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JUNE 2021 | Nº 43

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COREY VAN'T HAAFF
EDITOR

TO THE EDITOR

Letters from members are welcome. They may be edited for length and clarity. Email us at wcveditor@gmail.com.

ON THE COVER

A resident roo relaxes at Kangaroo Creek Farm in Kelowna. Photo courtesy Adam Skalzub Photography.

If you had told me that in June 2021 we would still be repeating our request to the BC government that we need to increase the number of seats at WCVM from 20 BC students to 40 BC students, I would have thought you were likely misguided. Surely the BC government, specifically the Minister of Advanced Education, wouldn't say no to what must be one of the easiest yeses all year. The Chapter has demonstrated the dire need for more BC veterinarians with its 2019 Labour Market Study, funded by the Minister of Advanced Education. It said we will be short 100 veterinarians each year for the next five years.

I'm seeing that come true. Clinics that had five veterinarians are running on a skeleton crew of one full-time and one part-time. Clients are waiting days, weeks, and now even months for procedures like spays and neuters. Certainly this is not happening in every clinic, but I get enough phone calls in a week to know that what affects one clinic now will affect several others in the weeks to come.

My biggest wake-up call then, is not that we are still fighting the good fight to get these additional and available 20 seats, but that the Minister of Advanced Education—the second one since 2018—is still unwilling to meet with us to hear our concerns face-to-face (as of May 27, the time of writing this message). She did schedule a meeting with us but cancelled nine days before the meeting, citing an upcoming urgent meeting with the premier at the exact time of our scheduled call.

To make matters worse, she would not reschedule until her executive team advised her. So we scheduled a meeting with her deputy minister. At the appointed time, all eight of our directors and I signed on and waited. Five minutes later, we started texting each other asking what was going on. Ten minutes later, we started questioning what we were doing. When 20 minutes had ticked by, I called the ministry and was told that they never had any intention of attending that meeting but were really sorry they forgot to tell us. To say there are those among us who feel disrespected is an understatement.

We share this information because the shortage of veterinarians affects almost every animal owner in BC, from owners of companion animals to rescue groups; from bird and exotic animal owners to horse owners; from food animal producers to hobby farmers. We know the shortage will not get better until it is addressed. We know it will get worse. We will keep fighting this fight on many fronts because our focus is on you, our members, and on your profession. We will keep doing everything we can to provide you with what you need.

Email: wcveditor@gmail.com

PLEASE WELCOME LILY LAVERTON, ADMINISTRATION COORDINATOR

Lily comes to the chapter with an eclectic and extensive background working for both for-profit and non-profit organizations. She is delighted to be working with the Chapter to help make life better for people and indirectly for animals. She is passionate about coordinating conferences, education sessions, and special projects. She thrives on adding value and making a difference. When she is not working, she volunteers as a district leader for Toastmasters, as well as with Emergency Support Services. Her cat, Preston, fits in perfectly with her busy lifestyle. WCV

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WEST COAST VETERINARIAN

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CARSTEN BANDT, DVM, DACVECC, graduated from the Free University of Berlin, Germany, in 1997. He followed this with an internship and residency in small animal internal medicine. From 2003 to 2006, Dr. Bandt completed a residency in emergency and critical care at the Tufts University Foster Hospital for Small Animals before starting the emergency and critical care service at the University of Florida and working as an Assistant Professor for Emergency and Critical Care at the Department of SACS. In 2015, his family moved to Vancouver and he started working at the Emergency Critical Care Department of Canada West Veterinary Specialists.

LAURENCE BRAUN, DVM, DACVECC, graduated from the University of Montreal in 1986. She joined the team at Dr. Hosie's Vancouver Animal Emergency Clinic, one of the few 24/7 hospitals operating in Canada at that time, and spent the first 10 years of her veterinary career there, eventually becoming chief of staff. During that time, Dr. Braun pursued a residency in emergency and critical care medicine, obtaining her boards in 1996, making her only the second boarded criticalist in Canada and the first in BC. In 1997, she started Canada West Veterinary Specialists (formerly Animal Critical Care Group) with like-minded specialists. In 2015, she became the managing partner at Canada West, where her focus remains on continually improving patient safety and procedural outcomes.

JACOB K. BRYAN, BSc, graduated in 2018 with a Bachelor of Science and is currently pursuing a master's degree at the University of Victoria. His primary focus is on post-traumatic stress disorder (PTSD), in particular the potential positive effects that high-intensity interval training has on PTSD symptomology. He hopes to show the effectiveness of exercise as a means of treating mental illness and to demonstrate that exercise is one of the most valuable forms of medicine.

JUDY CURRIE, DVM, is a 1986 WCVM grad who spent the majority of her practice life in Saskatoon despite being from Vancouver. She worked for several years in small animal practice and about 10 years with the CFIA. Before retirement and following the sale of her practice, Dr. Currie spent seven years as the registrar for the Saskatchewan Veterinary Medical Association. During her career, she sat on Council as well as several SVMA committees. She is a chronic volunteer, a trait that has followed her into retirement. She continues to do committee work for the American Association of Veterinary State Boards. Always wanting to be near mountains, she is now mostly retired in Fernie working part-time as an associate veterinarian.

THOMAS EDE, MSc, PhD, is a post-doctoral research fellow at the University of British Columbia's Animal Welfare Program. He recently defended his PhD thesis on the topic of pain assessment in dairy calves. His current research focuses on castration and disbudding pain, as well as the importance of social contacts in young calves.

CECILY GRANT, DVM, graduated from WCVM in 1989 and has spent much of her career as a small animal locum on Vancouver Island. She has also worked for the BC SPCA, worked as a consultant and member of the Animal Care Committees for a biotechnology company and the University of Victoria, and served on the Animal Welfare Committees of the CVBC and the CVMA-SBCV Chapter. She holds a Certificate in Laboratory Animal Medicine from the University of Guelph and is a member of the Honeybee Veterinary Consortium. When not practising, Dr. Grant enjoys sailing and playing her bagpipes.

MARINA VON KEYSERLINGK, PhD, grew up on a cattle ranch in British Columbia. She joined UBC's Animal Welfare Program in 2002 and was appointed as an NSERC Industrial Research Chair in 2008. She is recognized internationally for her research on the care and housing of dairy cows and calves.

ELAINE KLEMMENSEN, DVM, is always up for an adventure, especially if it involves people, pets, and creating connections within the veterinary profession. Her adventures in veterinary medicine have included being an associate veterinarian, partner, practice owner, locum, and international volunteer. Passionate about leadership development and workplace culture, she recently embarked on her latest adventure, founding Evolve Leadership Coaching and Consulting where she is determined to help veterinary leaders discover the "secret sauce" that will move their team from surviving to thriving. A student at Royal Roads University, Dr. Klemmensen is a graduate of the Values-Based Leadership Certificate and is currently enrolled in the Executive Coaching program.

KAREN VAN HAAFTEN, DVM, DACVB, graduated from Ontario Veterinary College in 2009. After several years in small animal private practice, she developed a passion for clinical behaviour and completed a residency at the University of California, Davis. Now a board-certified veterinary behaviourist, she is the senior manager of behaviour and welfare at the BC SPCA. In this role, she supports 36 networked sheltering branches with their behaviour caseload and also consults on cruelty investigation cases and provincial animal welfare policy work. Her research interests include psychopharmacology, behaviour modification for undersocialized cats, and humane training methods. She lives in Vancouver with two fluffy cats.

LOUISE LATHEY, BLES, completed her Bachelor of Law Enforcement Studies at the Justice Institute of British Columbia and uses her knowledge of the law in her work at the BC SPCA. Her passion for animals has led to cross-sector collaboration on helping vulnerable people and pets. Her master's research in criminal justice at the University of the Fraser Valley explores the rationale behind animal cruelty with a focus on how it relates to other types of crime.

MARCO VEENIS, DVM, graduated with distinction from Utrecht University in 1988. After graduation, he was a partner in a small animal clinic in his native Holland for 10 years before moving to British Columbia. He owned and operated Okanagan Veterinary Hospital in Kelowna until he sold it in 2014 to NVA. Since then, he has remained working at the clinic on a part-time basis. He has served as the president of the CVMA-SBCV and is currently a Board member and the liaison for the CE committee.

DANIEL M. WEARY, DPhil, is a professor and NSERC Industrial Research Chair at UBC. He studied biology at McGill and Oxford, and went on to co-found UBC's Animal Welfare Program where he still works and co-directs this active research group. He was recently awarded UBC's Killam Research Prize.

22
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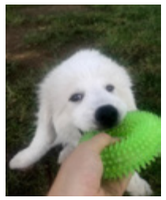
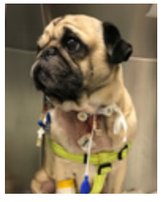
JUNE





Hello and best wishes for a great summer. Hopefully you have had some down time and been able to get out and enjoy the natural wonders we are so fortunate to have in abundance in our province. By now I also hope that all of you who want to have had at least one dose of vaccine, hopefully two by now. Enjoy some time with those you have not seen for far too long. We are going to win this struggle.

I want to offer a very warm welcome to our new registrar at the CVBC, Dr. Megan Bergman. I know the Council went to great lengths to review what the registrants were looking for and did their due diligence to find someone who met their needs and would provide what the registrants were hoping for. Dr. Bergman has had a variety of experiences in regulatory medicine over her career since graduating from WCVM in 2002. She started in private practice then progressed to working for the CFIA where she rose through many positions to become the regional director for the CFIA in Manitoba. Her next step was to become the chief veterinary officer for Manitoba. She has also had time with the National Farmed Animal Health and Welfare Council. During her years she has been involved in regulatory veterinary medicine. We are pleased that Dr. Bergman and her family have joined us in BC.

While we are welcoming our new registrar, we are saddened to be saying goodbye to our interim registrar, Dr. Jane Pritchard. When the CVBC was looking for someone to take over the registrar position due to the sudden loss of their registrar, the Chapter reflected on the support and assistance that Dr. Pritchard had provided during her years of service as chief veterinary officer for our province and suggested that she be considered to lead the CVBC on an interim basis. She has done a wonderful job at creating better communications and in working with her colleagues.

The CVBC is to be commended for looking at how it functions and initiating in-depth strategic planning. The CVBC is aware that a number of registrants are not happy with how it treats them. Some registrants may not always understand that the CVBC exists due to legislation and that its mandate is to serve the public by making sure that veterinarians live up to standards and by providing a mechanism for the public to be able to complain or be assured of a minimum standard of practice. The CVBC is not really for us, but it is about us and how we work. We are fortunate in that the registrants are sometimes asked for their opinions before regulations and standards are developed or changed.

We are pleased that the CVBC has continued to work well with the SBCV and that we have seen improvements in how the CVBC listens to concerns and collaborates in ways that benefit registrants. A lot of this has been through the relationship between our executive director and Dr. Pritchard. Our Board and the CVBC council had a virtual meeting in March to discuss issues of common concern. We discussed a variety of issues from animal welfare to unauthorized veterinary practice. We have a strong council leading the CVBC, and we look forward to continuing to work with them. By working together, we can better serve the public and veterinarians.

In closing, I want to express my deep appreciation and thanks to Dr. Pritchard for what she has done for the animals in our province and in our country, and for our profession. She has been a firm supporter of animal welfare and for the health and care of farmed animals. She had an impact on the WCVM while she sat on its Advisory Council. It has been a privilege for me to have been able to work with her. Dr. Pritchard has had a wonderful career and deserves some time to relax and enjoy less stress in her life. Somehow, I don't think she will be very far away, as she has so much to offer.

Thus, sincere gratitude for all that you have done, Jane, as chief veterinary officer and as CVBC registrar. I was consoled when we learned that you knew Dr. Bergman and felt she would make a terrific registrar for the CVBC. I will be able to rest easy knowing that she will fill the void that you will leave when you retire for the second time. WCV

Al Longair, BSc, DVM, graduated from the Western College of Veterinary Medicine in 1977. After graduation, he joined a mixed animal practice in Duncan, focusing on small animal practice from 1981 on. He has been involved with the BC SPCA for over 20 years, serving as the president of his local branch for 12 years and on the provincial management committee for 10 years, with four years as president. In the early 1990s, he served as chair of the CVMA Animal Welfare Committee. He lives on a small acreage with his wife, three horses, three dogs, and two cats and coaches youth soccer in his spare time.

As your CVMA president, it's my pleasure to provide you with updates on some of the CVMA's initiatives.

