The team approach to veterinary telemedicine

Using telehealth can maximize staff efficiency, provide clients with face-to-face care, and increase practice revenue. Here’s a look at the role technicians can and should play in providing virtual care.

By Rebecca A. Packer, MS, DVM, DACVIM (Neurology/Neurosurgery)

As veterinarians—particularly during a pandemic—we are often pulled in many directions. Additionally, where curbside service is being practiced, pet owners may feel disconnected from their veterinarian. The good news, according to experts at the inaugural Veterinary Virtual Care Summit (VCCS) held in August, is that virtual care can be very effective in maintaining that connection with clients. It can also have significant benefits for your practice.

Most veterinarians already offer some form of virtual care for patients with an established veterinarian-client-patient relationship (VCPR). We provide follow-up advice or modify treatment plans based on phone conversations, prescribe and approve medication refills—the list.

By Darby A. Affeldt, DVM, RICP

How the veterinary practice retirement plan just got a lot cooler

Have you heard about the newest option for employer-sponsored retirement plans? A 401(k) pooled employer plan may give your veterinary practice lower fees, fewer fiduciary risks, and greater flexibility than ever.

By Darby Affeldt, DVM, RICP

Surgery: Removing linear foreign bodies in dogs

Infectious disease: Respiratory disease in animal shelters

Rehabilitation: Therapeutic exercises for every patient

Dentistry: When dental treatment just can’t wait

See page 26
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*For puppies 6 weeks of age or older.
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Efficacy: HEARTGARD Plus Chewables, given orally using the recommended dose and regimen, are effective against the tissue larval stage of HEARTGARD Plus is not effective for microfilariae clearance. A mild hypersensitivity-type reaction, presumably due to dead or dying microfilariae and particularly involving a transient diarrhea, has been observed in clinical trials with ivermectin alone after treatment of some dogs that have circulating microfilariae.

Keep this and all drugs out of the reach of children. In case of ingestion by humans, clients should be advised to contact a physician immediately. Physicians may contact a Poison Control Center for advice concerning cases of ingestion by humans. Store between 68°F - 77°F (20°C - 25°C) and exclude from light. Protect product from light.

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To report suspected adverse drug events, for technical assistance, or to obtain a copy of the Safety Data Sheet (SDS), contact Boehringer Ingelheim Animal Health USA Inc at 1-888-637-4251. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-800-FDA-VETS, or online at http://www.fda.gov/AnimalVeterinary/SafetyHealth. The purpose of this publication is to benefit patients, clients, and veterinary practices by improving communication about the value of preventive care.

Preventive Care Protocols and Practice Economics
Preventive Care Protocols: Evidence, Enactment and Economics (2018) and Implementing Preventive Care Protocols (2019), offering practical ideas, pricing guidelines, and client communication strategies to help increase compliance with preventive care recommendations. The publication also includes tips from veterinary practices that have implemented these strategies successfully.

Implementing Preventive Care Protocols: Evidence, Enactment and Economics (2018) and "Implementing Preventive Care Protocols (2019), offering practical ideas, pricing guidelines, and client communication strategies to help increase compliance with preventive care recommendations. The publication also includes tips from veterinary practices that have implemented these strategies successfully.

The goal of AAHA's newest offering, which was supported by an educational grant from Idexx, is to educate veterinarians about business opportunities related to preventive care testing. It builds on the organization's previous 2 publications, “Promoting Preventive Care Protocols: Evidence, Enactment and Economics” (2018) and “Implementing Preventive Care Protocols” (2019), offering practical ideas, pricing guidelines, and client communication strategies to help increase compliance with preventive care recommendations. The publication also includes tips from veterinary practices that have implemented these strategies successfully.

To learn more about this and other AAHA publications, visit aaha.org.
“Techs are the heart that fuels our practice.”

Christopher J. Allen, DVM, JD
President, Associates in Veterinary Law, PC
Endwell, NY
info@veterinarylaw.com

Liz Bales, VMD
Writer, speaker, and featured expert in all things cat

Marty Becker, DVM
Founder, Fear Free Adjunct Professor, Washington State, Colorado State, and the University of Missouri Colleges of Veterinary Medicine
North Idaho Animal Hospital Sandpoint, ID
fearfreepets.com

Jan Bellows, DVM, DAVDC, DABVP
All Pets Dental Weston, FL
allpetsdental.com
dentalvet@aol.com

Elizabeth “Betsy” Charles, DVM, MA
Executive director, Veterinary Leadership Institute Adjunct professor, Washington State University Pullman, WA

Steve Dale, CABC
Radio show host, blogger, and animal behavior expert stevedale.tv

Ashley Bourgeois, DVM, DACVD
Animal Dermatology Clinic Portland, OR
@TheDermVet

Priscilla Bowens, DVM, MPH, JD
Public health researcher, health preparedness educator, and health care legal counsel @drpetnugget

Bo Brock, DVM
Brock Veterinary Clinic Lamesa, TX

Walter Brown, BS, RVTG
Social media influencer, digital cinematographer, and comedian

Liz Hughston, MEd, RVT, CVT, LVT, VTS (SAIM) (ECC)
Relief technician, trainer, and consultant San Francisco Bay Area facebook.com/VetTechXpert

Bash Halow, LVT, CVPM
Halow Consulting New York, NY

Shawn Messonnier, DVM
Paws & Claws Holistic Animal Hospital Plano, TX

Stephen Cital, RVT, SRA, RLAT, VCC, CPPV, VTS-LAM
Anesthesia, pain management, and cannabinoid expert @animalguy

Kathryn Primm, DVM, CVPM
Owner, founder, manager, and chief veterinarian Applebrook Animal Hospital Ooltewah, TN

David Dycus, DVM, MS, CCRP, DACVS-SA
Medical director, Nexus Veterinary Specialists Chief of orthopedic surgery, Nexus Veterinary Bone & Joint Center Co-founder/co-director, Veterinary Sports Medicine & Rehabilitation Institute Baltimore, MD @Ortho_Vet

Marc A. Rosenberg, VMD
Medical Director Voorhees Veterinary Center Voorhees, NJ mrosenberg27@comcast.net

Emily Seidl, DVM
Animal Welfare Association Voorhees, NJ

“Guiding relationships is my calling.”

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Through its extensive network of news sources, dvm360® provides unbiased multimedia reporting on all issues affecting the veterinary profession.

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Director of Operations | Thomas Brown

Sales
Director of Sales | Yousef Elhusseini
(609) 716-7777 yelhusseini@mmhgroup.com
National Accounts Managers
Angie Homann | ahomann@mmhgroup.com
Chris Hurrey | churrey@mjhlifesciences.com
Andrew Tomabene | atomabene@mmhgroup.com
Christina Ursi | cursi@mjlifesciences.com
National Accounts Associates
Matthew Villano | mwvillano@mmhgroup.com
Andre Wooley | awooley@mmhgroup.com
Books/Resource Guide Sales | Kristina Bildeaux
(507) 895-8758 kbildeaux@mmhgroup.com
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How the Veterinary Practice Retirement Plan Just Got a Lot Cooler

By Darby Affeldt, DVM, RICP

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TURN GI ISSUES AROUND IN AS LITTLE AS 24 HRS

Hill's Prescription Diet GI Biome demonstrated clinical results in cats with constipation or diarrhea¹ and dogs with diarrhea² in as little as 24 hours.

¹Wernimont, S.M., et al. Food with Specialized Dietary Fiber Sources Improves Clinical Outcomes in Adult Cats with Constipation or Diarrhea (in a 2 Month Study). FASEB J. 2020;34(1). Some cats may require multimodal management.
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The power of “thank you”

It’s wonderful that we have a week celebrating veterinary technicians and other support team members. National Veterinary Technician Week may be over, but I want to say thank you to the veterinary technicians, veterinary assistants, groomers, daycare workers, client service representatives, hospital managers, and more for all your incredibly hard but rewarding work. This year has been volatile, uncertain, and incredibly busy for all of us in the veterinary profession. Every day presents a new kind of obstacle for our teams, yet we manage to adapt and adjust what we do for the good of patient care and client service.

I was recently on a farm filming a video for the virtual daycare at our fall Fetch® dvm360 virtual conference (November 12-14) when I observed 2 toddlers who didn’t know one another feeding snacks to the goats. When I girl ran out of treats for the goats, the other girl noticed and yelled over their heads, “Thank you!” I complimented both parents and told them how meaningful it was to witness that. I cracked up laughing when both sets of parents’ responded: “We work very hard on that. They’re having a good day…for now!”

Nothing makes me happier than receiving a handwritten thank-you card from a client. It might be a simple “thank you for fitting us in last week” or “thank you for being so good to Oliver all these years.” When I receive them, frankly, I’m startled. Do I deserve the thank you? And then I stop and think: Yes, we deserve the thank you.

You and your hospital team work tirelessly to make sure your patients are well cared for and free of pain and suffering. Those 2 simple words create such a positive ripple effect for anyone who hears or reads them. As we approach the holidays during this pandemic, it is more important than ever to go the extra mile and thank someone who has done something big or small for you either in or out of the clinic.

My parents taught me early on that giving thanks to the people in my life will open the door to receiving thanks in return. Gratitude should never be forgotten or underestimated. The feeling of appreciation—whether it comes at the end of a shift, in a Zoom meeting, or in an exam room—allows us to continue to make an impact in our profession. Even when I am euthanizing a dog, for example, I thank the pet for all the love and memories it has provided for its family and ours over the years. Doing so allows me to continue to stay true to my oath of veterinary service. Thank your fellow colleagues, including your referral veterinarians. We are all part of this great team and profession, trying to work our way through this pandemic and strive for success. It’s not easy out there, but having colleagues show their thanks and gratitude helps make it all worth it. So, hang in there and thank you for all you do.

—Adam Christman, DVM, MBA
Chief Veterinary Officer

The conference will also revisit the important topic of diversity, with a second live panel discussion featuring veterinary professionals from various backgrounds who will share their thoughts and experiences with diversity and inclusion.

Of course, you can always stay on top of the latest developments in veterinary medicine at dvm360.com. Follow us on social media and request our e-newsletters (mjlifesciences.formstack.com/forms/dvm360) to make sure your practice is prepared to prosper in these challenging times.

—Mike Hennessy Sr.
Chairman and Founder,
MIH Life Sciences
Leadership and the veterinary industry: Where are the women?

Despite current demographics, men dominate in veterinary practice ownership and industry leadership. Here are some possible reasons why—and what women need to do to correct it.

By Kathryn Kraft, DVM

A story aired recently on NPR about Erika James, PhD, the first female person of color to become the dean of an Ivy League business school (the University of Pennsylvania’s Wharton School). One of her comments during the interview struck a chord with me. “Women are more reluctant to take on new roles unless all the i’s are dotted and t’s are crossed,” she said.1 The interviewer and James went on to discuss other topics, but they made the point: Professional men are more likely to apply for the jobs they want, while professional women are more likely to apply for jobs for which they are overqualified.2

Leading sources such as Forbes, Harvard Business Review, and Stanford University have long noted this concerning trend. The veterinary industry is not immune. In my role as chief medical officer for Family Vet Group, I have interacted with countless practice owners and industry partners, and have seen a concerning trend toward similar demographics across the field.

A startling revelation

Earlier this year at the Western Veterinary Conference, my group’s president and I met with a wide range of industry executives, from distributors to pharmaceutical companies to vendors with new technology platforms. From dawn to dusk over several days, we attended back-to-back meetings. Yet somehow, even at 30 weeks pregnant, I was the only woman in any of the meetings.

I left the conference thinking, where are the women? Where is our representation at the executive level across our industry? Can we blame generational differences for the number of men in these executive roles?

We know that veterinary schools graduated a higher percentage of male veterinarians 30 years ago, and those in the baby boomer generation are more likely to be practice owners than younger veterinarians.3 But let’s evaluate leadership roles in the field outside of practice ownership. Corporations have been springing up across the industry for the past few decades, with the number of new groups accelerating in the past 10 years. If younger companies follow the demographic trends within the veterinary industry as a whole, we should see increasing numbers of people identifying as women and increasing diversity throughout these organizations.

Yet as of September 2020, based on data acquired from company websites, leadership positions across 10 top veterinary corporations (3 distributors, 4 pharmaceutical companies, and 3 young tech companies) were dominated by older White men. Overall, 36% of leadership teams were women, with only 16% of senior corporate executives being women.

Lower-level corporate executives (below the C suite) were more likely to be women, at 49%.

According to the most recent American Veterinary Medical Association census data, almost 62% of veterinarians identify as female,4 yet there is a clear lack of equal representation in leadership positions across the veterinary industry. Notably, at Zoetis 75% of top-level executives (outside of board members) are women.

Time to break the rules

There are a few key takeaways from these data. Women are vastly underrepresented in leadership across the veterinary field, both in practice ownership and in executive-level positions within the industry. One possible hypothesis for this discrepancy is that women are less likely to apply for executive-level positions. It has been proven that women feel the need to be exceedingly qualified for a position before applying, whereas men are more likely to apply for an opening they want even if they fall far short of the necessary qualifications.2

To begin increasing female representation in the upper echelons of the industry, women must approach the hiring process for these positions differently than we have in the past. We have to see the process as an opportunity to frame our own expertise in such a way as to add value to the specific skills and experiences required in the job description. We also have to be willing to be vulnerable—we must be willing to fail. Likewise, we must not be afraid of our own success. Research shows that women are much less likely to apply for top positions due to fear of failure than men.5

Finally, the same reports also showed that women often don’t apply for top-tier positions because they are following guidelines about who should apply. We will succeed only when we approach these positions as our own best advocates, and treat the hiring process as less of a meritocracy and more of an opportunity to showcase our personal strengths. We’ve got to break the rules, ladies. 

Kathryn Kraft, DVM, is a veterinary industry leader committed to improving the field and working conditions for all veterinarians, especially women and mothers. She currently serves as chief medical officer for Family Vet Group. She and her husband reside in Fort Worth, Texas, with their 2 small children.

REFERENCES


By Kathryn Kraft, DVM, is a veterinary industry leader committed to improving the field and working conditions for all veterinarians, especially women and mothers. She currently serves as chief medical officer for Family Vet Group. She and her husband reside in Fort Worth, Texas, with their 2 small children.
From a distance, no one would know that 11-year-old Labrador retriever Beau looks different from any other dog. Yet earlier this year, the dog underwent a nasal planectomy, a rare type of facial reconstruction surgery, to remove a squamous cell carcinoma (SCC) from inside his nose, significantly altering his appearance.

Nasal planectomy is performed to remove neoplasia within the nasal planum. During surgery to remove the cancer, the fleshy, non-haired tip of the nose is removed and the patient’s lips are used to create a new covering. This procedure is often necessary for survival because this type of cancer typically does not respond to any other treatment. Yet many veterinarians and pet owners are reluctant to choose this option due to fears about potential complications or the animal’s postsurgical appearance.

