allow users to connect to the product’s iPad app for full control of the monitor, waveform display, printing and saving waveforms and patient records.

11. Periotome

Vet-Tome from iM3 is an automated periotome with foot pedal operation that facilitates precise tooth extraction with minimal or no alveolar bone loss and less trauma. The mechanical action and thin flexible blade allow easy insertion into the periodontal ligament space and alveolus coupled with the side-to-side movement by the operator cutting the ligament. The Vet-Tome decreases hand fatigue and speeds extraction time.

12. Catheter delivery system

Coltene’s upgraded catheter delivery system delivers GuttaFlow to the apex of the cleaned root canal and can be cut to customize the length.
Medical Illumination International

Air purification unit

Medical Illumination recently announced that it has completed its acquisition of the Vidashield product line from American Green Technology, including the UV24 Air Purification System. Built in the casing of a standard-size overhead light fixture (fluorescent or LED), the UV24 unit provides fast, continuous air purification that reduces bacteria, viruses and fungi in treated air without taking up floor or counter space. It also reduces the settling of airborne pathogens onto surfaces while reducing odors caused by bacteria and fungi. A single UV24 air purification unit can treat a volume of air equivalent to a room measuring 10 by 10 by 8 feet four times per hour. For fastest response visit medillum.com

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Flexprofen is a generic, beef-flavored chewable tablet that contains carprofen, a widely used, clinically proven nonsteroidal anti-inflammatory drug (NSAID) for dogs. The product is comparable to the leading brand name carprofen chews that address symptoms of pain and inflammation typically associated with osteoarthritis. Flexprofen can also be used to treat dogs with postoperative pain resulting from soft-tissue and orthopedic surgeries. Flexprofen is available in 25-, 75- and 100-mg sizes in 180-count bottles. For fastest response visit vetoquinolusa.com/flexprofen

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Smith Veterinary Consulting and Publishing

Book for relief, part-time work

The fifth edition of FlexVet: How to Be One, How to Hire One, by Carin Smith, DVM, and Cindy Trice, DVM, is a practical guide for relief and part-time veterinarians. The book covers a wide range of resources to help practices as well as part-time and relief veterinarians navigate the business intricacies of flexible work. The 2019 edition includes updates on taxes, insurance and online resources. Other topics include choosing the right type of veterinarian for your practice, business plans, budgeting, marketing, social media and sample contracts and letters. For fastest response visit smithvet.com

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(605) 688-6669
dsdvetmed.org

August 20-23
HospitalDesign360 Conference
Kansas City, MO
(800) 255-6864, ext. 6
fetchdvm360.com/hd

August 21-24
Uncharted Veterinary Conference: Staff Drama
Kansas City, MO
unchartedvet.com

August 23-26
Fetch dvm360 in Kansas City
(800) 255-6864, ext. 6
fetchdvm360.com/kc

September 2-5
2019 ACVS Veterinary Conference
Las Vegas, NV
(609) 325-4915
acvc.org

September 12-13
Colorado VMA CE Southwest
Durango, CO
(303) 318-0447
colavma.org

September 15-18
119th Penn Annual VMA Convention 2019
Philadelphia, PA
(215) 746-2421
vet.upenn.edu/education

October 4-6
2019 New York State Veterinary Conference
Ithaca, NY
cvent.me/xxKg

October 14-17
The Atlantic Coast Veterinary Conference
Atlantic City, NJ
(609) 325-4915
acvc.org

October 17-19
2019 ACVS Surgery Summit
Las Vegas, NV
(303) 916-0200
acvsurgerysummit.org

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

I got a lot of great qualities from Joe Benny Brock, but I’m glad one small fear of his didn’t get passed on in the genes.

Joe Benny Brock. Most everyone called him Joe Benny, but I called him “Daddy.”

He was a big man, 6 feet, 4 inches tall and about 250 pounds. But his size is not what defined him—it was his smile. When he truly smiled, his face changed completely. It was like his forehead got longer and his hairline moved back and away from his eyes. I have never seen a more amazing smile in my life. I loved that man, he took care of me, and I was his pride and joy.