REGISTRATION IS NOW OPEN FOR THE 2021 CVMA VIRTUAL CONVENTION

Given the pandemic, the resulting uncertainties, and keeping health and safety top of mind, the CVMA Council decided to pivot and host the 2021 CVMA Convention in a virtual format only, without any in-person events. We are pleased to offer more registration savings:

- CVMA members: $49 (save $546)
- Nonmembers: $149 (save $646)
- Veterinary students: free

Take advantage of this year's incredible discounts. Please visit the convention website for more information: pheedloop.com/register/cvma21/attendee.

CVMA COUNCIL APPROVED A REVISED POSITION STATEMENT ON INDUCED MOULTING OF POULTRY

Position: the CVMA is opposed to moult induction involving deprivation of food and/or water and recommends that induced moulting only be used in response to unforeseen emergency situations. Visit the "Policy and Advocacy" section of the CVMA website to read the full position statement.

ANIMAL HEALTH WEEK 2021—ANIMAL HEALTH + HUMAN HEALTH + PLANET HEALTH = ONE HEALTH

Each year, through Animal Health Week, the veterinary community draws attention to an important health-related message. The CVMA is proud to have celebrated Animal Health Week across the country for more than 30 years. From October 3 to 9, 2021, the CVMA will showcase the importance of One Health and what that means. This year's theme is "animal health + human health + planet health = One Health," and the 2021 Animal Health Week campaign key messages are:

- It is more important than ever for people to understand the critical links between animal, human, and environmental health.
- Animals, people, and the environment: keeping one healthy requires that all be healthy.
- The veterinary profession holds significant roles and responsibilities to safeguard One Health.
- Veterinarians are One Health practitioners by protecting the health and safety of animals, and in turn, people and the environment.
- Veterinarians have critical One Health roles in food safety, environmental protection, and public health.

Please visit the Animal Health Week section of the CVMA website for more information: canadianveterinarians.net/practice-economics/animal-health-week. WCV

Enid Stiles, BSc, MSc, DVM, completed a BSc in Biology at the University of Ottawa before graduating with her DVM from the Ontario Veterinary College in 2000. Upon graduation and while working as a clinician, she went on to complete a master's in Clinical Sciences (Behaviour Medicine) at the University of Montreal. Dr. Stiles has been fortunate to work with people and animals around the world as a founding member of Veterinarians without Borders Canada. She works closely with Montreal-based cat and dog rescue groups and has been a regular presence in print, television, radio, and social media in recent years, advocating for current national and international animal health issues. Her interest in veterinary behaviour medicine and animal welfare includes ending feline partial digital amputation (declawing) and teaching low-stress handling techniques in clinics. Dr. Stiles runs her own small animal practice, Sherwood Park Animal Hospital, with her husband Yannick Massicotte as co-owner and hospital manager. Dr. Stiles lives in Montreal with three children, a dog, two cats, and her husband. When she's not working, Dr. Stiles likes to go to the gym, ski, travel, and watch her children on the field or rink.

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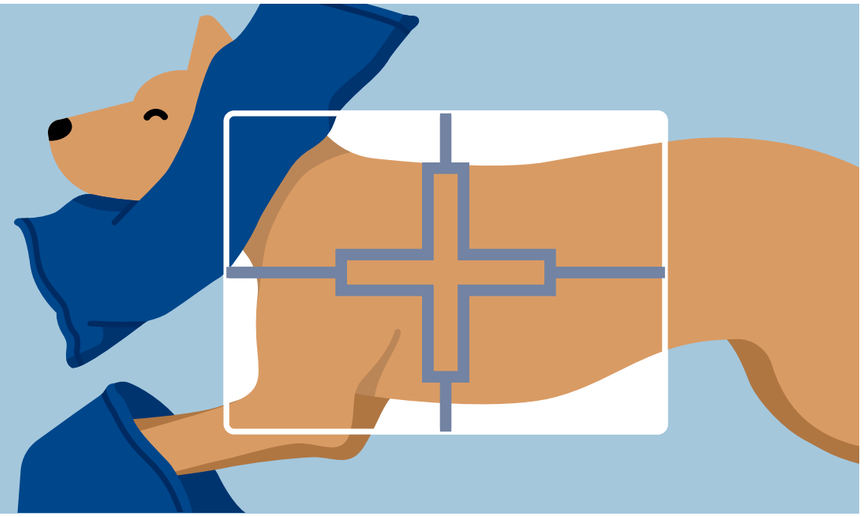

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THINKING OUTSIDE THE BONE BOX:

3D PRINTING IN VETERINARY MEDICINE

BY MADISON AUDEAU

"YOU KNOW THAT FEELING, WHEN AFTER BECOMING KEENLY AWARE OF SOMETHING, SUDDENLY IT FEELS AS IF YOU'RE NOTICING THAT THING EVERYWHERE?"

"I actually designed these [cookie cutters] myself and got them 3D printed," Sheldon said to the judges as he prepared marbled tahini Linzer cookies with apricot, rosewater, and crème de noyaux marmalade for an episode of *The Great Canadian Baking Show*. It was clear from the judges' reaction that he was scoring serious points in the episode's baking challenge with the intricate and precise geometric cut-out patterns on the cookies.

You know that feeling, when after becoming keenly aware of something, suddenly it feels as if you're noticing that thing everywhere? As the new owner of a 3D printer, my ears perked up at these words during a recent final exam study break/television binge. I seem to be hearing about 3D printing everywhere lately, but I think it's not just me. From the culinary world to fashion, engineering, and notably healthcare, industries are starting to embrace the opportunity that this rapid prototyping technology presents. There's already a lot of exciting work in veterinary medicine being done implementing 3D printing and even more promising prospects for the future.

HOW DOES 3D PRINTING WORK?

There are many types of printers on the market, though the workhorse remains fused deposition modelling (FDM), which is the most common and most affordable. First, 3D images are created within computer-aided design software. The 3D image is then rendered as an STL file; the name is a nod to stereolithography, the name of the original 3D printing process invented in the 1980s. That image file is then put into a digital slicing program where it's converted into thousands of horizontal 2D layers before being sent to the printer.

The robotic printhead then springs into action. Rather than ink, it extrudes a pliable substrate, often molten thermoplastics, as it moves around in three dimensions to build the item up layer by layer in a process termed "additive manufacturing." Once the item comes off the printer, there may be additional post-processing steps required, and then you're left with your finished 3D object. Almost the entire manufacturing process is replaced by a single machine.

WHAT CAN WE DO WITH IT?

It's exciting and almost overwhelming to consider the applications possible in veterinary medicine. Dr. Michelle Oblak, ACVS Fellow of Surgical Oncology at OVC, whose work with 3D-printed implants has attracted much attention in recent years, gave a lecture at the SCVMA Symposium earlier this year on the subject. "There are no limits beyond what you can imagine," she said.

DICOM data from patient MRI, or more commonly CT scans, can be used as inputs to the computer-aided design software to print highly accurate 3D replicas of patient-specific anatomy from imaging data. This has proven very useful for surgeons. They can better understand the characteristics of a patient's unique disease and are better able to plan approaches and anticipate challenges. Printed replicas also give the surgeon the ability to actually rehearse the procedure before setting foot in the operating room. This can significantly reduce the time the patient spends under anesthesia, leading to improved outcomes.

This technology is also used to create bespoke surgical implants and prosthetics—the areas of veterinary practice where 3D printing is most widely adopted. A quick web search yields hundreds of heartening stories: a three-legged guinea pig with a custom wheelchair, a macaw with a titanium beak, turtles with new shells, horses with corrective shoes for laminitis, and countless dogs leading active lives with printed prosthetic limbs.

The next frontier of 3D printing in medicine is touted to be "bioprinting." Instead of the typical plastics, metals, ceramics, or resins, these machines use bio-inks composed of living cells and support materials with the goal of printing complex functional tissues. In veterinary medicine, they've so far been used to (re) create bone, cartilage, cardiovascular, and corneal tissues. Several research projects have dabbled with using bioprinted "organoids" for pharmaceutical testing and biotechnological purposes, which may decrease the number of live animals needed for such studies in the future.

Of course, there are plenty of less sci-fi but practical everyday applications too. At several veterinary colleges, 3D-printed bone models are being introduced into anatomy classrooms. The replicas are just as effective for learning, but they are far less fragile and easier to replace if broken or lost than the specimens in the bone boxes that first-year students typically inherit every year. Anatomical structures that may be too small or otherwise difficult to appreciate, like the inner ear bones, can be printed at a larger scale.

As part of the clinical skills curricula at OVC, Dr. Oblak told students at the symposium, they've used 3D printing technology to generate a cystocentesis model to help train students to use ultrasound imaging to draw urine from a simulated bladder. With training aids like these, students can learn techniques and build confidence without having to practice on a patient.

Similar anatomical models, especially those of an individual patient's pathological condition, are also helpful for client education in the clinic. Being able to more clearly see the problem in their pet that requires surgery, clients can gain an enhanced understanding of the procedure and potential complications during pre-operative counselling.

ALL PHOTOS COURTESY MADISON AUDEAU

Rapid production of tools and accessories is also made possible by 3D printing. Many surgical instruments, including highly specialized (and perhaps otherwise very expensive) ones, can be printed as needed. It's also very handy that, once an STL file is created, it only takes a few mouse clicks to share it with anyone worldwide who can then print the exact same object. With access to a 3D printer, clinics in developing areas where they may not have access to necessary equipment can produce many of their own tools in-house. "It's absolutely incredible the things we can accomplish," Dr. Oblak told students.

Indeed, having a 3D printer on hand means you can produce almost anything. Ohio State University's College of Veterinary Medicine found a novel use for their 3D printer at the beginning of the COVID-19 pandemic. Typically used to create replicas for student surgical training, they instead began using their printer to create plastic face shields to protect staff and students at their teaching hospital.

WHAT'S THE INVESTMENT?

For the last several years, 3D printers have been limited to universities and large specialty practices. However, as costs come down and the quality of more affordable printers goes up, it's entirely possible that we'll be seeing 3D printers pop up in general practices within the next decade.

The machines generally require minimal setup and maintenance and are rather inexpensive to operate once the printer is purchased. Depending on its intended use, a professional-grade FDM printer starts at around $2,000 and fits easily on a benchtop. More sophisticated industrial machines and those that use specialized materials can cost $100,000 or more. Several software programs are available to facilitate the creation of 3D image files, which, depending on their purpose and user-friendliness, can also get quite expensive. "It isn't as simple as plugging in a printer and pressing 'print,'" said Dr. Oblak. "The part that a lot of people can't do is create the files that go into that printer." This also opens the door to collaborations with engineering and computer science professionals.

The materials used by most FDM printers, however—especially thermoplastics—are quite inexpensive. The cat skull model pictured here that I printed took about eight hours to produce and used less than a dollar's worth of plastic filament.

In addition to being fast and relatively affordable, 3D printing is also more sustainable than a lot of traditional manufacturing, considering there's almost no waste produced in the additive process. If broken or no longer needed, many thermoplastic prints can be recycled, and some materials can even be melted down by an additional machine and turned back into filament that you can feed into the printer for your next project.

There are so many ways that veterinarians have embraced 3D printing and are using it to personalize patient care. Many of these technologies are still in their infancy but boast a lot of promise and broad applications. In closing her lecture at the symposium, Dr. Oblak left students with enthusiasm for this technology's future. "We haven't even imagined a lot of the things that are possible," she said. As we continue to see 3D printing develop, I look forward to watching its use expand in clinics and the innovations it will propel.

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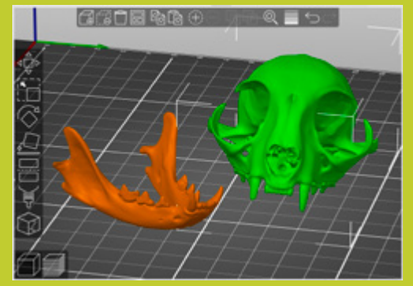
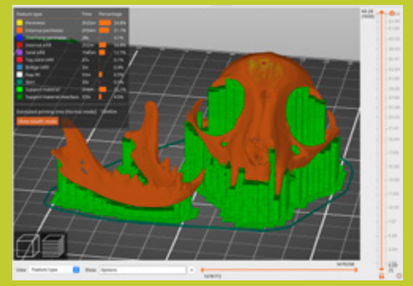
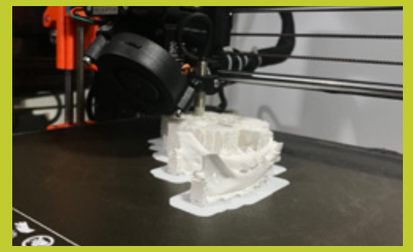


A 3D model displayed in a computer-aided design program.