While Beau’s owner, Air Force Master Sergeant Charlie Morse, was stationed in California, he was alerted by his dog sitter in Wasilla, Alaska, that Beau was bleeding from his nose. When Morse returned home to Wasilla, the bleeding appeared to be getting worse. Morse took Beau to Tier 1 Veterinary Medical Center in Palmer, Alaska, where the dog was diagnosed with the cancer and given just months to live.

The team at Tier One decided that the best course of action was to perform a nasal planectomy. “Nasal planectomy is used primarily to remove SCC, which is locally invasive but rarely spreads and is generally not responsive to any type of treatment other than surgery,” says Bradley Schmidt, DVM, DACVIM, the only board-certified oncologist in Alaska and one of Beau’s caregivers. “It is a technique to help remove the tumor in its entirety.” Schmidt has only referred 3 of these surgeries in over 20 years, but he knew it was Beau’s best hope. Without surgery, the dog was likely to live just a few months.

For Morse, the decision to move forward with the procedure was an easy one. “From 1 to 2 months realistically for him to be with me to hopefully years left. [Beau has] been there for me through thick and thin and has been that constant in my life, and I owed it to him.”

The surgery was a resounding success. The cancer was removed fully, and Beau can still breathe and smell without difficulty. “He works his new nose the same way he did with his nostrils,” Morse says. “He uses the muscles on the side of his face and kind of flares open what I call the ‘mega-nostril’ now.”

In a multi-institutional, retrospective case study published last year, 25 client-owned dogs, most with SCC, underwent radical nasal planectomy and 1 underwent resection of the nasal planum. Complications, including dehiscence, occurred in 19 dogs, 9 required revision surgery, and 1 did not survive to discharge. Median survival was 1542 days (range, 3-2010 days). Among 11 owners interviewed, 10 were satisfied with their dog’s appearance, and 8 said they would consent to the surgery again.1

Given the poor prognosis with other treatment options and the minimal associated long-term complications, the study authors concluded that nasal planectomy is a viable option for dogs with neoplasia of the nasal planum. They noted, however, that preoperative client education is crucial to ensure that the owner understands how different the pet will look after surgery.1

REFERENCE

Rare surgical procedure gives dog new lease on life

An uncommon but life-saving surgery gave a Labrador retriever and his grateful owner much more time together.

By Caitlin McCafferty, Assistant Editor
Busy times call for simpler flea and tick treatment.

ONE chew every 12 weeks*

During these hectic times, it’s more important than ever to protect pets from parasites. Prevent fleas and ticks without the hassle of a monthly treatment.

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*BRAVECTO Chews for Dogs kill fleas, prevents flea infestations, and kills ticks (black-legged tick, American dog tick, and brown dog tick) for 12 weeks. BRAVECTO Chews also kills lone star ticks for 8 weeks.

The most commonly reported adverse reactions include vomiting, decreased appetite, diarrhea, lethargy, polydipsia, and flatulence. BRAVECTO Chews for Dogs have not been shown to be effective for 12-weeks’ duration in puppies less than 6 months of age. BRAVECTO Chews are not effective against lone star ticks beyond 8 weeks of dosing. Fluralaner is a member of the isoxazoline class. This class has been associated with neurologic adverse reactions including tremors, ataxia, and seizures. Seizures have been reported in dogs receiving isoxazoline class drugs, even in dogs without a history of seizures. Use with caution in dogs with a history of seizures or neurologic disorders. VIEW PRESCRIBING INFORMATION

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

Description:
Each chew is formulated to provide a minimum dose of 11.4 mg/fl (0.25 mg/kg) body weight.
The chemical name of fluralaner is (±)-4-[5-(3,5-dichlorophenyl)-5-(trifluoromethyl)-4,5-dihydroisoxazol-3-yl]-2-methyl-N-[2-oxo-1,2,3,2,2-trifluoromethyl] ethylbenzamide.

Indications:
Bravecto kills adult fleas and is indicated for the treatment and prevention of flea infestations (Ctenocephalides felis) and the treatment and control of tick infestations (Ixodes scapularis (black-legged tick), Dermacentor variabilis (American dog tick), and Rhipicephalus sanguineus (brown dog tick)) for 12 weeks in dogs and puppies 6 months of age and older, and weighing 4.4 pounds or greater.

Bravecto is also indicated for the treatment and control of Amblyomma americanum (lone star tick) infestations for 8 weeks in dogs and puppies 6 months of age and older, and weighing 4.4 pounds or greater.

Dosage and Administration:
Bravecto should be administered orally as a single dose every 12 weeks according to the Dosage Schedule below to provide a minimum dose of 11.4 mg/fl (0.25 mg/kg) body weight.
Bravecto may be administered every 6 weeks in case of potential exposure to Amblyomma americanum ticks (see Effectiveness).
Bravecto should be administered with food.

**Body Weight Ranges (lb)** | **Fluralaner Content (mg)** | **Chews Administered**
--- | --- | ---
4.4 – 9.9 | 112.5 | One
>9.9 – 22.0 | 250 | One
>22.0 – 44.0 | 500 | One
>44.0 – 88.0 | 1000 | One
>88.0 – 123.0* | 1400 | One

*Dogs over 123.0 lb should be administered the appropriate combination of chews.

Treatment with Bravecto may begin at any time of the year and can continue year round without interruption.

Contraindications:
There are no known contraindications for the use of the product.

Warnings:
Not for human use. Keep this, and all drugs out of the reach of children. Keep the product in the original packaging until use in order to prevent children from getting direct access to the product. Do not eat, drink, or smoke while handling the product. Wash hands thoroughly with soap and water immediately after use of the product.

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

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

Bravecto has not been shown to be effective for 12-weeks duration in puppies less than 6 months of age. Bravecto is not effective against Amblyomma americanum ticks beyond 8 weeks after dosing (see Effectiveness).

Adverse Reactions:
In a well-controlled laboratory dose confirmation study, one dog developed edema and hyperemia of the upper lips within one hour of receiving Bravecto. The edema improved progressively through the day and had resolved without medical intervention by the next morning.

Post-Approval Experience (2019):
The following adverse events are based on post-approval adverse drug experience reporting. Not all adverse events are reported to FDA/CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data.

**Adverse Reaction (AR) | Bravecto Group: Percentage of Dogs with the AR During the 182-Day Study (n=224 dogs) | Active Control Group: Percentage of Dogs with the AR During the 84-Day Study (n=70 dogs)**
--- | --- | ---
Vomiting | 7.1 | 14.3
Decreased Appetite | 6.7 | 0.0
Diarrhea | 4.9 | 2.9
Lethargy | 5.4 | 7.1
Polydipsia | 1.8 | 4.3
Flatulence | 1.3 | 0.0

In a well-controlled laboratory dose confirmation study, one dog developed edema and hyperemia of the upper lips within one hour of receiving Bravecto. The edema improved progressively through the day and had resolved without medical intervention by the next morning.

How Supplied:
Bravecto is available in five strengths (112.5, 250, 500, 1000, and 1400 mg fluralaner per chew). Each chew is packaged individually into aluminum foil blister packs sealed with a peelable paper backed foil lid stock. Product may be packaged in 1, 2, or 4 chews per package.

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Rev. 04/19
The proximal sesamoid bones (PSBs) are 2 relatively small bones located in the suspensory apparatus of the fetlock. The most proximal portion of the PSBs acts as the point of insertion for the suspensory ligament. The base of the PSBs acts as the point of origin for the distal sesamoidean ligaments.

PSB fractures are the most common fatal injury in racehorses, accounting for 45% to 50% of such injuries in racing Thoroughbreds and 37% to 40% for 45% to 50% of such injuries in racing Quarter Horses. Although these fractures are seen in younger racing horses, they are more common in 3- to 5-year-old horses that have done a lot of training and racing.

Looking for a cause
In a retrospective study recently published in Equine Veterinary Journal, a group of researchers from the University of California, Davis, School of Veterinary Medicine characterized bone abnormalities that precede PSB fractures. The study consisted of 2 independent studies, each comparing the findings of 3 groups of PSBs:

- Fractured medial PSBs from racehorses that sustained PSB fracture
- The contralateral intact medial PSB from racehorses that sustained PSB fracture
- Intact medial PSBs from control racehorses that died from a cause unrelated to PSB fracture

Study 1 examined morphologic findings and serial sagittal sections from whole PSBs. Study 2 compared tissue morphometric properties from microcomputed tomography scans. According to previous studies, PSB fractures result from chronic repetitive loading. Racehorses at higher risk for PSB fractures are those in active intensive training and racing, competing in more events at high speed/greater distance.

“Understanding the mechanism of PSB fracture is necessary to reduce fracture risk and determine risk factors and fracture prevention,” the authors of the current study wrote.

Study findings
The investigators noted abnormal findings in 2 specific locations within the PSB: the subchondral bone on the abaxial half of the PSB and (less commonly) along the palmar surface. They found that 90% of the injured horses showed discoloration at a site of focal osteopenia (bone loss) associated with the PSB fracture. A similar but less severe abnormality was commonly found in the contralateral, intact PSB of horses with PSB fracture, but this was not found in the control horses that did not have a PSB fracture.

To determine whether pre-existing conditions are associated with these fractures, PSBs were examined from Thoroughbred racehorses that died from either PSB or non-PSB fractures. Those horses that died from PSB fractures had evidence of abnormalities on the subchondral surface, including focal surface discoloration, focal osteopenia, subchondral bone sclerosis, focal fragmentation of subchondral bone, and calcified cartilage matrix. Subchondral lesions seen in the medial PSBs of racehorses may have predisposed them to catastrophic biaxial midbody PSB fracture.

The horses in this study were euthanized due to catastrophic injury. “PSB abnormalities are very difficult to detect in live horses,” concedes study author Susan Stover, DVM, PhD, DACVS, professor of surgical and radiological sciences at the University of California, Davis School of Veterinary Medicine. “The focal region of bone loss is small, and it’s superimposed over a lot of other heavy, dense bones. However, we believe the osteopenic lesion predisposes this bone to fracture under otherwise normal loading circumstances,” Stover says.

Stover noted that the site of PSB fracture has similarities to that of a stress fracture, with a region of bone loss. “This is why you can see stress fractures radiographically,” she says. “That region of bone loss is osteopenic, weakening the bone and serving as a critical defect causing it to fracture at lower loads than a healthy bone would normally be able to sustain.”

Looking ahead
The next step is to determine how to detect the factors that result in bone abnormalities, so that affected horses can be treated. “If you treat affected horses, they should heal and be able to go back to completely normal careers,” Stover says. “Knowledge of the nature and site of the focal osteopenic lesion with the recent technological advance in 3-dimensional functional imaging (ie, position emission tomography) may enhance ability to detect the abnormality.”

The investigators are continuing to study PSB fractures to determine what role training plays, if any, in causing these injuries. “PSB fracture typically occurs in horses that have done a lot of high-speed furlongs of works and races without a lot of recovery,” Stover says. “If we understand how training affects the risk for fracture, then we can recommend changes in the way racehorses are trained and raced to prevent PSB fractures from happening.”

Stover affirmed the importance of the present study. “The discovery of this (PSB) lesion is important as now we know what to look for,” she says. “So, we might be able to figure out ways to detect it in the live horse, which has been difficult because of the small size and its location. And, we may be able to figure out ways to work with training and racing schedules to prevent it altogether.”

REFERENCES
A new study from Banfield Pet Hospital reveals that a shortage of veterinarians may cause an estimated 75 million pets in the United States to lose access to veterinary care by 2030.

In addition, with 90% of veterinarians identifying as White, there’s a dire need to diversify the profession, the company said at its annual Pet Healthcare Industry Summit last month.

“Pets are here for us, and as veterinary professionals, we must be here for them. Banfield is committed to partnering with the veterinary industry to ensure the talent pipeline grows and diversifies to meet the evolving needs of pets, people, and society,” says Banfield Pet Hospital President Brian Garish in a company release. Banfield says it has committed to the following initiatives to help increase the total number of veterinary professionals and improve diversity:

- Increase diversity among veterinary health care professionals within Banfield, with a 30% increase in Black, indigenous, and people of color by 2030.
- Strengthen the pipeline of Black veterinarians by partnering with Mars Veterinary Health, Royal Canin, and Tuskegee University College of Veterinary Medicine to launch the Banfield & Royal Canin Student Support Fund, donating an initial $125,000 to Tuskegee veterinary students in need of financial support.
- Invest $1 million over the next year in equity, inclusion, and diversity efforts to increase representation, offer training, and support industry efforts to improve the diversity pipeline.

“With nearly 70% of Black veterinarians in the US being Tuskegee graduates, we’re inspired by the work Banfield and Royal Canin are doing to continue to push for a more equitable, inclusive, and diverse profession,” says Ruby Perry, DVM, MS, dean of the Tuskegee University College of Veterinary Medicine.

Banfield has also announced the newly formed Diversify Veterinary Medicine Coalition, which will work in partnership with a commission being established by the American Veterinary Medical Association, Association of American Veterinary Medical Colleges, Veterinary Medical Association Executives, and others, to drive equity, inclusion, and diversity across the profession.

REFERENCE


Fetch® dvm360 hosts its first student diversity panel

Four students weigh in on diversity, equity, and inclusion in veterinary school, and share their own unique journey to veterinary medicine.

By Erica Tricarico, Senior Editor

Diversity is a hot topic in veterinary medicine, not only in professional circles but also among students. The inaugural Fetch® dvm360 virtual conference in late August included a panel discussion among 4 veterinary students who shared their thoughts on diversity, equity, and inclusion, and offered strategies to make the profession more accessible to all people regardless of socioeconomic status, race, ethnic or cultural background, gender, or sexual orientation.

The panel was hosted by Christopher Hollingsworth, a third-year student at Cornell University College of Veterinary Medicine, and also included third-year veterinary student Laci Taylor, second-year veterinary student Mariacamil Garcia Estrella, both also at Cornell, as well as Hadiyah Edwards, a third-year student at Ross University School of Veterinary Medicine.

The panelists shared the challenges they’ve faced as minorities at their veterinary schools, including lack of representation, lack of exposure to the field before veterinary school, and professors who have misinterpreted their cultural differences and different learning styles as a lack of ability to complete the program.

They also discussed the importance of mandatory diversity training for students and faculty, and why there should be zero tolerance for racist and culturally insensitive comments and behaviors in veterinary schools and practices.

To watch the full thought-provoking conversation, visit dvm360.com, and stay tuned on social media for details about our second diversity panel discussion, to be held during the November 12-14 Fetch® dvm360 virtual conference.
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**Dogs: Doing their part to help stop the spotted lanternfly spread**

By dvm360® Staff

The invasion of spotted lanternflies into the United States was first detected in 2014. The distinctive insect—adults have spotted brown and red wings—is native to China, India, and Vietnam, and was likely brought to the US on a cargo ship from China. Six years later, spotted lanternflies have put 26 of the 67 counties in Pennsylvania under quarantine parameters in hopes of stopping the spread of this invasive species. By the end of August, nearly 63,000 public reports of spotted lanternflies had been made in the state—a 72% increase from the same period in 2019.