We were a lot alike in many ways, but there are some things I got from my momma, and the “doctor” gene obviously came from her. Want to know how I know this? Well, here’s the story.

When I was about 5 years old, we were at some occasion that brought about 60 family members to a farmhouse in the middle of nowhere. There was one batch of kids about my age I’d never seen. We were all out in the yard playing when a big German shepherd-looking dog came wandering onto the scene, seemingly full of bad intent.

Joe Benny was in the yard, and when he saw the animal and read its body language, he started rounding us all up and heading into the house. But instead of heading inside one little girl wouldn’t listen. She ran toward that rascal, and it bit a chunk out of her shoulder. Joe Benny was screaming and making noise at the top of his lungs, trying to scare off the dog and slow the little girl down, but it didn’t work. The damage was done, and now the child needed a trip to the doctor.

Looking back on it now, I’m not sure why they took me along, but they did. The girl was bleeding and crying, sitting in the back seat of a Dodge station wagon with her parents, while I sat in my momma’s lap in the passenger seat and my daddy drove. (We didn’t know what a car seat was back then.)

We wound up at an old-timey doctor’s office that smelled like alcohol and sick people. They took us all into the treatment room, and we waited awhile for the doctor. I remember seeing all that blood and I still hear her crying like it was yesterday.

The room we were in was green—man, it was green. It had green asbestos tiles on the floor, the walls were a lighter shade of green, and even the old heater thing next to the wall was painted green. There were two chairs along one wall and one of those hard doctor beds with a piece of white paper pulled down over it in the center of the room. The girl’s father was in one chair, while I was in my momma’s lap on the other. The girl’s mother was standing next to the doctor table, consoling her daughter with a nurse, and Joe Benny was perched in the window seat next to her looking a bit pale.

The doctor finally arrived and assessed the bite wound. He explained some things in grown-up talk to the parents and then told the nurse to prepare things to sew up the wound. I looked over and saw Joe Benny rub his face and noticed a bit of sweat forming on that forehead that expressed so much of his emotion.

The next few minutes were amazing to me, and I still remember them vividly 50 years later. First of all, looking back, how in the world was it all right for a little kid to be in the room to watch an arm sewing? Next, why did we take her to a doctor’s office instead of an emergency room? And then, why was Joe Benny sitting so far away from the action?

There was a lot of screaming and crying as the doctor injected a local anesthetic before he sanitized and sutured. Then the sewing started. The crying and screaming had stopped, and I was enthralled as I watched the needle moving. It was just like my grandmother’s sewing when she was making quilts in the den. I couldn’t believe they did the same thing to skin.

Then about halfway through the sewing, I heard a thud behind me. My daddy was bent in two over the room’s green heater. His hands were lying limp on the floor, and his feet weren’t even touching the ground. It was like he’d suddenly fallen asleep, like a little kid in his high chair.

My momma screeched and put me on the floor as she scrambled across the room to assist him. The nurse left the doctor’s side to check on him. I crawled back up into the chair and watched with great anticipation to find out why everyone was so concerned that my daddy had fallen asleep.

It was several years later that I finally laughed about this. And I still laugh. In fact, I’m cracking up as I write this. My dad, all 6-foot-4 of him, couldn’t stand the sight of blood. He passed out in a doctor’s office, draped over an old-timey heater like laundry on a West Texas clothesline. He never did admit it, though. He always claimed it was because he hadn’t eaten all day and was low on glucose.

I hope and pray that I got that man’s sense of humor, compassion, wonderful smile and amazing intelligence, but I’m so glad I didn’t get his weak stomach for sewing up tissue. I miss you, Joe Benny.

My momma reminded me of this story on the phone recently. We laughed and laughed and then laughed some more. Thank you, momma. Made my day.

Bo Brock, DVM, owns Brock Veterinary Clinic in Lamesa, Texas. His latest book is Crowded in the Middle of Nowhere: Tales of Humor and Healing From Rural America.
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