The input file for the 3D printer includes the support structures needed by the printing process.



The 3D printer at work.

The finished object.

Madison Audeau, WCVM class of 2023, is from Nanaimo, BC. She completed three years of a BSc in microbial biology at Vancouver Island University before coming to the WCVM and looks forward to returning to the BC coast as a small animal clinician after graduation.

West Coast Veterinarian is pleased to introduce a new topic for "A Year in the Life." Each four-part column is written by one veterinary specialist about one topic that has four distinct life phases. Through the course of the year, each instalment highlights how this topic affects animals at a certain life stage and what veterinarians should know about how to treat it. This year's focus is dog behaviour.

PUPPY BEHAVIOUR: *5 SKILLS TO RECOMMEND*

BY KAREN VAN HAAFTEN, DVM, DACVB

Puppy appointments are about so much more than vaccines and deworming. They represent a unique opportunity to influence the lifelong physical and behavioural health of a dog. House-training and socialization are both important topics to discuss with puppy owners, but in addition to these, what are the most important areas to focus on with training during puppyhood?

A few important points to share with owners at those early exams, before we dive into specifics:

- Animals never stop learning, so training should never stop either. However, there are some habits and associations that are easiest and most useful to build during a puppy's sensitive socialization period of 6 to 16 weeks.
- Evidence shows that reward-based training is the most effective and least risky option for training puppies and adult dogs. Keep in mind when reading the following that these behaviours should be trained humanely using rewards and avoiding the use of pain or fear to motivate behaviour change.
- Training the skills described below is recommended in addition to (not in place of) a comprehensive socialization plan.
- By making careful choices about playmates and environments, socialization can be done safely before vaccinations are fully protective. Waiting to socialize puppies until vaccinations are complete results in missing out on the sensitive socialization period of 6 to 16 weeks, when puppies most readily accept new experiences.
- Puppies should never be forced into experiences when they are showing signs of fear. The best socialization plans offer puppies time and choices to get used to new experiences at their own pace. It's normal for socialization to look different for sensitive herding breed puppies versus bolder terrier puppies.

Here are five easily overlooked skills that I think all dogs should learn as puppies. While your job is not to train clients' dogs, you will likely find that clients look to you for advice and help, and especially for help when training goes wrong or doesn't work. These are some training behaviours you might be able to demonstrate at clinic visits. You will certainly want to share with clients these five basic desired behaviours so that clients understand that with these basics, their puppies are in the best position to grow into well-behaved dogs.

1 SETTLE DOWN

A lot of traditional training emphasizes active behaviours (come here, sit, give a paw). There is nothing wrong with training active behaviours, but I do recommend training relaxed behaviours as well. An overemphasis on training active behaviours can predispose dogs to high levels of frustration during training and undesirable attention-seeking behaviours when they are not being given direction. For most clients, a desirable "default" behaviour for their pet dog is to relax or settle down.

Training a puppy to settle down on a bed or mat has endless options for progression. Clients can take the mat with them to new locations, first in the home and then outside or to locations where there are more distractions. It will be more challenging for puppies to show relaxation behaviour in these stimulating environments, but practice makes perfect. It's also possible to transfer the behaviour to a verbal or hand cue, so the mat isn't necessary in the long term. Clients can also use this behaviour in public places such as dog-friendly restaurants (in this case I might specifically train them to settle under a chair or table).

2 IGNORE THAT THING AND FOCUS ON ME

While socializing with unfamiliar people and dogs is important, it is equally important for puppies to learn to ignore environmental distractions and engage with their owner. This is an important step that is often forgotten in puppy training because clients are focusing on socialization. Forgetting to work on this can lead to problems with getting puppies and dogs to pay attention to their owners in distracting environments.

3 INDEPENDENT PUPPY

Another training opportunity that is easy to forget is helping puppies learn to tolerate absences. Forgetting to teach puppies how to spend time independently can increase the risk of separation anxiety.

4 TAKING MEDS IS FUN!

Clients should offer small meaty treats to their puppies to make them less suspicious of pills hidden inside food later on. A good tip is to place a piece of dry kibble inside of the soft treat to get them used to pill-like textures in food.

Feeding three or four treats in rapid sequence is also a good strategy: this will encourage puppies to swallow the first few treats quickly and wash them down quickly before any unpleasant tastes arise (when needed, the pill goes inside the first or second treat). Getting puppies used to catching tossed treats is another helpful behaviour: they tend to swallow caught treats quickly without chewing them.

SETTLE TRAINING FOR PUPPIES

Training settle behaviour during puppyhood can be challenging, as puppies have limited attention spans and lots of energy. For this cue, pick times when your puppy is naturally starting to wind down. Set up a mat or bed and sprinkle a couple of treats on it. Continue to offer treats if your puppy stays on the mat, and selectively reward calmer behaviours, such as:

- Sitting down
- Lying down
- Putting their head down
- Slow blinking
- Looking away from you
- Relaxing down on their side
- Relaxed yawning

If the puppy gets up and walks off the mat, stop giving treats and resume if they wander back over to the mat later on. Keep the criteria low and the rate of reinforcement high at first. Within a few sessions, you should have a puppy who seems to be magically attracted to the mat and habitually shows relaxed behaviour once they are on the mat. If your puppy places themselves on the mat without being asked, reward with praise and/or treats. This is ideally what you want to see over time: settling down becomes a default behaviour.

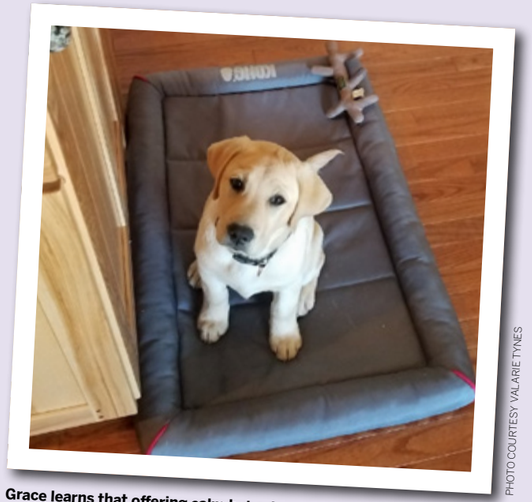


PHOTO COURTESY VALARIE TYNES

Grace learns that offering calm behaviour on her mat is a good way to get her owner's attention at home.

ENGAGEMENT TRAINING FOR PUPPIES

Bring items that motivate your puppy with you on walks, such as high-value treats (chicken and hot dog pieces are usually popular) and favourite toys. When your puppy looks at you or engages with you, offer them a quick treat or game. If they don't naturally offer this behaviour, cue it by saying their name. Work this game into your usual walks, with the goal being your puppy checking in with you every few minutes, but also engaging with their environment (we don't want to interfere with the enrichment opportunities of the walk).

Puppies should have the opportunity to interact with new people and dogs regularly, but there should also be some people and dogs that clients pass without interaction.

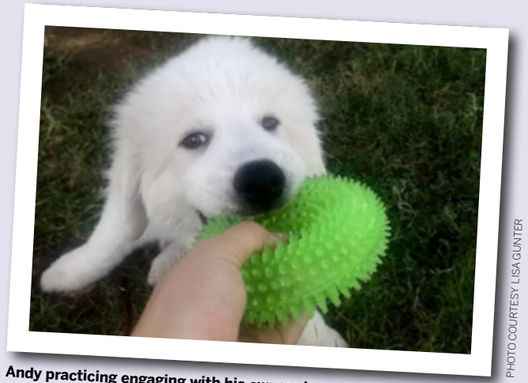


PHOTO COURTESY LISA GUNTER

Andy practicing engaging with his owners in a park with distractions (dogs and people) present.

INDEPENDENCE TRAINING FOR PUPPIES

Start by building periods of time into your puppy's routine where they are encouraged to be more independent. Perhaps this is while you are working: set your puppy up with some long-lasting food puzzles and walk to the other corner of the room to focus on your work. If your puppy is happy to engage with the food puzzles and not stressed by your inattention, challenge them by moving to a different room, and eventually by calmly leaving the home to run short errands.

Remote cameras are a good way to monitor your puppy's emotional response to departures: ideally you want to see them notice you have left, but remain calm and engaged with their food puzzles. On longer departures, you should expect to see some napping or other relaxed behaviours. Try not to make arrivals home too exciting, either. In general, I recommend not interacting with the puppy immediately upon returning home and waiting for them to show some calmer behaviours before offering attention.

5 HEALTHY HABITS AND LIFESTYLE TRAINING

Puppyhood is the best time to introduce husbandry experiences that are going to be an important part of puppies' lives as adults. For example, tooth brushing is a useful practice that is easiest to start training as puppies. Puppies of long-haired breeds should get lots of positive experiences with grooming practices, such as standing on a table, being handled, and contact with scissors and clippers. Puppies should also learn it's fun to have their ears and feet handled, and that bath time is awesome.

I also recommend clients think about and prepare their puppy for the lifestyle they want to live with them. Do they take long road trips? Then they'll want to spend lots of time in the car with their puppy, and maybe train them to relax in a travel crate. Ask about car sickness and treat that early to prevent negative associations with car rides. Will clients be taking this puppy on a boat, kayak, canoe, or stand-up paddleboard? There are advantages to giving them experiences with these activities during puppyhood, even if it's the middle of the winter. Do they want this puppy to become a hiking buddy? They should find some trails that aren't overly challenging physically, but offer a good mix of safe trail experiences such as running water, bridges, and wildlife smells.

If you're looking for a good resource to recommend to puppy owners, I highly recommend *Life Skills for Puppies* by Daniel Mills and Helen Zulch. WCV

NEW APPROACHES TO ASSESSING PAIN IN ANIMALS

BY THOMAS EDE, MSc, PhD, MARINA VON KEYSERLINGK, PhD, AND DANIEL M. WEARY, DPhil

"PAIN CAN LAST HOURS AFTER A PROCEDURE, AND PAIN CONTROL (IF PROVIDED) CAN WANE OVER TIME. PLACE CONDITIONING, WHEN AN ANIMAL ASSOCIATES AN EXPERIENCE WITH A PLACE, ALLOWS US TO ASSESS HOW AN ANIMAL EVALUATES THE ENTIRE EXPERIENCE."

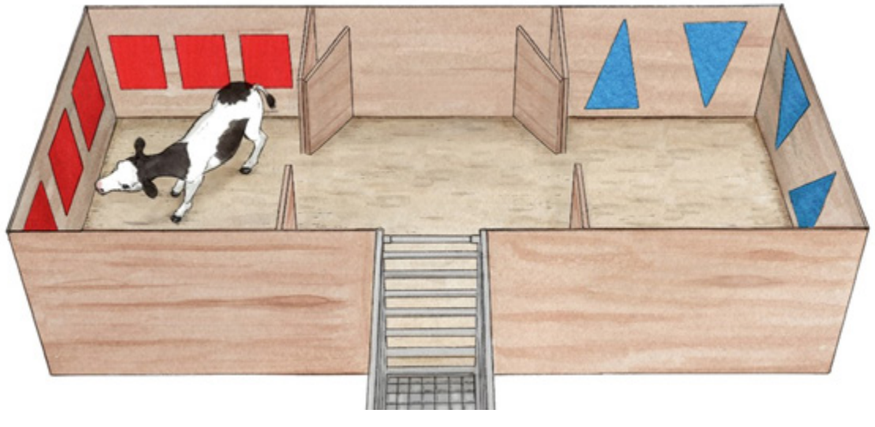


FIGURE 1: Place aversion apparatus. Calves received different treatments in pens with different visual cues. They were then given free access to both pens.

FIGURE COURTESY THOMAS EDE

Farm animals are often subjected to routine but painful procedures (like disbudding of calves), often without appropriate pain relief. At one level, a sophisticated approach to pain assessment for these procedures seems unnecessary; only the most hard-hearted skeptic would ask for evidence that animals are experiencing pain beyond that which can readily be seen in the animals' responses (including the struggling, escape attempts, and vocalizations). Much more difficult to assess is the post-operative pain that can be experienced in the hours and days after these procedures, which perhaps explains why this pain is often untreated on farms. For humans, the gold standard of pain assessment has long been verbal reporting, but animals are unable to provide this. Fortunately, there is now a wide range of other methods available for pain assessment. In this article we describe some of the new approaches to pain assessment we have been using at the University of British Columbia, including motivational trade-off, place conditioning, anhedonia, and cognitive bias testing.