Enter the University of Pennsylvania School of Veterinary Medicine (Penn Vet), where a new program is training scent-detection dogs to identify the insect’s egg masses. During fall, adult spotted lanternflies lay egg masses that can contain up to 50 eggs each. Because the egg masses can attach to—and blend in with—almost any surface, they are often difficult to spot.

Led by Cynthia Otto, DVM, PhD, DACVECC, director of Penn Vet's Working Dog Center, and backed by funding made available through the US Department of Agriculture, the aim of the program is to use dogs’ powerful scent-detection capabilities to seek out the egg masses so they can be destroyed.

"With up to 300 million smell receptors in their noses, properly trained dogs are uniquely positioned to provide an effective surveillance and management strategy in identifying and removing these egg masses that may otherwise go undetected," Otto says in a press release.

This program is crucial to Pennsylvania because spotted lanternflies can wreak havoc on the state's natural resources. These insects not only cause severe damage to trees and are a nuisance to Pennsylvanians, but they are also a significant threat to the state’s agriculture industry.

The program began in December 2019, when eggs were introduced to the dogs in a laboratory setting. Researchers gathered samples by either scraping them off tree bark or removing a piece of bark from a tree with the specimen on them. The eggs were then killed by freezing. The intent of this phase was to make sure the dogs could identify the odor of the egg mass while ignoring the odor of tree bark.

Next, the dogs were tested to see whether they could identify live eggs in real-world settings, such as on or under cars, pallets, and other objects. "We found that after training on the dead eggs, the dogs transferred easily to the live eggs in just a couple of sessions," says Jennifer Essler, PhD, a postdoctoral researcher working on the program.

Results were excellent, with the dogs correctly identifying egg masses with up to 95% accuracy while also correctly ignoring nontarget scents up to 93% of the time. "And, the proof-of-concept confirming the dog’s ability to transfer easily from dead to live eggs paves the way for producing reliable training results unhindered by location or season—even during times when live targets aren’t accessible," Essler says.

Due to program’s success, Penn Vet will soon be training a new set of dogs, including 18-month-old Lucky, a German shepherd slated to become the first spotted lanternfly scent-detection dog at the Pennsylvania Department of Agriculture.

"Penn Vet is an invaluable partner, researching innovative solutions to the most complex and challenging threats to Pennsylvania agriculture and our state’s economy," Agriculture Secretary Russell Redding says in the release. "We are thrilled to see the work of Dr. Otto’s team come to fruition and excited to have Lucky join the skilled team of inspectors working to keep the spotted lanternfly from spreading."

For more information about the spotted lanternfly in Pennsylvania, visit the Pennsylvania Department of Agriculture’s website.
Texas Tech opens new veterinary school

Texas Tech University School of Veterinary Medicine will welcome an inaugural class of about 60 students in fall 2021.

By dvm360 Staff

Texas Tech University College of Veterinary Medicine is now open for business. The university says it has received “a letter of reason-able assurance” from the AVMA Council on Education, allowing an inaugural class of approximately 60 students to start next fall, with provisional accreditation in 2025.

“Today, future veterinarians throughout Texas officially have another opportunity to pursue their dreams within the borders of our state,” says university Provost and Senior Vice President Lawrence Shovanec, in a university release. “I am proud of the efforts of so many within our campus community and the external partners that helped Texas Tech arrive to today. I am also excited for the many students who will benefit from an additional in-state veterinary education.”

Located in Amarillo, the veterinary school plans to admit students who are passionate about serving in rural and regional communities, with a curriculum to match. Additionally, Texas Tech’s innovative and cost-efficient model “partners with the wider community of veterinary practices across the state to provide clinical, real-world experiential learning,” according to the release.

Texas Tech first announced its plans to open a veterinary school in 2015, which led more than 30 individuals, foundations, and the Amarillo Economic Development Corporation to raise $90 million toward the school’s infrastructure. Last year, the Texas legislature appropriated, and Governor Greg Abbott signed into law, $17.4 million to start the program.

“After all these years of planning, we now finally get to meet and start teaching the very first class of students of the School of Veterinary Medicine at Texas Tech. That is indeed something that is incredibly special,” says Guy Loneragan, BVSc, PhD, dean of the School of Veterinary Medicine, in the release.

The school currently has about 30 staff and faculty members with plans to expand. Orientation for the inaugural class of students will begin in early August 2021. For more information, visit depts.ttu.edu/vetschool.
Prevalence, comorbidity, and breed differences for anxious dogs

A large study sheds light on anxious behaviors in dogs by evaluating their penetrance within the domestic canine population, the patterns by which certain traits occur in tandem, and the genetic stronghold for these behaviors.

By Joan Capuzzi, VMD

Anxious dogs can pose as a problem for not only their owners, but also for themselves. Anxiety in dogs is linked to many unwanted behaviors, including aggression and hyperactivity, that sometimes land these pets in shelters. Previous studies have found the most common canine behavior issues to be excessive barking, inappropriate elimination, aggression, fear, and destructiveness.1-3 About 1 in 5 dogs displays a fear of strangers, dogs, or new situations,4 while 20% to 50% exhibit excessive sensitivity to noise.5-9 Comorbidity between noise sensitivity and separation anxiety has been reported.5,9

Although extensive previous research has laid the foundation for the epidemiology of canine behavior problems, that work is hobbled by small sample sizes, meager breed representation, and limited numbers of traits studied.

**Study details**
The current study, conducted by a group of genetics researchers in the University of Helsinki Department of Veterinary Biosciences, provides a broader picture by collecting 13,715 responses from owners of 264 canine breeds to questions regarding 7 anxiety traits.10

The data were harvested through an online questionnaire that inquired about noise sensitivity, (delineated into fireworks, thunder, and gunshots), fear (of dogs, of strangers, of novel situations), fear of surfaces/heights, hyperactivity/impulsivity/inattention, compulsive behavior (self-biting, surface licking, excessive drinking, pacing, fly snapping, staring, tail chasing), aggression (toward family members, toward strangers), and separation-related behavior (destroy/urinate, vocalize/salivate/pant).

The gender ratio of the dogs was roughly 50-50, with the following breed types predominating: Bernese mountain dog, border collie, Finnish Lapponian dog, German shepherd, Labrador retriever, Lagotto Romagnolo, Lapponian herder, miniature schnauzer, rough collie, smooth collie, Shetland sheepdog, soft-coated wheaten terrier, Spanish water dog, Staffordshire bull terrier, and mixed-breed dog.

**The findings**
In total, 72.5% of dogs reportedly displayed some type of troubling behavior. Noise sensitivity was among the most prevalent anxiety trait, with 1 in 3 dogs exhibiting excessive fear of at least 1 sound; reaction to fireworks was most common. Fear was the second most common trait, with a rate of 29%; within this realm, fear of other dogs predominated.

The second most common was noise sensitivity, particularly in fearful dogs. Separation-related behaviors, hyperactivity/impulsivity/inattention, and compulsive behavior are also tightly joined. The connection between impulsivity and compulsion may be due to a failure of response control mediated by basal ganglia.12,13

Because of comorbidity patterns, relative risks for different behaviors can be determined by the presence of other traits. For instance, dogs exhibiting separation-related behavior were over 4 times more likely to be hyperactive/impulsive and 3.4 times more likely to be inattentive. Likewise, aggressive dogs were fearful 3.2 times more often, while those showing separation-related behavior were 2.8 times likelier to be fearful. Male dogs were more prone to aggression, hyperactivity/impulsivity/inattention and, to a lesser extent,
separation-related behavior. Females had a higher prevalence of fearfulness. The rate of noise sensitivity—particularly to thunder—increased with age, as did aggression and fear of surfaces/heights. Conversely, hyperactivity/impulsivity/inattention, tail chasing, and self-biting declined with age.

Significant breed differences and predispositions were evident across all behavioral traits. Notably, nearly 11% of miniature schnauzers had a history of aggression toward strangers, compared with less than 1% of Labrador retrievers. Over 9% of Staffordshire bull terriers engaged in tail chasing, but none of the Lagotto Romagnolos in the study displayed this habit. Fear was the most common behavior issue in Spanish water dogs, Shetland sheepdogs, and mixed breeds, but was seldom reported in Labrador retrievers. Hyperactivity/impulsivity were most commonly reported by owners of German shepherds, Staffordshire bull terriers, and mixed breeds, but were rarely seen in rough collies and miniature schnauzers.

Some traits were shared by several breeds but expressed differently in each. For instance, compulsive behavior was trademarked by German shepherds and Staffordshire bull terriers, but the former manifested it by pacing and excessive drinking, while the latter engaged in tail-chasing. In border collies, compulsiveness took the form of light chasing and staring. Likewise, mixed-breed dogs showed their separation anxiety by destroying or soiling the house when left alone, whereas wheaten terriers were more likely to vocalize, salivate, or pant.

Breed-specific patterns also came to light. For example, border collies showed only moderate behavioral impairment across the board, except for compulsive staring and fly snapping, which they manifest at high prevalence. The behavioral landscape of the Staffordshire bull terriers in the study overwhelmingly consisted of compulsive behavior and hyperactivity/impulsivity/inattention.

**Conclusion**

The findings in this study are consistent with those of previous research, and the sheer number of dogs in the present report lends further credence to past work. The obvious limitation of the study herein is that the sample is self-selected and, therefore, may not be representative of the Finnish canine population at large. Secondly, traits were categorized into low, moderate, and high brackets, but these were based on frequency of signs rather than severity, except in the cases of aggression, separation-related behavior, and hyperactivity/impulsivity/inattention.

The breed trends in behavioral properties of the study group highlight the genetic governance over the way a dog behaves.

References available online at dvm360.com
Royal Canin supports WSAVA Global Nutrition Committee

The WSAVA Global Nutrition Committee and Royal Canin have joined forces to help promote the distribution of credible pet nutrition resources.

By dvm360® Staff

Royal Canin has partnered with the World Small Animal Veterinary Association (WSAVA) to support the association’s Global Nutrition Committee (GNC), which provides nutritional information and recommendations for veterinary professionals and pet owners.

“Through the advocacy of its members and the resources it creates, the GNC raises awareness of the central role of nutrition in companion animal health globally and advances the role of veterinary care teams as the expert source of information for optimal pet nutrition,” says WSAVA President Shane Ryan, BVSc (Hons), MVS, CVA, GradDipAnimChiro, MChiroSc, MRCVS, in an association press release.

“We are very pleased that Royal Canin, as one of the world’s global nutrition brands, is supporting the work of the GNC and look forward to working together.”

The GNC offers a regularly updated toolkit of resources for veterinary teams, including educational content for pet owners. It also promotes the importance of performing nutritional assessments and advocates for the inclusion of nutrition as a component of all veterinary and veterinary technician curricula. Additionally, committee members lecture and publish on a wide range of pet nutrition topics.

With widespread misinformation circulating about pet nutrition, Royal Canin’s Global Scientific Affairs Manager Thomas Brenten, DVM, MS, MANZCVS, hopes this partnership will create a clearer landscape for pet owners and veterinarians looking for credible sources about this important topic.

“The GNC is a lighthouse, providing unbiased tools and resources reflecting the current state of knowledge. This is invaluable,” Brenten says.

Royal Canin's Global Scientific Affairs Manager Thomas Brenten, DVM, MS, MANZCVS

TGen launches Vidium Animal Health

Genomic based-precision medicine from the TGen subsidiary provides additional resources to assist both veterinary oncologists and pet owners in the diagnosis and treatment of canine cancer.

By dvm360® Staff

Translational Genomics Research Institute (TGen), an affiliate of California-based cancer research and treatment center City of Hope, has announced the launch of Vidium Animal Health, which provides genomic-based precision medicine to both veterinary oncologists and pet owners.

“Vidium is built around the human-animal bond,” says President David Haworth, DVM, PhD. “When a pet is diagnosed with cancer, it can be a really scary time for everyone, so we want to offer the very best information, and hope, that science can offer.”

The company offers SearchLight DNA, “a test designed specifically to identify any of the nearly 120 known cancer-associated genetic mutations in dogs, and use the molecular profile of misbehaving genes to help guide diagnosis and treatment,” according to a company press release.

“Vidium was born from our finding that the genetic underpinnings of canine cancers reflected the same fundamental science that allowed us to apply precision medicine toward treating human cancers,” says Will Hendricks, PhD, an assistant professor in TGen’s Integrated Cancer Genomics Division who has worked for many years in the comparative oncology space.

“It’s clearly a two-way street, with both humans and dogs benefiting from the exchange,” Hendricks says. “Cancer gene mutations that have clinical importance in canine oncology are abundant, and with SearchLight DNA our goal is to equip veterinarians with the best information possible to help guide the clinical management of the dogs in their care.”

SearchLight DNA reports aim to strengthen the communication gap between veterinarians and pet parents, with scientific language in the clinician’s report paired with lay language for pet owners.

Katie Banovich, Vidium’s director of operations, says the absence of genomic technology in the care of pets is a tremendous void that Vidium hopes to fill, but only with the participation of veterinarians and pet parents.

“Through application of multidisciplinary genomic science, we want to position Vidium as a partner in the veterinary care team,” Banovich says. “We want to be a guide. We want to work with veterinarians.”
Zoetis and the Association of American Veterinary Medical Colleges (AAVMC) invite second- and third-year veterinary students at US and Caribbean schools to apply for a $2000 scholarship for the 2021-2022 academic year.

“The AAVMC is proud to help new generations of veterinarians by partnering with Zoetis on this strategic effort,” says AAVMC Chief Executive Officer Andrew T. Maccabe, DVM, MPH, JD, in a press release. “Scholarship support plays a significant role in the success and well-being of our DVM students, and we’re extremely grateful to Zoetis for the investment they’re making in the future of the profession.”

Eligibility requirements include academic excellence, financial need, diversity, sustainability, leadership, and career interest. Scholarships will be awarded to students in all areas of veterinary medicine, including small animal practice, food animal practice, research, government services, public health, and organized veterinary medicine.

Now in its 12th year, the Zoetis Veterinary Scholarship Program has awarded more than 3600 scholarships totaling more than $7 million. With the student debt load averaging over $170,000, Zoetis says it’s happy to help relieve some of this financial burden.

“This award has helped ease veterinary education-related financial debt and, in many cases, enabled students to participate in experiential learning opportunities such as externships,” says Christine Jenkins, DVM, DACVIM, chief medical officer and vice president of veterinary medical services and outcomes research at Zoetis.

Winners will be announced in March at the 2021 Student American Veterinary Medical Association Symposium at Cornell University in Ithaca, New York. Interested students can apply now through December 2, 2020, using the VETVANCE mobile app (vetvance.com).

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Practice finance
> Continued from cover

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andemic or not, today’s veterinary job market remains tight, with many practice owners fighting to hire and keep talented associates, veterinary technicians, and other team members. Although not usually at the top of employee wish lists, retirement plans are an important way to attract and hold on to staff. Now, thanks to a move made by Congress in late 2019, it is easier than ever to offer a 401(k) retirement plan.

Practice owners, too, should consider looking for ways to save and invest money outside the eventual sale of their hospital. Few of us would consider putting all our retirement savings into a single stock, but many practice owners put all their eggs in 1 basket: their practice value. When it comes to retirement income planning, it’s wise to diversify and build multiple “buckets” of assets, some taxable, some tax-deferred, some Roth (after-tax contributions).

Retirement plan basics
Before getting into the nitty-gritty of a really exciting new retirement plan option available to veterinary professionals, it might be useful to cover the basics of currently available plans.

Many veterinary practices start with the Savings Incentive Match Plan for Employees (SIMPLE) IRA, which allows a higher annual contribution than the traditional or Roth IRA’s current maximum contribution limits ($6000/year or $7000 for those over age 50). In 2020, for example, the SIMPLE IRA allows annual contributions of $13,500, plus another $3000 for a catch-up contribution for those over age 50. The SIMPLE IRA also offers tax benefits today, because contributions go in pretax.

Fortunately, the rules for SIMPLE IRAs are relatively well, simple: An employer agrees that if a qualifying employee (including the employer) contributes pretax income, the employer will match that contribution, up to certain limits. There are 2 options for that match, either 2% non-elective or, the more often used, 3%. With the latter option, if an employee contributes 1% of their income, the employer’s match is 1%. If an employee contributes 4%, the most the employer matches is 3%. And, of course, if the employee puts in nothing, the employer matches nothing.

However, a common mistake is when practice owners implement a SIMPLE IRA and “set it and forget it.” There may come a time when a SIMPLE IRA won’t cut it. That’s where a 401(k) comes in. Why? The 401(k) is more flexible, and perhaps the practice owner and/or associate doctors have maxed out their SIMPLE IRA contributions and need to be saving more, which is possible in a 401(k) plan.

It’s commonly for a newly hired financial professional to discover that it may have made sense for a veterinary practice to have switched to a 401(k) years ago, and that delay carries financial repercussions in outgrowing annual contributions, missing tax strategies, and missing out on some important flexibility for team members.

The benefits of a 401(k) can come with a cost. Managing a 401(k) can be more complex and means practices may need to pay a third-party administrator to help administer the plan, file the plan tax return (called a Form 5500), etc. Practice owners sometimes worry that those increased administrative expenses are exorbitant (or maybe not, considering the tax savings). A financial professional should do the heavy lifting and run all those projections for you. Many practice owners end up learning that the 401(k) is not as bad as they’d imagined.

Of course, one of the biggest benefits of 401(k) plans is the higher annual contribution mentioned earlier. In 2020, employees can contribute $19,500 per year, plus another $6500 for those over 50. These plans are also more flexible than the SIMPLE IRA and can even include a way to offer both pretax and posttax retirement savings options. Other possible options in 401(k) plans:

- Employer matching
- Requiring employee longevity before fully vesting
- The ability for employees to take out loans against their balances

Practices can even explore profit-sharing options to save more for themselves pre-tax while sharing with hard-working employees.

Fiduciary what now?
Sounds perfect, right? Maybe not. Perhaps the biggest downside of 401(k) plans isn’t actually the cost but rather the fiduciary duties a practice takes on when it starts a plan. Because the practice owner has authority over the plan design, investment options, and expenses, they must meet important and strict responsibilities. Over the past decade, several high-profile 401(k) fee lawsuits were levied against employers failing to meet their fiduciary duties. According to Ryan N. Parsons, JD, senior counsel and litigation lawyer for Foley & Lardner, LLP, fiduciary litigation is on the rise.1

Who wants this risk? Who wants to attend fiduciary training, continually negotiate plan fees, and document everything on top of all the other and more familiar hats the practice owner already wears? The Department of Labor could fine a practice owner heavily if these duties are not met, yet the responsibilities are often ignored, poorly explained, or overlooked by owners or financial professionals serving individual plans. Just 1 disgruntled employee looking for a payday could mean serious problems for practices with a 401(k).

A new and exciting retirement plan option
The solution to this fiduciary and higher-fee conundrum is a little-known strategy bundled in a fabulous holiday gift in December 2019. The Setting Every Community Up for Retirement Enhancement (SECURE) Act became law late last year and includes a provision for a 401(k) pooled employer plan (PEP), with the first plans scheduled to start January 1, 2021. A PEP allows a group of unrelated businesses (say, veterinary practices) and even the self-employed (say, relief doctors) to pool their 401(k) assets, and a pooled plan provider (PPP) provides many of the fiduciary duties for the entire plan. Better still, with the increased assets of a 401(k) PEP, individual practices can now achieve the same economies of scale that very large plans can, potentially lowering fees for all participating employees.

A PEP doesn’t require that each participating business use a generic plan either—practices can design their own plan. Practices can easily roll existing 401(k) plans into a PEP. Because they are pooled at 1 Recordkeeper, assets are not in the same investments. Administrative fees to the practice will likely drop as well.

Because the legislation is so new, as of September 2020, possibly only 1 medical group in the United States has announced the adoption of a PEP. That group is PSiVet. The PSiVet PEP starts January 1, 2021.2 Full disclosure: I was working on my financial professional continuing education by studying all of the changes with the SECURE Act, which affects many areas of financial services, and I noticed something called the PEP. Curiosity drove me to investigate what it was, and when I approached PSiVet with the idea, they were immediately excited. I am the new PSiVet PEP’s representative.

Time may be of the essence
Timing is critical because IRS regulations dictate that a practice cannot contribute to both a SIMPLE IRA and a 401(k) in the same calendar...
year. Now is a good time to ask your financial professional if the PEP is a good fit for your practice in 2021. If a switch is warranted, a 60-day notice that the SIMPLE IRA plan is terminating and a 401(k) plan is starting is required for all employees. The PEP could be a good fit if 2020 has been a profitable year and your hospital doesn’t have a retirement plan, or your SIMPLE IRA has become too small.

**Talk to your financial professional**

Thinking about retirement plans in an emotional election year and during a global pandemic might make you nervous. It’s understandable if you just want to stay the course, put your head down, and get back to the exam room. But hiding from financial decisions has repercussions as well, and evaluating retirement plan options might be one of the most positive decisions you make this year. Talk to your financial professional and look into it. You might develop a sense of security, knowing that you’ve evaluated all the options for yourself and your current and future employees.

Darby Affeldt, DVM, RICP, is a financial advisor and associate partner with North Star Resource Group. Her veterinary background inspires her to work with veterinary professionals, offering comprehensive financial planning, asset management, and insurance strategies to help her clients reach their personal and practice planning goals.

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**REFERENCES**


Virtual care
> Continued from cover

Celebrating veterinary technicians everywhere!

NATIONAL VETERINARY TECHNICIAN WEEK 2020

Virtual care

VCCS, an expert panel explored the role of technicians in providing virtual care, including limits and liability considerations, and the benefit of empowering these team members to maximize their skill set.

The technician’s role in virtual care
In many veterinary hospitals, the extent of the technician’s role in telemedicine and virtual care is speaking with clients to perform triage via telephone or email. Although this task is certainly useful, there is much potential to expand their role to benefit both the clients and the practice.

Technicians sometimes fear giving advice, but Serena Pudelski, RVT, owner of The Traveling Tech and Pet Consultant, believes they should feel empowered. While it is true that liability is a relevant concern, the medical knowledge and communication skills of these team members make them more than capable of building strong client connections and providing valuable education without crossing legal boundaries.

Legal limitations
Laws pertaining to the role of technicians in virtual health care vary widely across the country, so it is vital that everyone involved understands the legal boundaries in their state.

According to Pete Bill, DVM, PhD, interim director of the veterinary nursing program and professor emeritus at Purdue University College of Veterinary Medicine, laws do not create the culture—they reflect the culture. We need to shift the culture. The main legal issue relevant to veterinary telemedicine is the definition of indirect supervision. Laws permitting indirect supervision are necessary to fully utilize a technician in the virtual medicine space. In some states, such as Indiana, the definition is quite broad. The supervising veterinarian need only be reachable, and both the technician and the supervising veterinarian need to be within the practice area. The VCPR must already be established, and the tasks the technician performs with indirect supervision should be commensurate with their training, experience, and skills.

According to Pudelski, it is important to understand that technicians may not diagnose patients or prescribe medications in virtual care. They may triage cases, provide client education about previously diagnosed problems, and answer client questions. For telemedicine appointments >>
your calling is calling you

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The future of virtual care in veterinary medicine

Imagine this...
One of your clients wakes up and receives an app notification that their dog has been less active than usual and has been eating erratically. The app provides a graphic display of these events, and asks if the owner would like to connect with a veterinarian for a consult. The owner clicks the ‘yes’ button and has an immediate video consult with a veterinarian, who can view and evaluate all the client’s app data.

After some discussion with the owner and observation of the dog eating during the video consult, the veterinarian suspects that the dog’s change in behavior could be due to a dental problem. The owner agrees to connect with a local veterinarian for an in-person assessment with dental radiographs. Within the app, the consulting veterinarian instantly pulls up a local veterinarian’s schedule and offers various times. The appointment is set for the next day.

On the morning of the appointment, the local veterinarian gets in her car. Her onboard navigation system announces her schedule for the day and describes the first case. The app sends the patient history and activity logs to her mobile phone and to the clinic office, so her technicians are already waiting for the owner and have all the records from the video consult. A fractured tooth is diagnosed during the examination.

Virtual-reality headsets allow the veterinarian to show the radiographs to the owner and veterinary students and discuss them during the diagnosis. The veterinarian reviews treatment options with the client, and surgical dental extraction is planned for that afternoon. Throughout the pre-anesthesia and recovery periods, the owner receives updates through the app, including text messages announcing when the procedure is about to start, video clips of the veterinarian or technicians explaining the procedure and postoperative outcome, and photos showing the dog happy and healthy in recovery.

This is the future
Telehealth is the future of veterinary medicine—and not just in pandemic times. As the inaugural Veterinary Virtual Care Association (VVCA) Summit showed, not only do pet owners crave this type of connectivity and engagement in their pet’s health, but using this technology improves efficiency and revenue for veterinary practices.

More than 3600 industry and veterinary professionals registered for the August VVCA summit, with 1300 live attendees during the 2-day event. According to Ali McIntyre, executive director of VVCA, on-demand viewership was very high in the days following the summit, and both existing and new registrants continue to watch sessions that address the many facets of implementing a virtual medicine component in veterinary practice, including logistics, quality of care, and financial feasibility.

“We’ve received high marks and excellent feedback for the content we delivered, the varied session formats, the positive tone and expertise of the speakers, and the overall excitement the [event] generated for the future of veterinary medicine and the use of virtual care tools to elevate the standard of practice,” says McIntyre.

For more information
The summit program will remain available for viewing, free of charge, until November 15, with continued free CE credits available. Visit virtualcaresummitvet.to register. To learn more about the VVCA or to become a member, visit vvca.org.

Celebrate veterinary technicians everywhere!

that require a veterinarian, the technician can either have the veterinarian join for a portion of the call or facilitate an in-person appointment with the veterinarian and prepare the client about what to expect. All of these activities should be documented in the patient’s medical record, and telemedicine appointments themselves should be recorded and stored.

Changing the culture
Bill understands that most of us do not have the time to figure out how to incorporate telemedicine and the technician model into practice and that the use of this model requires demonstration. Technicians and veterinarians should be educated and provided with evidence that the telemedicine-technician model works.

Credentialed veterinary technicians have a great deal of medical knowledge and are far more than just a pair of hands, and veterinarians should learn how to best utilize these team members. There needs to be more clarification and education on the roles of the veterinarian and technician in terms of liability, efficiency, effectiveness, and legal limitations.

We need to motivate veterinarians and technicians to change the culture. So how do we feel more comfortable with a telemedicine-technician model?

According to Jesse Longo, LVT, operations partner at the walk-in/urgent care clinic Bond Vet in New York, New York, when veterinarians participate in training and goal setting for technicians, they learn their technicians’ skill sets and capabilities and are more invested in their progress. This engagement creates a situation in which veterinarians want to empower their technicians in these roles. Other key factors include the more obvious elements of selecting and hiring technicians who share these goals and enthusiasm, providing solid training programs, and improving client communication skills.

These changing times require changes in perceptions. Technicians should not be afraid to push through barriers and break boundaries, and both technicians and veterinarians may need to consider a new model.

Rebecca A Packer, DVM, MS, DACVIM (Neurology/Neurosurgery), is an associate professor at Colorado State University College of Veterinary Medicine and Biomedical Sciences in Fort Collins. She is active in clinical and didactic training of veterinary students and residents and has developed a comparative neuro-oncology research program at Colorado State University.
Creating a warm, cozy atmosphere in a veterinary hospital is a feat in and of itself. At Hearthwood Veterinary Hospital in Vancouver, Washington, they had the ambience down pat after nearly 50 years in business. “People liked the hominess of our practice,” says co-owner Samuel Kopman, DVM. “We had a special, comfortable ambience that people loved. Our team is fastidious, and the place was always very clean and smelled good, even as an old building.”

However, the size and flow of the practice needed some help. Dr Kopman and his wife, practice manager Renee, bought the business in 2007 and set out to improve on the practice’s charm in a larger, more organized facility. And it happened less than 10 years later.

Not only did the Kopmans get the design they longed for, but they also maintained and even enhanced the environment for which they were known. And that excellence in design earned Hearthwood Veterinary Hospital a Merit Award in the 2020 dvm360® Hospital Design Competition.

Designing for efficiency and comfort
In 1970, the first iteration of Hearthwood Veterinary Hospital came to life as a contemporary, state-of-the-art practice. That facility served the community well for many years. Fast
The doctor’s office has easy access to the treatment area, surgery, and dental suite with visual access of the treatment room whiteboard to monitor hospital activity.

The 5 exam rooms each feature workstations, allowing doctors and technicians to write notes quickly during and after appointments and sometimes even check clients out from the room. The same blue color from the lobby carries over with wood-look vinyl flooring warming up the space.

The pharmacy sits behind the exam rooms for quick access.

The treatment room utilizes a large whiteboard to keep track of cases. This board is seen easily from the doctor’s office as well. Here, staff members can keep an eye on recovering patients in nearby cages. Built-in workstations offer space for team members to access charts.