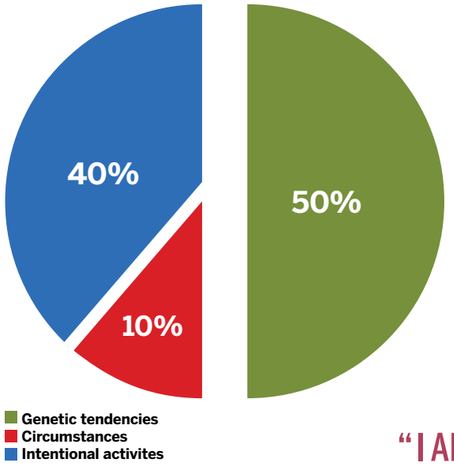
One way of assessing how negative a pain experience is to an animal is to contrast it with something we know they find positive. In one study, we trained dairy calves to approach a bottle for a milk reward; all calves learned to do this quickly. Once calves were trained, we began giving them injections (intramuscular, subcutaneous, intranasal) of a small quantity of saline each time they approached the milk reward. When calves learned that the "cost" of approaching the milk bottle was an injection, many took longer to approach the reward, and some opted to forfeit the reward entirely. This change was particularly marked for calves who received the intramuscular injections; calves who received the other injections continued to approach the milk bottle, as did the control calves who were not injected. Thus, avoiding the pain of an intramuscular injection is important enough that calves are willing to give up a milk reward.

Pain can last for hours after a procedure, and pain control (if provided) can wane over time. Place conditioning, when an animal associates an experience with a place, allows us to assess how an animal evaluates the entire experience. We have used this approach to evaluate how calves remember the post-operative pain associated with disbudding, and how this is affected by different mitigation strategies. Using the place conditioning setup illustrated in Figure 1, calves recovered from either disbudding or a sham procedure that does not cause pain in visually distinct pens. Once calves had received both treatments, they were given access to both pens. During this test phase, calves avoided the pen where they had been disbudded, favouring instead the pen where they had received the sham procedure. This result shows that the pain after disbudding results in a potent negative memory. In a follow-up study, providing the NSAID meloxicam reduced this aversion, confirming that the negative memory was specific to the post-operative inflammatory pain (all calves had received a local block to prevent intra-operative pain).

In humans, prolonged pain can have a sustained emotional impact, affecting ways we process pleasure and risk. Anhedonia is observed in depressed patients, such that previously pleasurable experiences are no longer enjoyed. Anhedonia has been a focus of chronic pain research in rodents, who reduce consumption of a sweet solution when in pain. In a recent study, we found that dairy calves also like a sucrose solution, consuming on average two kilograms per day before disbudding. But immediately after disbudding (again with a local block but without an NSAID), calves reduced their intake on average to about half that, suggesting that post-operative pain has important effects on calf mood.

Changes in mood can also be inferred using cognitive biases. Humans with low mood are less likely to take risks. We have translated this approach for calves by training them to either approach (to receive a milk reward) or not approach (to avoid a time out) videos screens coloured red or white, and then presenting them ambiguous colors (i.e., different shades of pink). After training but before disbudding, calves always approached the positive cue, rarely approached the negative cue, and went to intermediate cues about 50 per cent of the time. After being disbudded, calves were far less likely to approach the ambiguous colours, a cognitive bias consistent with the experience of low mood.

Together, these results can tell us how much pain matters to animals, how they integrate and remember long-lasting pain experiences, and how these pain experiences contribute to low mood, reducing the animal's ability to take pleasure in other experiences. We are now using these approaches to develop more effective pain management techniques, and where feasible, discussing ways of avoiding these painful procedures altogether. WCV



the science of happiness

BY ELAINE KLEMMENSEN, DVM

"I AM NOT SUGGESTING WE PUT ON ROSE-COLOURED GLASSES AND PRETEND OTHERWISE, BUT I AM SUGGESTING WE FIND A NEW PATH TO FOLLOW."

I am fascinated by the science behind happiness and the application of positive psychology to enhance the well-being of veterinary teams. Thanks to neuroplasticity, which is the brain's ability to create new pathways in response to learning, experience, or injury, it is possible to create new mental maps that build our brain's "happiness muscle." Our brain is constantly creating associations and connections between our thoughts, memories, skills, and experiences, and these connections, maps, or neural pathways are unique to each of us.

As a bicycle enthusiast, I picture my brain's neural pathways as a three-dimensional layering of maps—topographic maps overlaid by highway maps, secondary roads, and finally my favourite, bike trail maps. These layers upon layers of maps are influenced by a lifetime of human experience. Because our brains can only hold so many working concepts in memory at any time, repeated thoughts or actions that are tagged as important get pushed down into the area of our brain that holds long-term memories and processes. This frees up our working brain for more capacity. Using my trail analogy, the trails I ride every day become hard-wired into my subconscious, so that I automatically know when to gear down for a climb or stand on the pedals for a drop. Repeated focus on a problem, a new idea, or a belief system creates a well-worn "trail" or neural pathway that we travel on autopilot. Because it is easy to ride these trails, we return to them and ingrain them into the deepest layers of our brains. This hard-wiring becomes firmly implanted, explaining why habits are so difficult to change.

What does all this have to do with happiness and more importantly the future of veterinary medicine? To help us survive, humans have developed what scientists call a negativity bias. From an evolutionary perspective, having a stronger reaction to negative experiences than positive ones helped keep us safe, but consider an average day in veterinary medicine. We interact with multiple people, most of whom are appreciative, respectful, and enjoyable to work with, yet it is the one difficult client interaction that we focus on and allow to influence our perception of whether it was a "good day." This is an example of the negativity bias at work. The brain preferentially looks for, reacts to, and stores negative information over positive information. Studies have identified that it takes at least five positive interactions to make up for just one negative interaction. Furthermore, neuroscience has established that the more we focus on a problem, the more we ingrain it.

Veterinary medicine can be exhausting. I see the strain in our people, I understand the challenges, and I am worried. I am worried because I believe we become the stories we tell ourselves. The more we focus on a problem, the more we ingrain it. The more we let our negativity bias colour our perception of veterinary medicine, the more likely we are to only see the negative in veterinary medicine. The problems are real; the challenges exist. I am not suggesting we put on rose-coloured glasses and pretend otherwise, but I am suggesting we find a new path to follow. We can consciously steer our bicycle off the well-worn and comfortable trail to intentionally create a new one. Neuroscience and the study of organizational psychology show us how human systems move toward that which they consistently and persistently focus upon. What is the positive future you envision for yourself? Your practice? The future of veterinary medicine? How can we challenge our negativity bias and find a way toward flourishing?

In the book *The How of Happiness*, Dr. Sonja Lyubomirsky, a psychology professor at the University of California Riverside, describes three determinants of happiness.

- Set point
- Circumstance
- Intentional activity

She goes on to describe the relative weight each of these factors has on our overall happiness. Our set point or genetic predisposition is responsible for 50 per cent, our circumstance 10 per cent, and our intentional activity 40 per cent. These findings, backed by extensive research, are exciting to consider. While we cannot change our genetics, and our circumstances may also be fixed, 40 per cent of the happiness we experience is within our control. Lyubomirsky calls this the "40 per cent solution."

So how do we leverage the 40 per cent? The activities outlined by Lyubomirsky draw from the works of the founders of positive psychology Martin Seligman and Mihaly Csikszentmihalyi as well as a wealth of current research from the branch of psychology focused on the science of flourishing. The following list of 10 techniques to build your "happiness muscle" is not a substitute for direct medical advice from your doctor or qualified mental health professional. Rather, these findings are presented as tools to grow your resilience and augment other interventions.

1. **Count your blessings:** What are you thankful for? Who do you appreciate? How can you convey this appreciation to others who you have never thanked? Cultivating gratitude through active practices such as reflection, journaling, and sharing with others starts the process of building new neural pathways.
2. **Cultivate optimism:** Practice finding the silver lining and imagining a positive future for yourself. This is not about toxic positivity or moving forward with a falsely positive facade. Acknowledge the hard stuff with genuine empathy and learn to move forward with a positive focus.
3. **Avoid overthinking and social comparison:** Find strategies to stay grounded, stop comparing yourself to others, and stop dwelling on your problems. The story you are telling yourself is just that, a story. The truth is often much different than we imagined. We are all imperfect beings just doing our best to figure life out.
4. **Practise acts of kindness:** Consider the wake you leave behind and how you make others feel. Is it the way you want to be remembered? Discover the joy in doing things for others with no expectation of anything in return. Do good, cultivate kindness, and feel good in return.
5. **Nurture your relationships:** We all need connection. Invest in nurturing the relationships that sustain you to strengthen and build a community of support.
6. **Do more activities that truly engage you:** Find flow or those moments when you are fully present and so immersed in an activity that there is no room for distracting thoughts or emotions.
7. **Replay and savour life's joys:** Pay attention, delight in, and revisit those great moments and pleasures through writing, art, or sharing with others.
8. **Commit to your goals:** Maybe you have always wanted to run a marathon, explore Paris, or complete your master's degree. Take time to consider a significant goal that is meaningful to you and devote the time and energy to pursuing it.
9. **Learn to forgive:** Holding anger and resentment toward those who have wronged you traps you in a negative mind-set, reinforcing old mental maps and effectively stifling your growth and happiness. Letting go of those hurts and learning to forgive is a step toward building empathy and compassion.
10. **Take care of your body:** Release endorphins through laughter, meditation, and engaging in physical activity. Bonus points if you can do this in nature.

In his book *The Happiness Equation*, Neil Pasricha shares his perspective that the happiness model we have been fed from childhood is flawed. The belief that great work leads to big success and results in happiness is backwards. Rather by cultivating a positive attitude we will be more productive, more creative, and experience improved relationships, and this will lead to great success.

Changing long-standing patterns and habits is difficult. Rewiring your brain and intentionally creating new neural pathways takes time. When I am challenged with the struggle of creating new habits, I remind myself of the joy of discovering a new bike trail, experiencing flow, and discovering the freedom of being fully present. Wishing you happy trails this summer.

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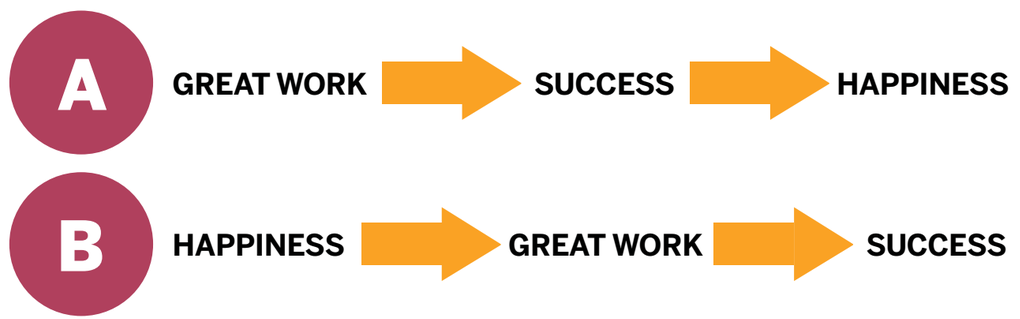

Author Neil Pasricha suggests that the belief that great work leads to success and results in happiness (A) is flawed. Instead, cultivating a positive attitude leads to great work and greater success (B).

“I CAN NOW HONESTLY SAY I NEUTER MORE ROOS PER YEAR THAN DOGS.”

A female common wallaroo.

PHOTO COURTESY ADAM SKALZUB PHOTOGRAPHY

KANGAROO VET

BY MARCO VEENIS, DVM

Utrecht has enjoyed full accreditation from both the CVMA and AVMA since 1973. To be licensed in North America, I had to take the same North American Veterinary Licensing Examination that every North American graduate takes. Only in my case, it was 10 years after graduation. Having worked in small animal practice for all those years meant I had to brush up on my large animal knowledge, so I spent six months studying before I took my exam in Guelph. As we all know, the exam is a multiple-choice test running the gamut of veterinary medicine. It had questions about dogs, cats, rabbits, horses, swine, and cattle. Not a single question about kangaroos or wallabies, because who would expect to be working with kangaroos in Canada? Little did I know how things can change.

One of my clients in the Okanagan had a small hobby farm. One day she came across seven wallabies who needed a new home. Repatriating them was out of the question; Australia did not want them for fear of introducing novel diseases. Unable to find anywhere for them to go, Caroline allowed them to stay on her farm. Her property happened to be close to the centre of town, and soon people were stopping to see the kangaroos. Word got out, and other exotic critters joined the wallabies: maras, capybaras, emus, and various wallabies and kangaroos. The crowds grew, and the idea was born to turn the farm into a petting zoo. Over the next few years, the kangaroo farm grew into a major tourist attraction and was forced to move last year. Of course the menagerie needed veterinary care, and for that, Caroline turned to my clinic to ask if we would be willing to look after the animals.

My main experience had been in a small animal clinic in Holland where I was a partner for 10 years after graduating from Utrecht University. We mainly dealt with dogs, cats, and pocket pets. Eventually, my wife and I had decided it was time for a change, so we came west—all the way west to British Columbia, which is home, among other animals, to farmed kangaroos.

When Caroline's request for care for her exotic animals came in, I discussed it with my associates, and we decided to give it a try. Since none of us considered ourselves experts in marsupial medicine, we used VIN to enlist an Australian wildlife veterinarian to give us advice. Dr. Michelle Campbell-Ward is certified in zoo animal medicine and works for a conservation society in Australia. She has been a tremendous asset for us.

ABOVE: Capybaras have hoof-like nails on each toe.
PAGE 7: Dr. Tara Trimble treats a capybara with pneumonia.

The challenge with these patients is that there are few textbooks on kangaroos or capybaras, and even on VIN, information is sometimes scarce. We have learned to rely on help from colleagues in Australia and South America as well as to modify what we have learned from other species to our unique caseload. The internet, social media, and VIN make it possible to collaborate with colleagues all over the world.

The animals we deal with are all hand-raised, so handling is generally not a problem. There is always help available on the farm, but often our patients need to come in for X-rays, surgery, and other procedures. The larger roos are sedated on the farm before bringing them in as they can panic during the ride. After a red kangaroo woke up on his way home and started wrecking his kennel, we now send them home still sedated and administer the reversal back on the farm. Since the farm is only 10 minutes from the clinic and on my way to work, I can swing by, sedate, and escort an animal to the clinic.

In the clinic, we are now used to handling kangaroos. The best way to restrain them is to hold them by the base of their tail and scruff of their neck. This allows them to go up and down, but you can steer them where you want them. The capybaras are a little trickier, as there is less to hold on to. The biggest challenge is the farm's pot-bellied pig, who has become pretty adept at evading capture.

We have an anesthetic dart gun but rarely need to use it. We typically give injections intramuscularly in the hind leg or tail, and these are well tolerated. Anesthesia is usually done with injectables (medetomidine hydrochloride or ketamine) and a face mask with oxygen and isoflurane as well as local anesthesia. Intubating kangaroos is possible but challenging due to their long faces and narrow mouth openings.

The most common procedure is neutering male kangaroos. Kangaroos and wallabies have their scrotum relatively high on their belly, and the scrotum is pedunculated. We use a closed technique with scrotal ablation and have not had complications. I can now honestly say I neuter more roos per year than dogs. A big challenge is parasitic diseases, especially Toxoplasma and *Baylisascaris procyonis*. Both diseases can lead to neurological disorders with no effective treatment available. Keeping feral cats and raccoons off the farm property is a major challenge. Marsupials are susceptible to clostridial diseases. After we treated one of the wallabies for suspected tetanus, we implemented vaccination with commercial seven-way livestock vaccine. This is off-label use as there are no drugs or vaccines licensed for marsupials in Canada.

Trauma is not common, but we see the odd laceration and fracture. We are currently treating a red kangaroo for a comminuted fracture of its metatarsals. Our patient is in a bivalved bandage cast and is kept indoors to prevent the bandage and splint from getting wet. He is tolerating it well, and our latest radiographs show signs of healing. We originally casted the hock in a 120-degree angle, as we do in dogs and cats, but have now changed it to be closer to 90 degrees as this is a more natural sitting angle for these animals. We opted for conservative management as the two cases we found in the literature where surgery was attempted resulted in significant complications due to infection and implant failure.

Last winter one of the capybaras developed significant lameness during a cold spell due to a combination of frostbite and deicing salt in their enclosure. Most of the hoof-like nails on his hind legs sloughed off, and on one foot the digits became necrotic and had to be amputated. We debated amputating the whole leg to prevent pressure sores on the stump, but capybaras have a rather large metatarsal pad. We were able to amputate at the metatarsal-phalangeal joints and move the pad over the stump. Much to our relief, Leonardo (di Capybara) healed without issues and has good use of his leg. To our knowledge this has never been described in the literature.

This spring, several of the roos developed loose stools and excessive flatulence when they were turned out on the young grass. Just like horses, these grazers are adapted to feed with a high fibre content and the spring grass is just too much for them. We recommended limiting outdoor grazing and supplementing with coarse hay to provide more roughage.

When we are asked what attracts us to veterinary medicine, my colleagues and I all agree that the diversity in our caseload keeps things interesting. We truly never know what will come through our doors. WCV

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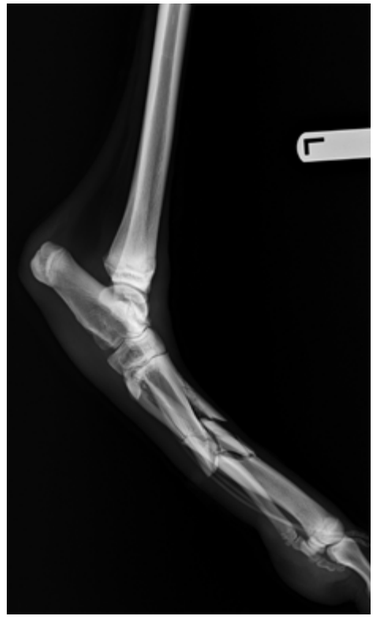
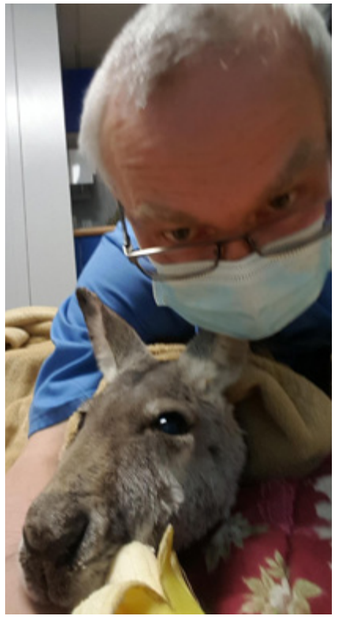
PHOTO COURTESY ADAM SKALZUB PHOTOGRAPHY

An albino Bennett wallaby.



Kangaroo foot with metatarsal fracture.



A kangaroo in lengthy post-operative recovery.

"WE USED VIN TO ENLIST AN AUSTRALIAN WILDLIFE VETERINARIAN TO GIVE US ADVICE. DR. MICHELLE CAMPBELL-WARD IS CERTIFIED IN ZOO ANIMAL MEDICINE AND WORKS FOR A CONSERVATION SOCIETY IN AUSTRALIA. SHE HAS BEEN A TREMENDOUS ASSET FOR US."

PHOTO COURTESY ADAM SKALZUB PHOTOGRAPHY

A trio of common wallaroos.

Pug presenting with respiratory distress after a neuter, cystotomy, and urethrostomy. He needed to be ventilated, underwent a tracheostomy, and went home soon after.

THE EMERGENCY LIFE IN A PANDEMIC

BY LAURENCE BRAUN, DVM, DACVECC, AND CARSTEN BANDT, DVM, DACVECC

Given the rigours of 24/7 coverage, staffing of emergency services was becoming more of a challenge even before the pandemic. Demanding working conditions including high caseloads, long shifts, and weekend and holiday shifts are increasing burnout among emergency veterinarians. Hospitals are caught in a cycle of recruitment and retention, which leads to many new-to-practice staff in every discipline. Data from the United States (AVMA) indicates that specialists are entering practice at a greater rate than veterinarians overall (47 per cent versus 30 per cent over the last 10 years). Despite this growth, there is a shortfall in all specialties in North America that has caused the Veterinary Emergency and Critical Care Society and the American College of Veterinary Emergency and Critical Care to establish a task force to address the shortage.

In 2020, when the COVID-19 pandemic hit, many family practices decreased their daily appointment load to maintain safe COVID-19 protocols. Another pandemic phenomenon was that many households welcomed new pets into their locked-down lifestyle. So, not enough veterinarians, fewer appointments, and more pets combine to create a documented increased demand for emergency services throughout North America. A consequence is that some practices have had to resort to diverting cases to other hospitals at times of overload. At the same time, COVID-19 protocols have affected emergency clinics. Curbside protocols helped us minimize contact and risk but have also increased the stress level for our clients, doctors, and support staff.

Emergency practices had to come up with new management strategies to eliminate the risk of COVID-19 transmission within the workplace, create a safer environment, and minimize contact between different shift groups within the hospital. It is not just within the clinic; the reality of our lives means that any isolation or quarantine affecting family members, roommates, school-age children, and other contacts impacts staffing. We had to come up with better strategies to handle the increased case volume with a shrinking workforce and the daily uncertainty of unfilled shift coverage for technicians, assistants, and veterinarians.

ALL PHOTOS COURTESY LAURENCE BRAUN

The backbone of emergency medicine is triage: sorting or prioritizing what is most urgent to address. The word “triage” has infiltrated the veterinary vocabulary and is used liberally; we teach “phone triage,” but actual triage cannot be done without assessing the patient. At our hospital, we constantly strive to have an efficient triage system and referral process to best meet the demands of the sick patient and support the referring veterinarian.

WHEN TO REFER?

Referral centres need to partner with the family veterinarian in a collaborative environment that includes the input of the referring veterinarian while optimizing patient stabilization before referral, especially if distance is an issue. There needs to be clear communication to determine whether the patient should be stabilized (stay and treat) or referred immediately (scoop and run). This depends on several factors: the status of the patient, the distance to the nearest emergency centre, and a clear understanding of the ability of the family veterinarian to deal with the emergency (do they have the time, equipment, staffing, and experience?). To accomplish a good understanding about what is best for the patient, discussions between the referring doctor and the emergency clinician are crucial.

Traditionally veterinarians learn the “A-B-C-D-E” of triage, although more complex rating systems exist. We use vital signs to deem the patient stable or not. If the patient can maintain vital signs within normal range without assistance, then the patient is deemed stable for now. “Vitals” are low-tech and rapidly obtained: attitude, mucous membrane colour, capillary refill time, pulse (strong/regular), and respiratory rate and effort. More extensive vitals include auscultation, temperature, blood pressure, and pulse oximetry.

At the most fundamental level, clinicians must decide whether the patient is at high risk of deteriorating and whether immediate life-saving interventions (e.g., securing the airway) are required or whether stabilizing interventions (e.g., intravenous fluids) combined with close observation (monitoring) is the most prudent approach.

Possible other considerations:

- Should/can the patient wait?
- Are there marked mentation changes?
- Is there severe pain or distress?
- Is there a history of significant injury, toxins, major bleeding, etc.?

Many patients can be initially stabilized at the family veterinarian, depending on their staffing situation and ability to hospitalize the patient. The COVID-19 pandemic has brought us all a little bit closer, and phone consultations, a tool we have used significantly more over the past 12 months, have been a great help in managing patients at referring veterinary hospitals. In some cases, a phone consultation allowed a client and patient to avoid a long trip and hotel accommodations during the pandemic. High-level acuity triage might benefit from an initial consultation before transfer to allow a safe transport, especially over long distances. Here are two examples of cases where a phone consult prior to an emergency transfer was possibly life-saving.

Jack, a two-year-old German Wirehaired Pointer, went on a hunting trip and presented to the family veterinarian with severe heatstroke. He was in severe hypovolemic shock, with a rectal temperature of 42.3°C. He was cooled down at the family practice and given intravenous fluids but remained hypotensive and developed petechiae and hemorrhagic diarrhea. An initial phone call to one of our criticalists helped guide fluid therapy prior to transfer. Dogs with severe heat stroke frequently develop multiorgan dysfunction syndrome with acute kidney injury and coagulopathies. The initial fluid resuscitation protocol is crucial to decrease the risk of acute kidney injury. Balanced crystalloids are preferred to avoid delivering an excess of chloride to the patient; resuscitation with NaCl has been associated with greater risk for developing acute kidney injury. Jack was then transferred to our referral centre where he received three treatments of intermittent hemodialysis for anuric kidney injury and required multiple plasma transfusions. Jack fortunately recovered from his acute kidney injury and made a full recovery.