The fifth exam room is the comfort room, which can easily fit a family with their pet. The room has medical-grade upholstered furniture. When not in use, the exam table is hidden behind a cabinet to give the room a less clinical look. An exterior door allows families to leave privately after difficult appointments.

A spacious lobby offers separate cat and dog waiting areas, separated by a cool-touch fireplace that warms up the often-gray Vancouver days. The area includes a curved reception desk, built-in retail cabinets, moveable seating, and circular pendant lights to brighten the space.
and disinfection of the space.

Artificial turf for quick, easy cleanup.

An outside dog walk area uses Dr Kopman. “We were lucky to build apartments, as well as a retail area,” says Dr. Kopman. The Kopmans decided it forward to 2018, and that contemporary practice was a bit dated and in need of an update. The Kopmans decided it was time to build new and were able to find a piece of land immediately adjacent to the original site.

Designed to fit into the esthetic of the neighborhood, the new 4050-sq ft practice sits at the opening of a subdivision. “We are near a retired airfield that is being developed into a mix of high-density residential and assisted-living apartments, as well as a retail area,” says Dr Kopman. “We were lucky to build

into this growing area, having blind faith that it would work out.”

Previously, with just 3 small exam rooms, clients often had to wait their turn, even for quick technician appointments, and they had to pass through an exam room to get to the back of the hospital. So, a building with clean traffic flow and plenty of space was at the top of the list for the new practice.

And during the pandemic, Dr Kopman is especially glad to have more space that allows him to get clients into exam rooms quickly and to check them out from the exam room. “We have workstations in the exam rooms, allowing us to take notes and wrap up paperwork quickly, allowing clients to check out more quickly,” he says. “Our goal is to get proficient checking clients out in the exam rooms, especially during COVID-19, to minimize time in the waiting area. And, it’s just less stressful for owners and animals altogether, not sitting clumped together in the waiting area.”

Even during the pandemic, Hearthwood Veterinary Hospital has seen a 30% increase in revenue, proving that the new building was worth the expense. “We are doing really well here. It’s been a pleasant surprise,” says Dr Kopman.

A nod to the past

When the Kopmans first bought the practice in 2007, Dr Kopman took down some large cat and dog silhouettes that decorated the outside of the clinic, not realizing what those decorations meant to the community.

Clients immediately let the owners know they missed the iconic designs they associated with the practice.

So, upon moving into the new facility, Dr Kopman had some new signs made. “We carried over a touch of the old to our new facility, giving the silhouettes a more modern touch,” he says. He also added a bench and lawn chairs outside the facility, which have come in handy during COVID-19. He says the chairs give the neighborhood clinic a more welcoming feel.

While their previous facility already evoked the climate their clients loved, the Kopmans knew they could do even more. According to Renee Kopman, adding a cool-touch electric fireplace to the lobby was just the touch they needed. “The fireplace separates the cat waiting area in the lobby, giving a natural division to the space,” she says. “And being here in the Pacific Northwest, where it’s gray and cool a lot, the visual warmth it provides adds to the environment.”

Combined with all the natural light, stone, tile, natural wood, and even a coffee refreshment station, Dr Kopman says it makes for a place where clients say they just want to sit, enjoy a cup of coffee, and relax. What better compliment to a hospital’s design than a client wanting to stay there longer?

Invest in what you want

Budgets are top of mind for most owners when building a new practice. But Dr Kopman cautions that you should never short yourself on what you want in your hospital.

“It’s easy to get sticker shock; everything is expensive when building a practice,” he says. “But don’t compromise on your core principles.”

He says it’s worth it to get what you really want in the long run, within reason. Dr Kopman allowed himself to splurge a bit on exterior features, such as the stonework and some of the larger design elements, as well as the lobby fireplace, knowing that curb appeal and setting a tone are very important.

“I’m really glad we didn’t skimp on this area,” he says. “Of course, that’s not to say you should build beyond your budget. But if you can swing it, do it; get the design you really want, as you’ll have to live with it for a long time to come.”

By the numbers:

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<thead>
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<th>Hospital design</th>
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<td>Photographer: Spencer Redlinger</td>
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Sarah A. Moser is a freelance writer in Lenexa, Kansas.
The collapse of the noncompete in veterinary practice

For many years veterinary practice associates were at the mercy of their noncompete agreement. That’s not quite the case anymore. Here’s why.

Since the dawn of civilization, people have sought to protect their “intangible” assets or “intellectual” property from appropriation by others in the world of commerce. When Felix Hoffman patented aspirin in 1900, the sale of the product was controlled until the patent expired in 1917, after which the name became a generic term for the substance. But during the life of the patent, Bayer made vast sums by having the market all to itself.

Should veterinary practices be entitled to anticompetitive protection?

Virtual any law or contractual provision that limits free trade, restrains free provision of services, or controls use of products or ideas is by definition, anticompetitive. Through legislative action, judicial decisions, and administrative orders, the government has made an ongoing effort to strike a balance between the proprietary rights of the creator of something having commercial value, and the freedom of public and private interests to carry out commercial activity with minimal regulation and government-imposed constraint.

In the case of copyright and trademark protection, the creator’s right to be protected is fairly clear and identifiable, but the specific nature and definition of the protectable interest in a professional practice is mercurial and varies depending on the commercial relationship of the parties.

What exactly do noncompete covenants protect?

When a health care professional is asked to sign a noncompetition agreement, the practice owner is not attempting to protect access to medical records—clients are entitled to have these transferred in virtually all jurisdictions. Is it the relationship between client and associate that the owner wishes to sever by putting a 10-mile noncompete, the associate’s rights of nonparties to the case at hand. For example, when an associate takes a job 5 miles from a prior employer with whom they have a 10-mile noncompete, the associate’s counsel may rely in part on these sorts of arguments:

• Consumers should not be unreasonably burdened by having to travel a long distance to seek care from their preferred provider.
• A more salaried position should not unreasonably interfere with a professional’s opportunity and availability to provide care in a particular community they wish to serve.
• The initial burden of proof in noncompete enforcement should lie with the party attempting to restrain trade, and so prove that such restraint is reasonable and necessary as it is inherently antithetical to the societal goal of fundamentally fair and unrestrained commerce.

Defendants plead the rights of nonparties

Much as the Supreme Court did in Virginia State Board of Pharmacy v Virginia Citizens Consumer Council, lower courts across the country are entertaining arguments based on the rights of nonparties to the case at hand. For example, when an associate takes a job 5 miles from a prior employer with whom they have a 10-mile noncompete, the associate’s counsel may rely in part on these sorts of arguments:

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Christopher J. Allen, DVM, JD, is president of the Associates in Veterinary Law PC, which provides legal and consulting services exclusively to veterinarians. He can be reached at info@veterinarylaw.com.
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The economy is often compared to a roller coaster—a continuous loop of climbs and drops. If that’s the case during normal times, COVID-19 has made the ride that much faster, steeper, and more unpredictable. While we can’t predict the future, it looks like the current situation (or something like it) will be with us for some time. We don’t know exactly how long, but history and research show trends we can expect in the coming months, and point to actions we can take now to strengthen and build practices.

An uptick in business
The veterinary and animal health sectors generally reflect the same conditions as our broader national economy. We’ve all been on the same roller-coaster ride since March. Although we experienced deep lows from March to May, with veterinary practice revenue in some states down as much as 40% year over year, the current situation looks quite different. Currently, average practice revenue is up 15% to 25% year over year, depending on location.1 There are several reasons for this:
• Pent-up demand: Practices are seeing a surge in activity from clients who didn’t bring their pets in during the peak lockdown period from March through June.
• Increased disposable income: Clients may be spending more due to economic stimulus money they’ve received.
• More time spent at home: This often means more home-related spending, including on pets and veterinary care.

Increased pet adoptions: Myth or fact?
Another factor that might explain the surge in practice revenue is an increase in pet adoptions. In fact, adoption is the 1 factor that would have long-lasting implications on the profession. The other factors noted above point to just a temporary surge. But was there really an increase in adoptions? Data from 24PetWatch2 and Best Friends Animal Society indicate that pet adoptions actually weren’t as strong as anecdotes and news stories have made them seem. Looking at the same time frame last year, adoptions are actually lower in 2020 than they were in 2019. This is driven in part by fewer animals being brought into shelters, meaning fewer cats and dogs up for adoption.

The link to veterinary well-being
While a surge in business is good for practices, it’s also introducing new pain points as hospitals try to manage the demand. Plus, along with the added business, practices feel even busier to team members, who are taking on extra work due to social distancing and other new precautionary measures. Burnout, stress, and compassion fatigue are very real concerns. Veterinary teams are stretched thin, trying to manage the effects of COVID-19 both at work and at home. And like many working parents, a lot of team members face additional layers of stress outside of work, including overseeing virtual learning for kids at home or finding childcare.

Supporting our teams is especially critical. One thing...
you can do is develop operational guidelines to streamline new protocols such as curbside care, social distancing, remote payment, and telemedicine. This will help relieve some of the pressure associated with the new workload. Communication and compassion also go a long way in showing team members that we know it’s not easy and we’re there for them.

The same is true for clients, who face similar stressors. Demonstrating empathy isn’t just kind; it’s essential for your business. And it’s an opportunity to get creative in showing clients you care. Some practices have started bringing snack carts out to clients waiting in the parking lot. Others have added more concierge services. Going the extra mile now can help strengthen those crucial client relationships we depend on.

Preparing for what’s ahead
It’s also important to remember this situation isn’t permanent. The demand surge we’re seeing now will taper off, although we do expect some lasting growth. This should offer some relief for busy team members, but it also indicates that our economy still isn’t strong. Many families still face precarious economic situations, and unemployment is high. Some households are facing difficult choices about housing, food, and other spending, including veterinary care.

This is the perfect time for practices to bolster for what’s ahead. The goal is to save as much as possible to protect and build your rainy-day fund, until we have a clearer picture of where the economy is heading. For the next 3 to 6 months, you may want to avoid making lasting changes, such as big equipment purchases, major employment decisions, or remodels.

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The practice management and COVID-19 sections of AVMA’s website have a wealth of resources to help you fine-tune your business strategy, streamline operations, shore up cash flow, maximize purchasing power, and strengthen your competitive edge.

What recovery will look like
Seeing how the economy has responded to the spread of COVID-19, it’s no surprise that economic recovery will be strongly connected to epidemiological control of the virus. As long as COVID-19 cases, hospitalizations, and mortality continue to climb, there will be barriers to economic recovery.

The most likely scenario is that the economy could begin to resemble “back to normal” as early as the third or fourth quarter of 2021, but it could be as late as the end of 2023. When recovery does happen, we expect it to resemble a U-shaped pattern: We’ll have experienced a permanent loss of economic output (GDP level), but the economic trajectory ultimately will have resumed to what it was before COVID-19. Neither economic growth nor productivity is likely to be hurt in the long run. This is a lot like the 2008 recession—not the best-case scenario, but also not the worst. A less desirable possibility is a W-shaped recovery, which would mean another economic downturn.

How will we know we’re in a recovery? There’s no single measure, but a combination of key indicators could signal economic health. These include rises in consumer sentiment, manufacturing and housing market activity, and a decrease in unemployment.

REFERENCES
Reed Animal Hospital is what you might call “a family affair.” James Reed Sr, DVM, started the practice in 1953, and his son, Jim Reed Jr, DVM, joined in 1982. In 2012, the Reed family added a third generation of veterinarians when Susan Reed, DVM, began working at the clinic. Today, the hospital has a staff of 51, with a few Reeds still in the mix, including the practice owner.

At a veterinary hospital, the importance of progressive medicine and customer service is topped only by the demand for capable, honest, and diligent staff members. Most practice owners and managers will tell you that finding qualified staff members isn’t easy. It requires networking, staff outreach, and attractive employment packages. This difficulty is why some practices are willing to hire multiple people from the same family.

Recently, the clinic’s administrative team was debating the merits of hiring multiple members of the same family. On the plus side, they reasoned, the current staff member can provide the owner or hiring manager with greater insight into the history and character of the potential new employee. But there may be a down side as well.

Reed Animal Hospital recently hired a mother, son, and daughter from the same family. During the COVID-19 pandemic, increased workplace stress ignited some friction. The mother felt that her son wasn’t being trained adequately to advance in the practice. The son had expressed no such concern, yet his mother was so troubled about the matter that she spoke to her supervisor and lobbied fellow staff members on her son’s behalf.

The supervising administrator scheduled individual meetings with the mother and her son to defuse the situation. The administrator explained to the mother that she was happy with her performance and her son’s, but it was not the mother’s place to lobby for her son’s advancement. All staff members are individuals who can speak for themselves, the administrator explained, adding that the mother had stirred up drama in an already challenging practice environment. The mother said she didn’t intend to upset her coworkers, but she firmly believed her son’s abilities were being underused.

When the administrator met with the employee’s son, he expressed vastly different sentiments. In fact, he appeared to be satisfied and have no workplace issues.

The administrator told the mother that she appreciated her concerns, but that she would have to follow the practice’s stated protocols for voicing issues moving forward. The mother said she understood, but it was difficult for her to keep silent. The administrator hoped she would not have to lose this employee but knew there was no place for drama in an already stressful clinic.

How would you have handled this dilemma? Have you or would you hire relatives for your workforce? We would like to know. Email your thoughts to dvm360news@mmhgroup.com.

Dr. Rosenberg’s response

The secret to any successful veterinary practice is great team chemistry. Veterinarians are extremely capable and veterinary technicians are the backbone of successful practices. Charismatic receptionists round out the trifecta. To maintain and perpetuate good chemistry, it can be very tempting to reach out to friends and family of current employees as a reservoir for new staff. However, as this dilemma makes clear, doing so can be a double-edged sword. That’s why many practices avoid hiring family members. But this policy could deny talented potential staff members the chance to be part of your team.

I believe the answer comes down to risk taking. Talented employees are valuable assets. When one comes your way, regardless of any staff affiliation, hire them. There may be some issues to sort out, but isn’t that true in every part of our lives?

Dr. Rosenberg is director of the Voorhees Veterinary Center in Voorhees, New Jersey. Although many of the scenarios Dr. Rosenberg describes in his column are based on real-life events, the veterinary practices, doctors and employees described are fictional.
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Surgery pearls: Removing linear foreign bodies in dogs

Most practitioners can confirm that the canine palate includes far more than kibble. Use these tips to make removing linear foreign bodies a little easier.

By Sarah Mouton Dowdy

As anyone who routinely performs gastrointestinal (GI) surgery will attest, all foreign bodies are not created equal. While gastric, and some small intestinal, foreign bodies can be treated successfully in primary care practice, linear foreign bodies can create a much more challenging scenario for the surgeon, and can be potentially life-threatening for our patients.

During a recent Fetch dvm360 conference, Bronwyn Fullagar, BVSc, MS, DACVS, a specialist small animal surgeon based in Canmore, Alberta, offered some great advice for detecting and treating linear foreign bodies in dogs.