Jack, a German Wirehaired Pointer presenting with severe heatstroke. Highest level of acuity.

Olivia, a one-year-old female Standard Poodle, started to ooze blood from her incision site two hours after a routine ovariohysterectomy. She became obtunded, tachycardic (220 beats per minute), and hypotensive (mean arterial blood pressure of 45 mmHg) shortly after the bleeding was discovered. An abdominal FAST scan showed a large amount of hemorrhagic fluid in her abdomen. Due to the cardiovascular parameters, she was deemed

“REFERRAL CENTRES NEED TO PARTNER WITH THE FAMILY VETERINARIAN IN A COLLABORATIVE ENVIRONMENT THAT INCLUDES THE INPUT OF THE REFERRING VETERINARIAN WHILE OPTIMIZING PATIENT STABILIZATION BEFORE REFERRAL, ESPECIALLY IF DISTANCE IS AN ISSUE. THERE NEEDS TO BE CLEAR COMMUNICATION TO DETERMINE WHETHER THE PATIENT SHOULD BE STABILIZED (STAY AND TREAT) OR REFERRED IMMEDIATELY (SCOOP AND RUN).”

Best friends comforting each other during a hemodialysis treatment.

unstable for the one-hour transfer. The ideal resuscitation fluid for a case like this is blood component therapy (packed red blood cells and fresh frozen plasma), as pure crystalloids can worsen the coagulation status. Blood component therapy was unavailable at the family veterinarian’s clinic, but after a phone consult with our criticalist, Olivia was treated with an initial hypertonic saline infusion (permissive hypotensive resuscitation strategy) followed by an autotransfusion from her abdominal cavity. This combination allowed a safe transfer to the referral hospital. She arrived with a blood pressure of 75 mmHg but showed signs of disseminated intravascular coagulopathy (DIC). Olivia was stabilized with additional units of fresh frozen plasma and underwent abdominal surgery for a continuous bleed from one of her ovarian pedicles. She recovered well from surgery.

Olivia would most likely not have survived an immediate direct transfer before stabilization, and an initial large crystalloid bolus would have worsened her DIC and made her a less ideal patient for surgery.

For all critical patients, we recommend calling the referral hospital first to discuss the best options for transport and to help get the hospital’s team ready for a quick response. Sometimes initial stabilization at the family veterinarian will do more to improve survival of the patient than an immediate referral and transfer. For stable patients with fractures, we highly recommend calling the emergency hospital first. During the pandemic, our clinic coordinates closely with our surgery department to decrease the time clients have to spend in the city.

This cat arrested during transport. An intraosseous catheter has been placed.

“OUR CLIENT CONTACT TIME HAS ACTUALLY INCREASED COMPARED TO BEFORE THE COVID-19 PANDEMIC, BUT MANY CLIENTS ARE STILL UNCOMFORTABLE ABOUT NON–FACE-TO-FACE COMMUNICATION, AND ARE ESPECIALLY DISTRESSED BY NOT BEING ABLE TO VISIT THEIR PETS IN HOSPITAL.”

A Bulldog presented with increased work of breathing and found to have non-cardiogenic pulmonary edema. The dog is on a high-flow nasal cannula, an oxygen supply system capable of delivering up to 100 per cent humidified and heated oxygen at high flow rates.

Winner of a fight with a rattlesnake. High acuity.

The lack of face-to-face contact with their trusted animal caregiver, replaced by telephone and video calls, has added strain to the client-veterinarian relationship. This is especially true in an already stressful emergency situation. Our client contact time has actually increased compared to before the COVID-19 pandemic, but many clients are still uncomfortable about non–face-to-face communication, and are especially distressed by not being able to visit their pets in hospital. On the other hand, many more clients are grateful to us for providing an essential service and caring for their family members.

MANAGING STAFF STRESS

Staff members and emergency doctors have also experienced anxiety and stress over the pandemic period. Many of us have been unable to travel to see our families or friends. Activities that usually help us to cope within this stressful and intense work environment have been greatly curtailed. For many of us, it feels as if we have been continuously on call for the last few months, since we never know when one of our colleagues will need to go home because of symptoms that could be consistent with a COVID-19 infection.

To mitigate these sources of stress, there are many ways a practice can show appreciation for its teams. Our clinic has increased pizza days, brought in food trucks, and provided access to a 24-hour crisis line. We have supplemented payments for activities to help cope with mental stress. It helps to know that clients are grateful that the veterinary community is continuing to be there for their four-legged family members; acknowledging success stories in the hospital helps with morale. WCV

This little Pug developed seizures after his portosystemic shunt ligation. He spent weeks on the ventilator, was weaned off on nasal oxygen, and went home soon after his birthday celebration.

WHAT IS A TRAUMA CENTRE?

More critical trauma patients benefit from a team approach with multiple specialties and nursing staff for the best chance of recovery. Canada West Veterinary Specialists has such a team and is an identified trauma centre and VECCS Level 1 facility.

The Veterinary Committee on Trauma defines and certifies trauma centres. Trauma centres have a diverse team of specialists and nursing staff working together in initial stabilization, critical care nursing, and recovery of patients. They are equipped to handle 24/7 management of severely critical patients including mechanical ventilation, hemodialysis, high-flux oxygen therapy, and critical care nursing in the pre- and post-surgery period.

CLIENT EXPECTATIONS

Another constant goal for clinics is decreasing the wait time in the emergency room. Emergency room wait times throughout North America have significantly increased during the pandemic, with some US emergency centres now reporting wait times of four to five hours for more stable patients.

It is most helpful if the client understands prior to referral that they will be triaged again when they arrive. While their pet may be the sickest patient in the referring clinic, when they arrive at the emergency clinic, they will be assessed within a different mix of cases, and the emergency clinic will have a higher proportion of high-risk patients.

THINKING OUT OF THE SHELTER: ONTARIO SHELTER MEDICINE ASSOCIATION WEBINAR

BY CECILY GRANT, DVM

On November 7, 2020, the Ontario Shelter Medicine Association hosted a webinar "Thinking out of the Shelter: Taking Animal Care into the Community." Below is a brief summary of the speakers and their presentations. It was a very worthwhile and informative day, and I thank Dr. Michelle Groleau and the CVMA for sponsoring my attendance in my capacity as Chapter representative on the CVMA Animal Welfare Committee.

AMANDA ARRINGTON (PETS FOR LIFE) "WHY ACCESS TO PET RESOURCES IS A SOCIAL JUSTICE ISSUE"

Arrington presented some alarming statistics: 80 per cent of underserved communities have animals that have never seen a veterinarian; one in five racialized families lives in poverty in Canada; and three million families are precariously housed.

She pointed out that what happens to people impacts what happens to their pets. One of the consequences is that issues around housing are the most common reasons that people give up their pets.

It's not all bad news, however. Shifting the culture away from "If you can't afford a pet you shouldn't have one"; withholding judgment and instead extending compassion and understanding; and identifying and removing barriers to services and engagement are some of the solutions. By reframing how we define cruelty and neglect and acknowledging that most cases stem from a lack of access to resources, we can provide support and resources, allowing more people and their pets to remain together.

ALISON BRESSETTE (ABORIGINAL COMMUNITY AND ANIMAL ADVOCACY CONNECTION) "THE REALITIES OF ANIMAL WELFARE IN INDIGENOUS COMMUNITIES"

Bressette spoke eloquently and passionately about the current situation on reserves in Canada. Many First Nations experience poverty, marginalization, abuse, neglect, and a lack of compassion, as do their animals, particularly dogs. This is partially a consequence of colonization and the residential school system.

Historically, dogs had essential roles in hunting, protection, ceremony, and companionship. Dogs were and often are free roaming, and in some ways, were viewed more akin to wildlife than as family members: free to exhibit their natural behaviour, and seek food, water, and shelter. Problems of overpopulation, marauding, and mauling seem insurmountable, however, and dogs are now seen as nuisance animals. Shockingly, most child deaths from dog attacks in Canada happen on reserve.

These problems are compounded by a lack of affordable, accessible resources and services, including veterinary care. While some may see tying or chaining dogs as a part of the solution, there is actually a greater chance of unintended neglect, as people don't always understand what their needs are.

The key to healing people and their pets is to re-establish the human-animal bond. Partnerships between First Nations, veterinary clinics, and humane societies done in a collaborative, compassionate way that builds trust is important. Spay/neuter clinics, feral cat colony management, education about pet needs, including teaching empathy and compassion, and dog bite prevention programs can all contribute to an engaged community that takes pride in their pets.

DR. ELLEN JEFFERSON (AMERICAN PETS ALIVE!, HUMAN ANIMAL SUPPORT SERVICES) "HUMAN ANIMAL SUPPORT SERVICES, A PARADIGM SHIFT IN HOW SHELTERS CARE FOR ANIMALS AND THEIR PEOPLE"

Modern animal sheltering is built on the premise of separating pets from their families. Originally this was done for public safety, for example removal of stray, potentially rabid dogs from the streets. As a consequence, shelters are commonly overcrowded, yet 92 per cent of loose dogs are actually owned. Shelters tend to be centralized and are often inaccessible to those seeking return of their pet.

Dr. Jefferson proposed several solutions: decentralize services, providing them where the people and pets are; only shelter animals who truly need it; use evidence-based programs, rather than beliefs; and keep families and their pets together by partnering with human social services and other community partners.

DR. MICHELLE LEM (COMMUNITY VETERINARY OUTREACH) "SERVING HOMELESS POPULATIONS"

Dr. Lem provided more alarming statistics: approximately 235,000 people experience homelessness in one year, and 20 per cent of them are youth. Up to 25 per cent of homeless people are pet owners. There are many barriers for homeless pet owners, including issues around transportation, education, and finances. Homeless pet owners may fear or experience stigma or judgment, leading to distrust. Goals for better outcomes include advocating for systems that support and improve human health, as this directly correlates with animal health and welfare; examining one's own

PHOTO BY DANIEL CHEKALOV/UNSPLASH.COM

beliefs, attitudes, and values before helping the homeless; and recognizing the strengths, expertise, and lived experience of homeless clients. In other words, leveraging a client's experience to best help their pet.

PHIL NICHOLS (TORONTO HUMANE SOCIETY) "TELEMEDICINE—OVERCOMING THE BARRIERS TO ACCESS OF CARE"

Consider that barriers to accessibility go beyond people with disabilities. These also include challenges with location and affordability. In addition, a fear of being judged may lead people to avoid seeking care. Nichols sees great potential for telemedicine to bridge the gap and suggests that we start by understanding our client's needs. For example, if we are helping a rural Indigenous community with limited internet and phone access, providing a centralized kiosk can greatly increase accessibility. We have much to learn from human telemedicine, which is well accepted and on the rise.

KRISTINA BURNS (CANADIAN ANIMAL ASSISTANCE TEAM, CANADIAN VETERINARY OUTREACH YORK REGION AND SIMCOE COUNTY) "SUPPORTING REMOTE COMMUNITIES DURING COVID-19"

Due to the pandemic, the Canadian Animal Assistance Team is no longer able to travel to communities to provide wellness checks and spay and neuter clinics. They are maintaining their relationships and providing support through social media, supplying education on pet health and care. Common topics include cold weather care, removal of porcupine quills and fishhooks, care of pregnant dogs and cats, and care of puppies and kittens.

DR. SHANE BATEMAN (ONTARIO VETERINARY COLLEGE) "PLANNING OUTREACH ACTIVITIES IN A PANDEMIC"

A new Community Healthcare Partnerships Program has been created at OVC, and Dr. Bateman is the interim veterinary director. The program provides outreach and preventive care to underserved neighbourhoods, including remote Indigenous communities. COVID-19 safety protocols are in place, and telemedicine is being used, for example for parasite prevention and control. Veterinary students are engaged in these outreach activities, providing valuable experience. In addition, funds are available to send high school students from remote communities to OVC to experience a taste of university life and veterinary school.

DR. ESTHER ATTARD, DR. HANNA BOOTH (TORONTO ANIMAL SERVICES) "ADVENTURES WITH THE TAS SNYP TRUCK—BEFORE AND DURING COVID-19"

The SNYP truck (Spay Neuter Your Pet) provides free spay and neuter services to low-income Toronto neighbourhoods. Because of COVID-19, these services have been drastically curtailed, and in fact have stopped in most locations. The sad irony is that people in these neighbourhoods are those with the greatest need.

SUMMARY

This was an eye- and mind-opening day, as the best continuing education always is. Common themes included the connection between human and animal health, and the recognition of barriers to and solutions for access to care. Although it was Ontario-centric, this made it relevant for all British Columbia veterinarians. WCV

YOU WISH TO SAVE IT. CUT OUT THIS PAGE IF

FROM A LAWYER

COMPLAINTS *in review*

BY SCOTT NICOLL, BA, MA, LLB

Professionals in private practice are business people and, in some cases, standalone businesses. I mentioned at the outset of this column in the last issue that as professionals are businesses, we need to protect our businesses, ourselves, our employees, and our clients, while always understanding the need to put protection of the clients (the public) ahead of all the others. To that end, we are expected by our regulatory colleges, the public, and the law to have the training and skills to provide competent professional services. We receive training to enable us to do so. Our experience allows us to build on that training to become more proficient and skilled practitioners. Those of us in business, however, will be unable to practice our profession for very long if we are not also competent business people. This is so whether you own your own practice or whether you work as either a contractor or employee in a practice that you do not own.

While most professional training received in Canada is strong on the essentials needed to provide competent service to our clients, it is often entirely lacking in any meaningful training about how to do so as a business. In future columns, I intend to discuss some of those business planning successes and failures that my partners and I have encountered during our work for professionals. I will highlight what we have come to consider the best practices for arranging your business for your continued success as a professional and as a businessperson.

Before turning to the business of being a professional, however, I want to review the topics we have canvassed in this column to date. My experience suggests that if a professional is too focused on the business of the practice without first ensuring they have the fundamentals and professional best practices firmly in place, they quickly encounter serious difficulties by virtue of focusing attention on the economics of the practice at the expense of the relationship with the clients and patients. That is something that must be avoided. It is easy to lose focus on the critical elements of your professional obligations when the pressures of the day-to-day operation of a professional practice become the dominant focus of your limited attention during your day. To that end, I want to review and provide what I hope is a useful summary of the best practices discussed here to date. Please take this as a summary only and refer to the original columns and the sources cited for the additional details that I have omitted from this column in the interests of brevity.

PHOTO BY TEGAN MIERLE/UNSPLASH.COM

IF I AM THE SUBJECT OF A COMPLAINT

My first column in this space concerned what to do, and not to do, when you become the subject of a complaint to the College of Veterinarians of BC. You will recall that my advice was that you do not pick up the phone and call the College in the first instance because where you have become the subject of a complaint, the interest of the College is in protecting the public interest and not your interest. Your interest is, in fact, in conflict with the public interest being protected by the College. While you should consider contacting a lawyer with experience in these types of matters, you may not wish to do so as your first response. You should have no hesitation, however, contacting the SBCV, which is the BC Chapter of the CVMA, and asking for assistance in responding. They may be able to refer you to other members experienced in dealing with complaints to the College or other resource people for you to discuss the matter with initially. Alternatively, seek the advice of people whose opinions and counsel you have come to trust. My advice remains that you should eventually seek legal advice before responding to the College, as you want to ensure that your response does not make the initial complaint worse.

HOW TO AVOID A COMPLAINT

The next column in this space concerned how to avoid such complaints in the first place. We discussed how many complaints about veterinarians arise from a lack of sufficiently clear communication between the patient's owner and the veterinarian. Clear and frequent communication with your client is absolutely essential and ensuring that you do this adequately should be one of the cornerstones of your professional practice. Explain the treatment plan as thoroughly as possible before the treatment begins and, wherever possible, as it progresses. Ask if they have any questions and note in your file that you have done so, as your bylaws require. Remember that consent must be *informed* consent. Informed consent requires that the client understands the risks associated with the treatment and the alternatives, among other things. Make sure you review the list at Section 211 of your bylaws regularly to remind yourself of the elements of consent. I strongly recommend you use a checklist.

“WHILE MOST PROFESSIONAL TRAINING RECEIVED IN CANADA IS STRONG ON THE ESSENTIALS NEEDED TO PROVIDE COMPETENT SERVICE TO OUR CLIENTS, IT IS OFTEN ENTIRELY LACKING IN ANY MEANINGFUL TRAINING ABOUT HOW TO DO SO AS A BUSINESS.”

THE VCPR

My last column reviewed the elements of the *Professional Practice Standard: the Veterinarian-Client-Patient Relationship (VCPR)*, which may be found on the CVBC’s website under “Resources,” and then “Legislation, Standards and Policies” (portal.cvbc.ca/wp-content/uploads/2020/03/Standard.pdf). The veterinarian-client-patient relationship (VCPR) must exist *prior* to you recommending or providing any veterinarian services to a patient, unless one of the exceptions applies, and your file should show that prior to providing any services, you turned your mind to the existence of the VCPR. Your file should also show the “agreement” with the client regarding the scope of services to be provided, and my recommendation is that it should be in writing and include the specific elements that I set out in detail in the article, including those elements the standard identifies as being necessary to show that the VCPR has been established and is being maintained and that you have “recent and sufficient” knowledge of the animal (or group of animals) sufficient to permit you to make your assessment, diagnosis, and treatment of the animal(s). This agreement is important, and you should review it regularly.

The standard provides some direction on how to determine if your knowledge meets the “recent and sufficient” standard to establish and maintain a VCPR in each instance, but provides ultimately that it is a matter of “professional judgment” in each case. Factors to consider include the animal’s age, species, health status (including current medical condition), recorded medical history (including immunization history), nutrition, environment, hygiene, the type of treatment plan and medication being considered, and the recognized best practices (if any) as to how often you should see and assess an animal of that species. You should document in your file how you determined that you have or do not have “recent and sufficient” knowledge.

We specifically reviewed how your documentation of your steps taken in relation to any patient in your file is important. It will be conclusive evidence that you did what you were required to do and that you met your professional obligations, or not. You must make it a priority to give yourself the time to record the steps you take to comply with your professional obligations. We noted that this practice standard is one of the foundations of your obligations as a veterinarian, and it is important that you take the time to review and understand its elements. It is even more important, from the standpoint of a lawyer who acts for professionals, that you carefully, thoroughly, and consistently document your adherence and compliance with its requirements in your file.

MORE ON THIS LATER

These are by no means the only topics of professional regulation and best practices that we will discuss in this column. The above are what I considered the proverbial lowest-hanging fruit of the subject area. We will return to a discussion of more specific areas within the general topic area in later columns. As noted above, however, for the next several columns I want to next consider business arrangements generally as they relate to the different styles of veterinarian practices in BC. My reason for this is based solely on the volume of questions I typically receive from professional clients. While defending professional clients in regulatory matters is one part of my practice, providing business advice to professional clients is also a significant part of what our firm does. I am assuming that readers of this magazine have similar types of questions, and I hope the next few columns will help to address them at least in part.

I want to stress again, in closing, that attention to the business of the professional practice cannot come at the expense of the aforementioned best practices that any veterinarian must understand and incorporate into their professional practices as a starting point. Ignorance of or lack of attention to your professional standards and obligations in deference to the often more immediately pressing concerns of running a profitable professional practice is not sustainable for any length of time. I will stress that as we turn to an examination of running a professional business next time. WCV

Scott Nicoll, BA, MA, LLB, is a member of the Law Society of British Columbia and a partner at Panorama Legal LLP. He acts for professionals, including defending professionals who are the subject of complaints to their professional colleges.

✂ CUT OUT THIS PAGE IF YOU WISH TO SAVE IT.

KNOWLEDGE GAPS *AND MOVING FORWARD*

BY LOUISE LATHEY, BLES

As has been discussed previously in *West Coast Veterinarian*, we know that those seeking to flee domestic violence delay leaving an abusive relationship if they cannot take their pets with them. They will stay in their abusive relationship and endure whatever they must to protect their beloved pet. However, this is not the only reason that people—almost always women—stay. Another important reason is financial hardship, and this extends to animals owned by women fleeing violence. They simply cannot afford to take care of their pets when they are separated from their abuser.

If the abuser is in charge of finances, and therefore in control of payment of the animal’s veterinary care, the woman is unable to leave with the animal and also provide for their medical needs, especially if there is extensive injury or illness. The animal’s medical well-being can be used as a manipulation tool to keep the survivor from leaving, as she cannot care for the animal on her own without the abuser’s assistance.

This is a problem that concerned parties have long tried to address, and the SBCV Chapter has been working on a plan.

Dr. Fraser Davidson, Projects Committee liaison, recognized that veterinarians in British Columbia could play a significant role in helping people leave domestic violence relationships. They could provide services that remove one of the barriers survivors are faced with.

The Chapter is creating a database of veterinarians who offer aid to survivors of domestic violence. This may be in the form of discounted services, free services, emergent care, preventive care, or anything else they might be able to contribute. However, it is important to note that this is not a financial assistance program, but a program that will match veterinarians with social service providers to help animals of domestic violence. The database will be kept by the Chapter, and veterinarians will be matched with social service agencies in their area depending on the need and the resources.

The program doesn’t have any set targets yet for how many veterinarians it wants to recruit. Dr. Davidson realizes that the success of the program will depend on how many veterinarians are involved and participating, and he noted that there was a lot of interest from the veterinarian community. The program launched on April 26 of this year.

This program is the first of its kind in BC that we are aware of. It is a step in the right direction for further education on the violence link—the connection between animal abuse and domestic abuse. Knowledge of the violence link is an area of education that has, unfortunately, been lacking for veterinarians. In speaking with local veterinarians, one veterinarian noted that the only training she received on anything related to domestic violence was a brief mention in a lecture. She also encountered the topic, though minimally, in one of her rotations outside of veterinary school at an animal welfare agency. Two other veterinarians said similar things: if they learned about domestic violence, it was only in a momentary conversation during a class.

In Canada, the violence link is minimally taught, if at all, in veterinary schools across the country, and therefore such things like this independent veterinary database program must lead the way in furthering knowledge and spreading awareness.

Some schools in the United States offer some training on the human-animal bond and touch on the link to domestic violence. In Minnesota, a one-to-two-hour lecture is included in a fourth-year public health course; Cornell has one lecture in a course on shelter medicine and forensics; Tufts covers the violence link in one lecture of a course on the human-animal bond and also references it in other lectures; Washington State offers a one-hour lecture as part of the public health course; Ohio State covers the violence link in the core curriculum and offers a veterinary forensics elective that has more detail; and the University of Florida holds a one-hour elective course on the violence link.

Though having hour-long lectures is a great start, entire courses should be dedicated to understanding domestic violence and learning about the violence link. Although the main focus of a veterinarian is their animal patient, the human-animal bond is important to explore as well, given the relationship that domestic violence survivors have with their pets.

As discussed in previous articles, sometimes a veterinary office is the first place where domestic violence is seen. People take notice when an animal is hurt, but may look the other way if it’s a human. It is important for veterinarians to have the right tools to handle these challenging situations.

Veterinarians should be taught specifically about coercive control, which is a pattern of controlling behaviours that create an unequal balance in a partnership. A huge example of coercive control is when animals are used as tools by the abuser to subdue the survivor. This can happen verbally, emotionally, psychologically, or physically, and may play out in a veterinary examination room.

This type of manipulation does not necessarily manifest in injuries on an animal, but may be displayed in the way a couple speaks to each other and interacts, in the behaviour that the animal displays when the abuser is present, or in the survivor’s financial shortcomings. Domestic violence as a whole can manifest in so many ways, and there are so many nuances around it that a one-hour lecture does not suffice.

Given the magnitude of information that a veterinarian can receive during a simple exam, they need to recognize what they are seeing and experiencing. Contact with a veterinarian during a pet visit could be the first line of defense for a domestic violence survivor.

To bridge this knowledge gap and to introduce more information on the violence link, anti-violence and animal welfare professionals should design a program as part of the veterinary curriculum or at the very least, as continuing education.