"It's important to understand some key techniques for treating them that will greatly improve your patient outcomes," Fullagar said. "In addition to preoperative patient stabilization, gentle tissue handling, and meticulous suture placement, it is really helpful to have had lots of prior experience performing GI surgery on nonlinear foreign body cases before taking on your first linear case. If in doubt, it's never wrong to refer these more challenging cases to a specialist."

Look for gas patterns on radiographs

Fullagar began by sharing a few diagnostic tips she learned from a veterinary radiologist. "One feature of linear foreign bodies that can make them trickier than other foreign bodies to diagnose on x-rays is that about 50% don’t cause any small intestinal dilation that’s visible on radiographs," she explained. But that doesn’t mean you’ll always need to resort to ultrasonography straight away. You just have to know what to look for, and in the case of linear foreign bodies, it’s a characteristic comma- or paisley-shaped gas patterns, often combined with evidence of small intestinal plication and/or loss of serosal detail (Figure 1). If you’re still unsure, abdominal ultrasound is usually the next logical diagnostic step.

Take left lateral radiographs

Another radiography tip Fullagar passed along was to always obtain 3 views of the abdomen, including a left lateral radiograph, on any dog you think might have a GI foreign body. "The left lateral shows what’s left in the stomach," she explained. "When a dog is in left lateral recumbency, the pylorus, on the dog’s right side, will be uppermost. The gas will rise into it and nicely highlight whatever is in the pylorus." In dogs, Fullagar noted, most linear foreign bodies will be anchored in the pylorus.

Figure 1. Characteristic left lateral abdominal radiograph of a dog with a linear gastrointestinal foreign body. Note the foreign material present in the pylorus, plicated small intestine, and comma-shaped gas patterns.

Figure 2. Intraoperative photograph of the dog in Figure 1. There is small intestinal plication. The foreign body is anchored in the stomach and extends to the mid-jejunum.

Figure 3. Following gastrotomy to relieve the anchor point of the foreign material, the material has been gently milked into the mid-jejunum to relieve the plication. Note that the small intestine is erythematous and edematous, and there is bruising along the mesenteric border.
Be prepared for resection and anastomosis
If you suspect a linear foreign body in your patient based on radiographs or ultrasound, Fullagar stressed that you need to be prepared to do an intestinal resection and anastomosis. “About 40% of dogs [with a linear GI foreign body] will have septic peritonitis at the time of surgery,” she said. Intestinal resection-anastomosis usually requires a surgical assistant and is more technically difficult than an enterotomy. “So, if you’re not experienced in assessing the viability of small intestine, or if you haven’t done a small intestinal resection-anastomosis before, make sure you have either a mentor to help or consider referring the case,” she said. “You don’t want to get halfway through surgery and think, ‘I need to resect some of this intestine, but I’ve never done it before.”

Make an appropriate surgical approach
Visualization is key. Start with a celiotomy incision that’s large enough for you to perform a complete exploratory laparotomy. “This isn’t an elective procedure that you’re doing,” Fullagar said. “This is an emergency surgery and good visualization is very important. So, the incision should usually start at the xiphoid and go to the fourth mammary gland of a female dog, or to the tip of the prepuce of a male dog.”

Fullagar also stressed the importance of keeping the abdominal tissues moist throughout the procedure, to avoid postoperative adhesions. “Using moistened lap sponges to isolate the part of the abdomen that you’re doing surgery on will prevent other structures from drying and will also avoid contamination of the abdomen from GI contents,” she said.

Release the anchor point first.
In dogs, this usually means starting with a gastrotomy. Although most abdominal surgery begins with exploration of the abdomen, in cases where there is obvious small intestinal plication from a linear foreign body, Fullagar recommends very gentle handling of the intestine initially, and waiting until the foreign body has been removed before completing full abdominal exploration. “What you don’t want to do is manipulate this very plicated intestine excessively, because you risk causing more damage to the mesenteric border, which may be compromised by the foreign body,” she explained. Instead, Fullagar gently protects the plicated portion with moistened laparotomy sponges and follows the foreign body to its proximal anchor point, which in dogs is usually the pylorus. “Usually you’ll palpate something in a dog’s stomach,” she continued. That’s because, according to Fullagar, dogs tend to eat more “robust” items like toys, pieces of carpet, socks, and dishrags. “Cats are a little different, as they are more prone to eating tiny piece of thread, and the surgical technique is slightly different,” she added.

After confirming the material is anchored in the pylorus, Fullagar performs a gastrotomy. “Don’t forget to use stay sutures to exteriorize the stomach, and isolate the stomach with moistened laparotomy sponges to prevent spillage of stomach contents,” she added. “The stomach of a patient with a linear foreign body is often full of fluid, so if this is the case, an orogastric tube can passed intraoperatively to drain some of this fluid prior to gastrotomy.”

The gastrotomy should be performed close to the pylorus, over the region where the foreign material is palpable (Figure 2). “Then what I’ll do at this stage is exteriorize the foreign body just far enough from the pylorus that I can get underneath the bulk of it and cut it with scissors,” she explained. Referring to a 10-year-old dachshund patient named Olive who’d eaten a handkerchief, Fullagar noted, “It’s important not to pull too hard on the foreign body, as this can cause further damage to the small intestine. It’s very rare that a linear foreign body can be completely removed safely via a gastrotomy incision alone. You’re just going to cut underneath it and then release it,” she continued. “You should feel the remainder of the material move through the pylorus and into the duodenum.”

“Milk” the foreign body to relieve intestinal plication before enterotomy
Once the gastrotomy is com-plete, Fullagar gently “milks” the rest of the foreign body aborally (Figure 3). “You’re getting the part of the foreign body in the stomach to catch up with the part that’s farther down,” she said. “You’re also moving it into a healthier region of the intestine that’s safer for an enterotomy, because now it’s not attached anywhere. Usually the material ends up in the jejunum, which is the easiest part of the intestine to exteriorize for surgery. It’s more difficult to do an enterotomy in the duodenum, because this section is harder to exteriorize and closer to the pancreas.”

And if you’ve started with the gastrotomy, Fullagar explained that in the vast majority of cases, you should be able to remove the entire foreign body through a single enterotomy. Minimizing the number of GI incisions will reduce the risk for postoperative dehiscence.

Evaluate the entire mesenteric border of the small intestine
According to Fullagar, even if you know your patient is going to need resection and anastomosis because you’ve already identified a small intestinal perforation, in most cases it is still helpful to remove the foreign body so you’re able to relieve the intestinal plication and fully assess the mesenteric border. “In linear foreign body cases, the mesenteric border is the place to really check very, very closely along the entire length for perforation—even if the overall color of the intestine is healthy,” she explained. “The mesenteric fat is often edematous, and this can make small perforations quite difficult to visualize. Surgical experience is really important when it comes to assessing intestinal viability.”

Don’t forget postoperative care
Fullagar ended by reminding the audience of the importance of postoperative care for patients who have undergone GI surgery for linear foreign bodies. “These patients may not have eaten for several days prior to surgery, and their intestinal tract is usually significantly more inflamed and edematous than that in patients that have had a solitary intestinal foreign body,” she explained. “The trauma and inflammation caused by the foreign body and plication, combined with general anesthesia and surgical manipulation, can lead to quite significant ileus, and it’s important to pre-emptively treat this to give our patients the best chances of successful intestinal healing.”

“In this is an emergency surgery and good visualization is very important.”

—Bronwyn Fullagar, BVSc, MS, DACVS

In addition to rehydration with intravenous fluids and an opioid for pain relief, Fullagar recommends postoperative treatment with prokinetics and anti-emetics. Enteral feeding, starting within 12 hours of surgery, is also key to intestinal motility and healing, so a nasogastric feeding tube should be considered at the time of surgery for patients who have been anorexic. Referral to a facility with 24-hour care and monitoring can also be beneficial to maximize the chances of a successful outcome.

Remember that time when...
No veterinary surgery lecture on foreign bodies would be complete without a story that confirms the speaker’s credibility and leaves listeners in awe of what the canine body (and the veterinarian’s senses) can endure. Fullagar described a particularly nasty case in which a Labrador retriever got into a trash bag containing contents emptied from the home’s Diaper Genie, bathroom trash, and kitchen trash. “The dog ate the entire trash bag,” she lamented. “So, we induced emesis, and it vomited up 5 diapers. We took another radiograph and could see that the stomach was still very full.” One surgery later, and the dog was successfully emptied of about 5 more diapers, whatever was in the bathroom trash, and some partially digested vegetables.

Hopefully, you won’t come close to topping this case in your own practice. But should the challenge arise, Fullagar’s advice should make the experience less painful.
Shelter Snapshot: Infectious respiratory disease in animal shelters

The widening geography of pet travel has increased an already significant problem in animal shelters and other veterinary facilities that house commingled animals. Here’s the latest.

By Nicole Ferguson-Morrison, DVM

Respiratory disease outbreaks are a major issue in animal shelters, primarily due to the ease of spread and the constraints often imposed by a shelter setting. The potential spread of respiratory disease in boarding, training, and other veterinary facilities can be distressing not only to clients whose pets may have been exposed but also to facility owners and staff.

Pathogens with extended shedding times, as well as novel pathogens, are concerning in veterinary medicine. The relative ease of pet transport within the United States and from foreign countries increases the potential for exposure of foreign animal diseases to pets and wildlife within the United States and bordering countries. Transport exposure was demonstrated recently by the diagnosis of the Asia-1 strain of canine distemper virus (CDV) in a young dog imported from South Korea into western Canada.1

To decrease the spread of respiratory disease in this manner, policies and procedures regarding quarantine timelines and diagnostic testing for pathogens of veterinary importance on all new imports must be created and implemented.

Vaccines: The core preventive measure

Feline upper respiratory infection (FURI) and canine infectious respiratory disease (CIRD) are common in shelters and community pets in the United States. Vaccinations targeting respiratory viruses and Bordetella bronchiseptica are core preventive measures to reduce disease in at-risk populations, including those in animal shelters, boarding facilities, and dog parks.

The pathogens included in canine vaccination protocols include CDV, canine parainfluenza virus, canine adenovirus-2, and B bronchiseptica. Additional vaccines in areas at high risk for exposure include canine influenza viruses H3N8 and H3N2.

Novel respiratory pathogens in dogs for which no vaccination is currently available include canine respiratory coronavirus, canine pneumovirus, Streptococcus equi zooepidemicus, and Mycoplasma cynos.2 Novel respiratory pathogens in cats with no current available vaccination include Mycoplasma felis and S equi zooepidemicus.3 In addition, an array of other bacterial organisms may be associated with upper and lower respiratory tract disease, including Pasteurella multocida, Klebsiella pneumoniae, Escherichia coli, Staphylococcus species, and Streptococcus species, among others.4

Challenges to identifying pathogens

It is difficult to distinguish the causative pathogens of respiratory disease because clinical signs are often similar regardless of pathogen. The consensus is that respiratory disease is usually initiated by viral pathogens, with bacterial organisms causing secondary infections.

The most common clinical signs of CIRD include acute onset of fever, cough, nasal discharge (clear initially unless complicated by secondary bacterial pathogens), and ocular discharge (transient depending on the pathogen). Clinical signs that affect several organ systems (respiratory system, gastrointestinal tract, dermatologic system, neurologic system, ocular system, and urogenital tract) strongly suggest CDV. Common signs of FURI include acute onset of fever, sneezing, nasal and ocular discharge, corneal ulcers, oral ulcers, and conjunctivitis.

Why diagnostic testing is so important

Diagnostic testing is essential to identify pathogens of concern in animals with clinical signs of upper respiratory disease. Pathogen identification assists the veterinarian with isolating clinical and exposed cases, as well as determining the optimal minimal quarantine period. If new cases continue to arise within a facility, it is important to reset the quarantine period back to zero.

The diagnostic method of choice for upper respiratory disease is polymerase chain reaction (PCR) testing.5-7 Most commercial veterinary laboratories offer comprehensive respiratory PCR panels. Not all laboratories test for all pathogens, however, so it is best to communicate your concerns with the laboratory prior to sample submission.

Many US animal shelters identify a low level, or baseline, number of CIRD or FURI cases. Whenever an unusual number of respiratory disease cases or increased cases above baseline are noted in community pets, respiratory PCR testing is recommended. Prolonged duration of illness over what is expected and...
progression of respiratory cases to severe respiratory disease also merit testing.

PCR testing is noninvasive and easy to perform, and most results are available quickly. Sampling can be performed on nasal, pharyngeal, or conjunctival mucosa. It is important to consider the effects of intranasal and oral vaccinations on testing, as false-positive results may occur. The PCR panel does not distinguish between vaccine and wild-type strains either for these pathogens or for CDV. However, a quantitative CDV PCR value can assist in making this distinction.

My PCR testing protocol
I use a wood-handled swab, although cotton, plastic, and other synthetic swabs are also good options. I swab the conjunctiva and oropharynx and submit the swabs in a sterile vial without preservative. I recommend checking with your diagnostic laboratory to ensure that no additional measures are required for submission.

To determine the causative primary pathogen(s), testing should be performed on a subset of clinically affected and exposed animals before antibiotics are administered and within 3 to 5 days of clinical signs. Most pathogens shed for less than 2 weeks. However, prolonged shedding occurs with CDV, canine influenza virus H3N2, B bronchiseptica, Mycoplasma species, Chlamydothila, and S zooepidemicus. Repeat PCR testing is recommended with CDV due to the prolonged shedding period.5

Treatment strategies and prognosis
Treatment of CIRD and FURI is supportive, with close monitoring for the development of secondary infections or pneumonia. The use of antimicrobials should be limited to dogs and cats with signs of upper respiratory infection and fever, lethargy, and inappetence.7 Mucopurulent nasal discharge may resolve with time if a normal appetite and attitude are maintained. Guidelines established in 2017 by the International Society for Companion Animal Infectious Diseases outline the appropriate use of antimicrobials to treat respiratory disease.6 Although these guidelines help determine the most effective use of antibiotics, organizations that house a large number of commingled dogs and cats may need to start antibiotic use in animals with a normal attitude and appetite to reduce the spread and progression of disease. Risk factors for CIRD and FURI outbreaks and recurrent disease in commingling situations include overcrowding, cohousing, lengthy residence stays, improper cleaning and disinfection procedures, and poor ventilation. Proper policies and procedures that address planning, halting the spread of disease, diagnosing the pathogen(s), assessing the level of risk for the facility and the individual animals, and managing the situation will assist with recovering from CIRD and FURI outbreaks.

The prognosis for recovery is excellent in most cases of CIRD and FURI. Many cases are self-limited or responsive to treatment, typically with rapid resolution of clinical signs. Some of the challenging pathogens that require a prompt response by the veterinarian include S zooepidemicus, canine influenza virus H3N2, CDV, and canine pneumovirus.6

Infectious disease | MEDICINE

To learn more about the ASV and to find more information on these and other animal sheltering terms, visit sheltervet.org.

Nicole Ferguson-Morrison, DVM, practices at Lee County Domestic Animal Services in Fort Myers, Florida. She is an at-large board member for the Association of Shelter Veterinarians.

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SHELTER SNAPSHOT
Shelter Snapshot is a collaborative column between the Association of Shelter Veterinarians (ASV) and dvm360.com to help inform veterinarians and team members involved in veterinary shelter medicine and in related aspects of veterinary general practice.
Therapeutic exercises for every patient

Exercise is the key to proper rehabilitation in pets, and you don’t need lots of fancy equipment to make it happen. Here’s what to know before devising a rehab program, plus some exercises that any practitioner can employ.

By Amanda Carrozza

“Therapeutic exercises are the cornerstone of rehabilitation in both people and pets,” says Janice Huntingford, DVM, DACVSMR, CVA, CVPP, CCRT, CAVCA, president of Essex Animal Hospital in Essex, Ontario, Canada. “It’s not lasers, and it’s not underwater treadmills.”

Why exercise?
There are myriad reasons why a veterinarian might create an exercise regimen for a patient, Huntingford says, including to promote weight loss; improve range of motion, muscle strength, flexibility, balance, gait, and proprioception; enhance endurance and performance; decrease pain; and improve healing.

When developing an exercise plan, she advises that the most important thing is to keep your patient top of mind, including its age, injury, diagnosis, available resources, and limitations—with limitations being the most crucial. The client is an important consideration, too.

“I always think about what kind of client I have, because we are doing exercises not just in the hospital,” she says. “I send all my patients home with a recommended exercise program.” Because at-home exercise is vital to the success of a patient’s rehabilitation, veterinarians must tailor exercises accordingly. “The regimen that’s devised must meet the capabilities of both pet and owner,” she says.

Before you prescribe an exercise regimen
Before developing any exercise program, you must first understand the basics of exercise physiology. Type I muscle fibers (slow-twitch, oxidative, stabilizers) promote endurance, whereas type II fibers (fast-twitch, glycolytic, mobilizers) are responsible for strength.

Understanding basic physiology is also necessary to recognize how the injury or immobilization of a muscle group will impact a patient. For example, a dog in a cast or splint will lose 50% of its muscle strength in just 7 days, and geriatric sarcopenia causes atrophy of type II fibers. The veterinarian must also be familiar with the 3 types of exercises and how they work the muscles:

- **Isometric**: A contraction in which the joint angle and muscle length remain static, such as during a plank hold
- **Concentric**: A contraction that shortens a muscle, such as the lifting motion of a bicep curl
- **Eccentric**: A contraction that lengthens a muscle, such as extending or lowering your arm in a bicep curl

Therapeutic exercises for every patient

For the vast majority of her patients, Huntingford focuses on 4 main components of an exercise program: balance and proprioception, core strengthening, endurance, and flexibility. “Then, of course, you should also add in exercises that target the area of injury or disability (eg, hindlimb, forelimb),” she says. Finally, for canine athletes, such as working dogs, you may choose to add in exercises that enhance strength and speed.
To help design an exercise program that best fits the needs and capabilities of a particular patient, Huntingford recommends considering these parameters:

- Frequency (how many times per day or week)
- Speed/intensity
- Duration of work (number of reps)
- Environment (terrain, footing, substrate)
- Impact (high, low, or none)

“My rule of thumb is that you can increase activity by 10% to 15% per week if the patient is doing well,” says Huntingford.

**Exercises every practitioner can recommend**

While water therapy is one of the key components of many exercise regimens—and is often what people associate most with veterinary rehabilitation—Huntingford explains that many exercises that can be done in the practice and at home don’t involve water at all.

**Cavaletti cones**

Cavaletti cones resemble a basic obstacle course and include a low bar set between 2 cones for support (Figure 1). According to Huntingford, this type of exercise is ideal for all geriatric patients and works to increase flexion and extension as well as relieve pain. “This is without a doubt my favorite exercise,” she says.

Setting the bar height for the exercise depends on the dog’s breed and physical limitations. “Cavaletti bars for most patients should be placed no higher than the elbow and frequently much lower,” Huntingford says. “The shoulder would be if you want the dog to be jumping, but mostly it’s going to be the height of the elbow. For the average geriatric dog—unless it is a Great Dane—the bar will only be 1 or 2 inches off the ground. For a dachshund, the bar will stay on the floor.”

**Weaving, backward walking, and high fives**

Weaving involves setting up Cavaletti cones (minus the bars) in a pattern that promotes weaving (Figure 2). Guiding the patient to walk backward builds up hind leg strength and mobility. “This is something we need to be teaching all of our clients from the time their pets are little and then continue working on it, particularly for large-breed dogs,” Huntingford explains.

Encouraging the dog to use its front legs to give high fives is a simple yet effective exercise for animals with elbow ailments. Cats can get in on the fun, too (Figure 3).

**Uneven surfaces and hill walking**

A Bosu balance ball, or even cushions (Figure 4), can provide an uneven surface for the dog or cat while still allowing the pet to keep all of its legs in contact with a surface. These exercises can be used for neurologic patients that are learning to stand again or for patients that need to increase balance or ease back into putting pressure on their front or hind legs.

Having a patient walk on a slight incline enhances strength, stability, and endurance. Huntingford says that while incline treadmills are marketed specifically for dogs, a standard treadmill works just as well.

**Principles of an exercise program**

Every patient is different, so customize exercise programs for each patient. Huntingford advises keeping in mind the following principles when designing and executing an exercise regimen for your patients:

- Consider any underlying pathology that may affect the patient’s ability to exercise.
- Consider the patient’s psychological state and willingness to perform exercises.
- Consider the experience of the client.
- Set short- and long-term goals.
- Evaluate the patient at every visit.
- Ensure proper body mechanics for both therapist and patient.
- Use assistive devices if needed.
- Watch for signs of fatigue.
- Finish on a positive note.
Hatching poultry services in your practice

Companion animal practitioners can take poultry under their wing by incorporating medical care into their practice for these birds and by counseling clients on proper fowl husbandry.

By Joan Capuzzi, VMD

In recent years, chickens have strutted their way into the fabric of domestic life. Along with turkeys, ducks, pheasants, and other birds, chickens are embraced as members of the family, acquired by breed fanciers and 4-H’ers, maintained by locavores who use them for meat and eggs, and taken in by folks looking to rescue the discarded, particularly roosters.

While pet owners know where to look when their cats and dogs get sick, they often encounter snags when seeking medical attention for their poultry, said Rocio Crespo, DVM, MS, DVSc, DACPV, professor at North Carolina State University College of Veterinary Medicine, during a session at the AVMA Virtual Convention in August.

“Unfortunately, poultry veterinarians typically only work with big commercial farms and will not take small poultry flocks as patients,” she said.

Small animal veterinarians to the rescue! Backyard poultry is a niche for veterinarians who wish to dust off their unusedavian books and bring their knowledge and skills to their clients who tend small flocks at home. “The veterinarian can help owners optimize their animals’ well-being by improving poultry management, welfare and biosecurity,” Crespo said.

The menacing chicken

Veterinarians play a role not only in individual bird health, but also in that of the humans who keep them. First, many avian pathogens are zoonotic. Birds are natural carriers of Salmonella and Campylobacter, which can sicken people.1 Domestic fowl can also become ill from viral infections, such as Newcastle disease and avian influenza, which can be transmitted to their human caregivers. Second, because many flock owners use their birds for food, veterinarians need to school them on the judicious use of antimicrobials to prevent contamination.

“Most owners consume the eggs of their feathered friends,” said Crespo, “so we should be careful about the therapeutics we provide, and we must emphasize the importance of disease prevention and biosecurity.”

Objective measures of flock health

By taking a standardized approach to backyard flocks, Crespo said, the veterinarian can harvest the variables that impact birds’ health and well-being:

• Animal-based measures: The veterinary team should take a thorough patient history, and the veterinarian should conduct a methodical physical exam that incorporates all organ systems. This includes addressing body condition, feather scoring, footpad health (eg, intact keratin vs ulcerations), ambulation (eg, lameness, paralysis), respiratory sounds, gastrointestinal health (eg, signs of enteritis), and behavior. “A systematic approach to the avian physical examination is critical, as early signs of welfare problems are subtle and sometimes disguised,” Crespo explained. “The natural defense mechanism of poultry is to appear healthy despite illnesses to avoid predation or harassment by other members in the flock.”

• Resource-based measures: Surveys of the facilities, shelter, air quality, litter, lighting, thermal comfort, feeders, drinkers, security, and euthanasia equipment can help the veterinarian identify potential threats to animal welfare.

• Protocol-based measures: The veterinarian should note husbandry procedures, particularly daily bird observation, animal handling, feeding practices, vaccination and parasite prevention plans, morbidity/mortality records, and caretaker training.

Freeing the birds

Crespo described the 5 freedoms as they relate to the care of poultry.

Freedom from thirst, hunger, and malnutrition

Metabolic and nutritional diseases drive a lot of sickness and death in small flocks and are, in many ways, linked. Take, for instance, fatty liver hemorrhagic syndrome, which is spawned by overfeeding and obesity.2 According to Crespo, the fact that fatty liver hemorrhagic syndrome causes over half of metabolic disease–related deaths in home-based poultry flocks indicates a general lack of knowledge among owners about general poultry nutrition.

Most owners feed their chickens ad libitum, incorporating excessive amounts of kitchen scraps and cracked corn, which is essentially a treat. Weight should be monitored, with birds maintaining an approximate keel-breast muscle angle of about 45%.

Along with advising owners about ideal body condition, veterinarians should coach them about feed choices: mash (fine ground for young birds), crumble (granular meal for growing birds), scratch (medley of dietary components that enable birds to select pieces they want, possibly leading to dietary imbalance), and pellets (homogeneous pieces that represent balanced diet, can be expensive).

Other pitfalls to avoid: flooring consisting of fine sand, which can cause gastrointestinal impactions; waterers hung low and easily spilled, leading to wet bedding that can create mold and ammonia buildup; feeders set low enough to be accessible to rodents; and litter so dry that pathogens become aerosolized.

Freedom from pain, injury, and disease

According to Crespo, most poultry health problems are classified as musculoskeletal, generally caused by trauma from other animals or flock mates. The second most common issue chicken veterinarians see is pododermatitis, or bumblefoot, which is quite painful and multifactorial in etiology. In commercial operations, where it is frequent, bumblefoot results from poor husbandry conditions, such as elevated dietary soybean meal, high pH of droppings, moist litter, and rough flooring.

Moist litter and rough flooring are frequent causes of bumblefoot among backyard flocks as well, although home-based birds often present with the condition because they are overweight from lack of activity, or have overgrown toenails, dry skin, or previous foot injuries.

Perch condition plays a key role in foot health for backyard birds. Sharp protrusions can cause trauma, and narrow perch width (< 4 inches) leads to excessive forces on the feet; both predispose birds to bumblefoot.

Veterinarians should also keep an eye out for neoplasia. Neoplasia of the reproductive tract is common in hens, particularly as birds get older, and is diagnosed more frequently in those maintained for egg laying.4 Also, infectious diseases, such as Marek’s disease in chickens and a
host of zoonotic viral and bacterial infections, are ubiquitous in small flocks—a fact, Crespo explained, that indicates most people do not have the proper health and sanitation practices in place.

Be aware of biosecurity lapses. This includes failure to wash hands, wear dedicated poultry-handling clothing and footwear, and control rodents. Allowing home flocks to have contact with wild birds and the common practice of snuggling with chickens and welcoming them into the home might also be causes for concern.

Sanitation shortcomings can also cause disease because they benefit external parasites, which flourish more successfully in backyard flocks than in large commercial operations, where pest management programs are typically more rigorous.

**Freedom from discomfort**

For backyard birds, comfort means an appropriate environment. Veterinarians who provide care for poultry should be able to counsel clients on their birds’ shelter, nesting boxes, perches, litter, and environmental enrichment.

**Freedom from fear and distress**

In a bird’s eye, fear seeds from many sources. If the source is a lurking fox that whips the flock into a frenzy every evening, the poultry keeper may need to bolster security. Other fear factors, said Crespo, include human handling, transportation, euthanasia procedures, noises, and social unrest. “Poultry experience many potentially stressful events during the production cycle,” she said.

Birds are likely in distress when they have severe or debilitating pain, are unable to stand or walk, cannot access food or water, or have lost weight.

**Freedom to express normal behaviors**

Behavioral freedom hinges on having sufficient space, proper facilities, and company of animals of one’s own kind. “Chickens are social animals and should be kept in groups,” Crespo said. Research on chicken society in the late 1980s uncovered how the birds while away the hours. Foraging takes up the largest chunk, followed by feeding, then walking and, lastly, resting. Chickens spend about 16% of their time in locomotion. Egg-laying behaviors consume much of their waking moments. And when sick, chickens often self-isolate, which leaves them prone to attack by other members of the flock.

But sick birds aren’t the only ones at risk. Feather picking is a normal behavior in poultry, triggered by nutritional imbalances as well as hen hierarchy. Even feather color differences can lead to cannibalism, and Crespo recommends that flocks consist of birds of the same color or birds of 3 or more different colors.

Owners can minimize cannibalism by facilitating environmental enrichment and opportunities for redirection. They should provide hens with hiding places and curtains that encase nest boxes to prevent pecking that sometimes occurs during oviposition.

**Conclusion**

Poultry life is distinct from that of other species, and small animal veterinarians would fill an invaluable niche by providing care for their clients’ backyard farm birds.

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

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The ABCs of veterinary dentistry: When waiting is wishful thinking

When it comes to dental care, sometimes immediate action is a must for your patient’s health and comfort.

By Jan Bellows, DVM, DAVDC, DABVP

Sometimes waiting to perform treatment is the best course of action when a patient presents with dental concerns, as noted in the August issue of dvm360® (“The ABCs of veterinary dentistry: W is for waiting to treat”). But other times waiting is simply not an option—the patient’s problem needs to be addressed immediately.

**Missing teeth**
Dogs should have 42 permanent teeth, cats 30. If 1 or more teeth are not present clinically, it is time for detective work. This involves examining intraoral radiographs to determine whether a tooth is present subgingivally and, if so, whether a pathologic process (periapical lucency) is at play that needs immediate care. Waiting to diagnose and treat can lead to progression of subgingival pathology in these patients (Figure 1).

**Persistent primary teeth**
When a patient presents with persistent primary teeth—primary (baby) and secondary (adult) teeth present clinically in the same alveolus—immediate extraction of the primary tooth is indicated. Persistent primary teeth may overcrowd the dental arch, moving the secondary teeth to abnormal locations and causing oral discomfort. Double sets of roots may also prevent normal development of the alveolus and periodontal support around each permanent tooth, leading to early tooth loss.

Figure 1. (A) Clinically missing left mandibular first premolar in a 7-month-old dog. (B) Radiograph showing the first premolar present but unerupted. (C) Operculectomy was performed to remove thickened gingiva, exposing the premolar and creating a path for eruption. (D) Clinically missing left mandibular first premolar in a mature dog. (E) Radiograph showing an unerupted first premolar that created a dentigerous cyst requiring oral surgery.

Figure 2. Persistent primary right maxillary canine tooth causing swelling and rostral displacement of the secondary canine.

Figure 3. Bilaterally fractured maxillary deciduous canines. Extractions are indicated as soon as possible.

Figure 4. (A) Discolored left maxillary first incisor. (B) Radiograph showing an enlarged root canal consistent with a non-vital tooth. Extraction or root canal therapy is indicated.

Figure 5. (A) Facial swelling below the left eye caused by a complicated fracture of the left maxillary fourth premolar. (B) Root canal therapy or extraction is indicated as soon as possible.

Figure 6. (A) Marked inflammation surrounding a cat’s left mandibular cheek teeth. (B) Resolution 6 months after full-mouth extraction.
A persistent primary tooth should be extracted as soon as the permanent tooth is observed to erupt in the same alveolus. When extraction is performed early, the abnormally positioned permanent tooth ideally moves into normal position. Extraction must be done carefully to avoid accidental damage to the unerupted, permanent canine tooth that lies lingual to the mandibular teeth and rostral to the maxillary deciduous canines. Avoid placing the elevator along the lingual surface of the mandibular deciduous teeth. Instead, only elevate along the mesial surface (front), labial surface (toward the lip), and distal surface (caudally) of the mandibular deciduous teeth, and buccally and distally around the maxillary deciduous canines. Examination of intraoral radiographs before extraction is important to confirm that the tooth about to be extracted is a primary tooth (Figure 2).

Fractured deciduous canine teeth

Normally, deciduous canines exfoliate by 6 months of age. Occasionally, the crowns fracture secondary to chewing on hard objects. Waiting to extract a fractured deciduous tooth can lead to periapical infections and discomfort (Figure 3).

Discolored teeth

Discolored teeth are considered nonvital. Discoloration commonly occurs secondary to concussive or thermal trauma that results in internal bleeding and pulpal necrosis. Dull pain is reported by humans from pulpitis in discolored teeth. The treatment of choice for discolored teeth in dogs and cats is either root canal therapy or extraction of the nonvital tooth (Figure 5). Successful treatment in these cases involves root canal therapy or extraction of the fractured tooth (Figure 2).

Plaque and tartar with inflammation

Once plaque and tartar result in gingival inflammation, it is time for professional dental scaling, irrigation, and polishing under general anesthesia. Treatment in these cases should not wait until the annual dental exam.

Tooth resorption that is exposed into the oral cavity

We still do not know the cause of external tooth resorption in dogs and cats, but we do know that once the resorption is exposed to the oral cavity, bacteria invades the pulp and causes inflammation and pain. Waiting, antibiotics, and anti-inflammatory medication are not indicated. Extraction is the treatment of choice.

Feline gingivostomatitis

The etiology of gingivo-stomatitis is believed to be multifactorial. This creates a challenge for any successful treatment other than full-mouth or selective extractions. In rare mild cases, stringent plaque control and a change in diet may be curative. Treating with prednisolone steroids or antimicrobials is wishful thinking with only short-lived improvement. In cases of refractory stomatitis despite extractions, CO2 laser ablation, with or without every-other-day oral prednisolone administration, shows promise in relieving inflammation (Figure 6).

Overcoming client concerns

Expense

Thanks to wellness plans that include dental evaluation, scaling, polishing, and full-mouth intraoral imaging, fees for needed dental care are less of an issue than they once were. Clients who understand the ramifications of dental disease and believe their dog or cat needs dental care will find a way to afford it. In-clinic and third-party payment plans are an option for most clients, and many pet insurance plans cover dental diseases as long as the pet was covered before the diagnosis was made.

Anesthesia

Some clients are hesitant to proceed with recommendations because they fear general anesthesia will harm their pet. Thanks to Fear Free preanesthetic patient evaluation geared to the individual patient’s age and condition, patient-tailored preanesthetic and induction medication regimens, and close anesthesia monitoring during and after the procedure, anesthesia is considered safe with only rare adverse events.

Waiting in most of the cases outlined here is not wise and can lead to harm. When the moment of truth occurs during an oral exam, it is wise to be proactive in advocating for your patient. Your patient and client will thank you.
Here are the CE opportunities coming in the next few months

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

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

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

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

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**NOTE:** Many 2020 and early 2021 CE events are now being held online. Please visit individual event websites for details.
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PH•notix, from Vetoquinol USA, is a pH-neutral, oil-free, triple-action formula that quickly removes cerumen and debris from cat and dog ears. The product contains proprietary lipacides that help support sebum regulation and balance in the ear, reduce cerumen accumulation, and support the skin’s natural protective barrier. Additionally, tromethamine serves as a neutralizing base for PH•notix. The product does not require rinsing and does not interfere with certain topical medications.

For more information, visit vetoquinolusa.com

ProCyte One Hematology Analyzer
Analyzer for point-of-care testing

Idexx Laboratories’ ProCyte One Hematology Analyzer, scheduled for release in early 2021, uses advanced technology to deliver workflow simplicity and accurate point-of-care test results in less than 5 minutes. The product offers reference lab–quality results and features an onboard camera, reticulocyte counts with every complete blood count, automatic quality control and load-and-go components, clinical decision support tools, and a sustainable design. Early sales are currently underway in North America.

For more information, visit idexx.com

BRAVECTO 1-Month (Fluralaner) Chews
Monthly parasiticide for dogs

Merck Animal Health has announced the FDA approval of Bravecto 1-Month (fluralaner) Chews for dogs. This flavored chewable is indicated for the treatment and prevention of flea infestations (Ctenocephalides felis) and the treatment and control of tick infestations (Ixodes scapularis, Dermacentor variabilis, and Rhipicephalus sanguineus) for 1 month. The product can be given to dogs and puppies 8 weeks of age and older, weighing 4.4 pounds or more, and is available in 5 strengths: 45, 100, 200, 400, and 560 mg.

For more information, visit merck-animal-health-usa.com

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The unexpected joys of Friday afternoon

An afternoon of errands turns into a full-on gamble—with wins all around.

A few years back, I started taking Friday afternoons off and I love it. One Friday afternoon, I was in town running errands and stopped at a local convenience store to fill up on gas and grab a bottle of water.

In front of me in the checkout line stood 3 men who I figured were welders, based on their short-brimmed caps and the rig I saw in the parking lot. It was just shy of 4 pm, which meant these fellas were getting a head-start on the weekend. As I listened to them cut up about weekend plans, I could tell they were a fun bunch.

$76 in scratch-offs

“I want $76 worth of scratch-off tickets!” the first welder requested when he reached the front of the line, telling the checker exactly which ones he wanted and asking her to kiss each ticket for good luck. The second welder also asked for $76 in scratch-offs and for the checker to rub his $100 bill before she put it in the register.

When the third welder came up to request his $76 worth of tickets, the checker had already dropped them on the floor and was stepping on them, a clear sign that she knew both this group and their ritual well.

Then it was my turn to check out. I had a $10 bill. The total for my items was $3 and change. The checker asked me if I wanted some lottery tickets, and I said yes. I had never purchased scratch-off tickets in my life, but those guys made it look like a blast. I could see them through the window, standing around their welding truck, scratching off their tickets and having a ball.

I walked out the front door with 4 lottery tickets and asked the welders how their luck was going. They had already scratched off 4 or 5 tickets, comparing who had won the most so far.

Scratch game

“You want in on this?” Welder 1 asked me. “Every Friday we come here and buy $76 worth of lottery tickets, and whoever wins the most has to buy beer for the weekend for all of us.”

“I only have 4 tickets, and I really don’t even know what I am supposed to do with them,” I answered.

“We’ll all scratch 4 tickets, and whoever wins the most will buy the beer. What do ya say?” said Welder 2.

We all gave approving nods, they each choose 4 tickets, and we started scratching off 1 at a time. I am not a beer drinker at all, but this was turning out to be fun.

I went last in the first round. Welder 3 won $1, and when I began scratching the card with a dime, they started making fun of me. They said I scratched like a rookie and told me to get my pocketknife out and do it like a veteran. So, I got out my knife and went to work. Of course, the welders got a kick out of the fact that my first card was a dud.

I went first in the second round, using my newfound swagger as a pocketknife scraper to win $13. None of their cards were winners this round, which meant I took a whopping $12 lead.

In the third round all the welders received duds, and I won an additional $5, giving me a $17 lead. I began to wonder how much beer these guys were going to want if I won.

The first 2 welders in the fourth round got nothing, and then it was my turn. They made dramatic noises as my first few scratches were leading to a chance at a big hit. When I scratched off the last square, they all jumped around, high-fiving each other and acting as if they had just won the Super Bowl.

“He won $210! We’ll have beer for the entire week,” Welder 3 shouted. “Yee-haw!”

Caught up in the excitement, I joined in on the jumping and high-fiving. We celebrated for a good 5 minutes before a welder said, “let’s go cash it in and by the best beer in the store!”

I gave them the ticket and told them that I wasn’t a beer drinker but that they could spend $70 apiece on all the good beer they wanted. They were thrilled, thanked me for the fun, and then hurried off.

As I walked back to my truck, I saw the logo on the side of the welding rig—76 welding. Now it all made sense.

What comes around

A few weeks later, I entered my practice’s horse barn in search of a new client with a lame horse. There stood a chubby fellow who asked if I recognized him. I thought maybe I had seen him before, but I couldn’t remember where.

“I am one of the guys you bought $210 worth of Michelob for a few weeks back!” he exclaimed.

I started laughing out loud. “Yes…yes you are. But how did you know you were bringing your horse to the scratch-off guy?” I asked. “We never even exchanged names.”

“We all knew who you were. I usually take my horse to a doc over in Odessa, but after watching you have a great time competing with 3 total strangers for beer that you don’t even drink, I decided I want you to work on my horses from now on!” he said.

There you have it. You never know how any given moment in life will go, or the friendships that come from it. I ended up gaining all 3 of those welders as clients and friends.
Clarifying raw diets

It was gratifying to read the recent article by Lynsey Rinelli, DVM (“What you need to know about today’s veterinary diet trends,” August 2020) and especially her even-handed treatment of a subject often fraught with emotion. These trends are changing the way we understand nutrition and respond to our clients. For these reasons, it’s important report on them accurately.

The author notes that some raw diets “are not marketed as complete or balanced, so they are typically fed as a rotation product rather than as the main diet.” In fact, we would estimate that a large number of commercially available raw diets from smaller companies do not carry a nutritional adequacy statement for a complete and balanced food, yet they are indeed meant to be fed as complete diets. The reasons for this range from a lack of education on pet food regulation to a belief that complete and balanced nutrition is unnecessary for optimum health. We point this out to warn veterinarians that pet owners may be receiving instruction that such diets are complete despite the lack of a nutritional adequacy statement.

The article goes on to state that, “Most clients feeding their pet a raw diet use a combination of RMBDs [raw meat–based diets] and traditional ingredients (eg, yogurt, eggs). This allows for supplemental feeding of carbohydrates, fiber, vegetables, and other sources of nutrition the pet needs.” We believe this information is based on the widespread assumption by most veterinarians that raw feeding is homemade feeding. There are responsibly produced, complete and balanced, pathogen-free raw diets available commercially, and we know of no data to say that homemade raw diets are more widely used than commercial raw diets. In point of fact, most publications about raw diets make the distinction between raw and conventional diets as “raw,” “RMBD,” or “RAP” (raw animal products) as opposed to “commercial” foods. It is important for veterinarians to be aware of the differences when taking a diet history, both from a safety perspective as well as for establishing nutritional adequacy.

The most prominent mischaracterization is the following: “Because RMBDs do not undergo proper treatment to reduce pathogenic organisms, the biggest concern surrounding them is the bacterial load they carry.” Responsible raw pet food companies treat their finished formulas with high-pressure processing (HPP)—the same process used for smoothies, hummus, and bagged frozen stir-fry meals in grocery stores. Some use multihurdle technology that includes environmental controls and probiotic inhibition as well as HPP. The author mentions that some hospitals segregate animals being fed raw diets, and some will not admit them at all. It is worth noting that one of the largest specialty hospital corporations in the United States had such a policy but excepted commercial HPP-treated raw diets.

Very few commercial raw pet food companies take extraordinary measures to ensure their foods are safe, and complete and balanced. To assess an owner’s choice of commercial raw food, I would suggest that veterinarians use the World Small Animal Veterinary Association guidelines5 to obtain a diet history, and add an additional 5 questions if an owner indicates they are feeding raw:

- What microbiological testing do you perform for incoming raw materials?
- How do you measure your sanitation effectiveness?
- What kill step(s) do you use? If yes, have you completed a validation study? What criteria are used to determine that a new validation study is necessary?
- What is your test and hold procedure? Which pathogens are tested before the product is released?
- If the raw product is freeze-dried, do you perform a kill step prior to freeze-drying the product? If not, what is your test and hold procedure and what pathogens are tested for?

An international study published this year indicated that a majority of pets (66% of dogs, 53% of cats) were offered raw foods as part of their normal diet. These numbers appear to have risen significantly since 2008, and only 13% of dogs and 32% of cats were fed conventional foods exclusively.6 We postulate that this sustained growth is due to true benefits observed by more and more pet owners. While data are lacking as to whether these benefits really exist, studies have been initiated.

The DogRisk study from the University of Helsinki is a longitudinal web-based epidemiologic study, similar to the golden retriever lifetime study. A recent publication from that study indicates that dogs fed raw as young puppies or whose dams were fed raw have a lower incidence of atopic dermatitis after they reach 3 years of age.7 Other studies underway now have shown that raw foods are free of harmful advanced glycation and peroxidation end-products, and are more nutritionally complex.8

Times have changed. Veterinarians should familiarize themselves with commercial raw diets and be willing to take part in an educated discussion with their clients who want to feed raw.

Susan G. Wynn DVM, DACVN
Instinct Pet Foods
St Louis, MO

REFERENCES

Author response

Thank you for your response. I appreciate your interest and feedback. There is still an abundance of information of which most veterinarians and owners are unaware. I feel that the more experienced and dedicated owners do focus on the safety of their pets and family by how they prepare and where they purchase their food (eg, sporting, working dogs), although the general population remains largely unaware of proper preparation and resources. I hope more owners and veterinarians continue to prosper and learn about an ever-growing topic.

Lynsey Rinelli, DVM
Mount Laurel Animal Hospital
Mount Laurel, NJ

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