If you wish to be a part of moving this training forward, consider joining the Canadian Violence Link Coalition under Humane Canada (humanecanada.ca/violence-link), which has the mandate of advancing education, awareness, and training on the violence link, and subscribe to the National Link Coalition newsletter (nationallinkcoalition.org) for information in the US, which covers topics from legislative updates to high-profile criminal cases. WCV

PHOTO BY KRISTOPHER ROLLER/UNSPLASH.COM

SO THERE'S BEEN A COMPLAINT

IT'S LIKELY NOT AS BAD AS YOU THINK

BY JUDY CURRIE, DVM

Becoming involved with a regulatory organization's complaints process is every professional's worst nightmare. The reality is, most of the time it doesn't turn out to be as bad as you may think.

"OUR PROFESSIONAL REGULATION IS NOT DONE SOLELY BY VETERINARIANS. CVBC COMMITTEES ALSO INCLUDE LAY MEMBERS WHOSE ROLE IS TO ENSURE THE INTERESTS OF OUR CLIENTS ARE ADDRESSED AND THE PUBLIC IS PROTECTED."

The majority of complaints received by the CVBC do not result in disciplinary action against a veterinarian. Most are either dismissed or resolved by agreement between the College and the registrant against whom a complaint has been made. Statistics from the 2020 CVBC Annual Report show that well over 50 per cent of complaints received by the CVBC were dismissed or closed for a variety of reasons and did not include any disciplinary action.

The veterinary profession has been granted the privilege of self-regulation to ensure public protection. Self-regulation works to our advantage because, if necessary, we will be judged by our peers, all of whom will have a far better understanding of our actions than a group of lawyers ever could. It has long been recognized that no one is more suited to judging the actions of a veterinarian than other veterinarians. Having experienced and knowledgeable colleagues on the College's committees is critical to ensuring fair decisions are made when one of us is at the centre of a complaint. Our peers will always be best suited to identify and gauge the standards by which we all must practise. Self-regulation allows CVBC-registered veterinarians to be confident that we and our colleagues are practising competently and ethically.

The CVBC's primary responsibility is to oversee the professional conduct and competence of BC veterinarians. For this reason, our professional regulation is not done solely by veterinarians. CVBC committees also include lay members whose role is to ensure the interests of our clients are addressed and the public is protected.

The process that must be followed for complaints received by the CVBC is mandated by the Veterinarians Act and Bylaws and is not open to interpretation by Council, the Investigation or Discipline Committees, or the registrar. It is the role of the College to facilitate processing of all the paperwork, arrange committee meetings, and explain the process to anyone involved with a complaint. The registrar and College staff do not give advice to CVBC members on specific cases nor does the registrar take part in any decisions made by either the Investigation Committee or the Discipline Committee. Potential complaints are initially received by the registrar, who will confirm that all necessary information has been received and the complaint is substantiated. If the registrar is not able to gather all of the essential information, the complaint will go no further.

With direction from the Investigation Committee, the CVBC inspectors review and investigate complaints about veterinarians. Investigation Committee members are recruited by a callout to all CVBC members. Applications are reviewed by a panel that considers the skills and experience of each applicant, the type of practice, the length of practice, and the geographic area in which an applicant practises. The objective is to have a group of veterinarians with broad experience from differing backgrounds who practise in a variety of locations available for Investigative Committee work. All members of the committee are volunteers who meet on a regular basis in person or by electronic means.

Once the registrar has received a complaint that contains all of the essential information required by the bylaws, it is forwarded to the Intake Panel, which is a subcommittee of the Investigation Committee. Following its preliminary review, the Intake Panel may decide to investigate or to dismiss a complaint without an investigation. Complaints may be dismissed at this stage if they are trivial, frivolous, vexatious, or made in bad faith; outside the jurisdiction of the College; an abuse of process; or filed for an improper purpose or motive.

If the Intake Panel directs an investigation, the registrant who is the subject of the complaint will be notified, and a copy or summary of the complaint will be forwarded to them along with a request that a response be made within a specified amount of time. An investigator will be appointed to gather information relevant to the complaint. This investigator will write a report that must be submitted to the Investigation Committee for review. Depending on the information gathered, the Investigative Committee will decide whether to dismiss the complaint, direct a consent agreement, or refer it to the Discipline Committee for hearing. If the Investigative Committee directs a reprimand or a consent agreement with proposed recommendations for remedial measures and no agreement can be reached with the registrant, the case must be given further consideration by the Investigation Committee.

The Discipline Committee is a three-person panel consisting of two CVBC members and one member of the nonveterinary public. There is a pool of up to 15 veterinarian volunteers and up to 10 nonveterinary representatives appointed by CVBC Council, all of whom are aware of the obligation to be fair both to the public and to the veterinarian under investigation.

Once the Investigative Committee has forwarded a complaint to the Discipline Committee for hearing, finding a suitable date for the many individuals involved is time consuming. Frequently, the lawyers, Discipline Committee members, and the person who is the subject of the complaint need several weeks or months notice to find and reserve a date.

CVBC discipline hearings are open to the public. Anyone may attend to observe the proceedings. However, as in a court of law, people present to observe cannot participate in the hearing. Once the hearing has been held, the Discipline Committee members need time to consider the evidence before them, to decide if the member has committed professional misconduct, and to deliberate on an appropriate penalty or other course of action. When the Discipline Committee has reached a decision, the registrar will take the appropriate action according to the discipline measures ordered.

If a member is found guilty, the Discipline Committee may by order do one or more of the following:

- Reprimand the respondent
- Impose limits or conditions on the practice of veterinary medicine by the respondent
- Suspend the respondent's registration
- Cancel the respondent's registration
- Fine the respondent under Section 18 of the bylaws

A registrant who is dissatisfied with the decision of the Discipline Committee may seek a judicial review of the decision by a judge of the Supreme Court within 30 days of the Discipline Committee decision.

Historically, it has been found that most complaints do not arise from medical mistakes or malpractice. Usually, they are a result of poor communication or miscommunication with a client. If you are unfortunate enough to have a complaint made against you, review your records. Often a client's complaint is due to misunderstanding your recommendations or prognosis about a patient. If your medical records clearly show what was done with a patient and what was recommended to the client, and the Investigative Committee agrees, the complaint may go no further. If, however, your medical records do not accurately document your case management, you have no way to prove what may or may not have been done at the time. This is when your colleagues will quote for you, "If it isn't written down, it didn't happen."

Sometimes, miscommunication with a client is due to poor organization within your practice or clinic. If a client's complaint highlights a problem within your practice, it is best to fix the issue right away. Don't wait for the Investigative Committee, or worse the Discipline Committee, to direct you to do so. Taking action on your own will likely be looked at favourably by the Investigative Committee or Discipline Committee.

Better yet, if you know a client is unhappy or could be unhappy because of something that happened in your clinic, talk with them. Apologize and ask if there is anything that you can do to work out a solution. Often, all a client wants is acknowledgement that things did not go as planned, that you realize things went haywire, and that you are sorry. In BC, we have an Apology Act. It is very brief and in summary states that making an apology is not an admission of guilt, and an apology may not be used in any court as evidence of fault or liability.

Processing a complaint can take many months or even years to accomplish because cases must be thoroughly investigated, thoughtfully considered, and fully discussed by the committees before any decision can be made. The best way to understand the workings of our regulatory process is to get involved. The next time there is a callout from the CVBC for volunteers, I highly recommend you consider volunteering to sit on one of the committees. WCV

PHOTO BY WAYHOMESTUDIO/FREEPIK.COM

CVMA'S 2021 PRACTICE OF THE YEAR AWARD WINNER

MOUNTAIN VIEW VETERINARY HOSPITAL

I met Dr. Renee Ferguson and the team at Mountain View Veterinary Hospital almost eight years ago when I was starting a cat rescue organization called TinyKittens. Since that time I have had the great fortune of working extensively with Renee and her team, and I have witnessed firsthand how they make our community better. They inspire compassion and kindness, and they do it with joy, grace, and incredible skill.

It's because of Mountain View that TinyKittens has been able to show the world that even the most broken, different, elderly, terminally ill cat has value. With their help, we have been able to accomplish remarkable outcomes where even the most "lost cause" cats experience years of love, comfort, and freedom from pain. Mountain View's work sends the powerful and desperately needed message that all animals are worthy of responsible care. They consistently raise the bar for veterinary care and education by embracing innovation, testing assumptions, and evolving as a practice, while having fun along the way.

It isn't just their work with our organization that makes them so extraordinary. When the team at Mountain View sees a need in the community, they take action to help. Thanks to their efforts, fire trucks in several BC communities are now equipped with pet oxygen masks, and firefighters have been trained in their use. They also conduct community education programs including emergency preparedness and the "Keep Pets Cool" campaigns where they give out free materials and window clings to save the lives of pets.

Their tireless work and passion for helping do not stop with animals, but also comfort and uplift humans daily. Mountain View supports local charities such as the Christmas Bureau and local homeless support groups, has donated thousands of dollars to help local low-income families, and has held fundraisers to support victims of the recent BC and Alberta wildfire disasters.

Above all, however, I love how the team approaches every challenging situation with the question "How can we help?" Then they throw their hearts, souls, and talent into making it happen. WCV

Contributed by Shelly Roche, Founder, TinyKittens Society

"THEY CONSISTENTLY RAISE THE BAR FOR VETERINARY CARE AND EDUCATION BY EMBRACING INNOVATION, TESTING ASSUMPTIONS, AND EVOLVING AS A PRACTICE, WHILE HAVING FUN ALONG THE WAY."

PHOTO COURTESY DRAGONFLIGHT PHOTOGRAPHY

CVMA'S 2021 HUMANE AWARD WINNER

EMILIA WONG GORDON, DVM, DABVP

Emilia Wong Gordon, DVM, DABVP (Shelter Medicine Practice), serves as the senior manager, animal health, for the British Columbia Society for the Prevention of Cruelty to Animals, where she provides animal health support, training, and oversight to 36 sheltering branches province wide. She also teaches veterinary students, participates in community partnerships and outreach, and volunteers with several groups (including the SBCV-CVMA Chapter Animal Welfare Committee) focused on animal welfare, One Health, and diversity, equity, and inclusion in veterinary medicine.

CLINICAL INTERESTS

Dr. Gordon's clinical interests include infectious disease, community medicine, internal medicine, and behaviour. She has co-authored several publications on shelter infectious disease and was the lead veterinarian investigating a multi-facility feline gastroenteritis outbreak in 2018 that led to the discovery of a novel feline virus, feline chaphamaparvovirus. Her other research interests and areas of active collaboration include animal welfare epidemiology (particularly factors leading to animal relinquishment and the link between human social vulnerability and animal vulnerability) and shelter feline behaviour and welfare.

PERSONAL INTERESTS

Originally from the United States, Dr. Gordon holds veterinary licences in California and British Columbia. In 2020, she became the first veterinarian in Canada to be board-certified in Shelter Medicine Practice through the American Board of Veterinary Practitioners. For the past 20 years, she has volunteered with organizations supporting people experiencing homelessness and their companion animals. She believes that cross-sector collaboration with a One Health emphasis is essential to the shared goals of the animal welfare, veterinary, and human health professions. These include the provision of accessible, culturally competent, community-based care that meets human-animal families where they are. WCV

Contributed by CVMA Award Files

"SHE HAS VOLUNTEERED WITH ORGANIZATIONS SUPPORTING PEOPLE EXPERIENCING HOMELESSNESS AND THEIR COMPANION ANIMALS."

PHOTO COURTESY EMILIA WONG GORDON

VETERINARIANS AND PTSD

BY JACOB K. BRYAN, BSc

In the past, post-traumatic stress disorder (PTSD) has mainly been associated with military combat and physically traumatic professions like policing and firefighting. The first known cases of PTSD trace back thousands of years with reports of ancient soldiers suffering physical ailments after the distressing experience of warfare. In the past, this phenomenon was brushed off as weakness, and even during the start of the 20th century, PTSD was not medically recognized. In military PTSD, the source of the problem is usually a battle between higher brain functions and the basic urges of the limbic system. When your body is in a situation that it recognizes as dangerous, your limbic system can sometimes tell you to run (in a military combat setting for example). But when the higher processing functions in the brain force you to stay in that situation, there can be a breaking point between these two needs in our brain. It is in this void that PTSD can develop. Building on this military cause of PTSD, the last several decades have seen the scientific community make profound discoveries surrounding identification of many other causes of PTSD.

PTSD typically presents itself following a traumatic event in a person's life. For this reason, those who work in fields with high risks for traumatic experiences such as threat of violence, witnessing death, threat of death, or horrific circumstances are, therefore, at higher risk for developing PTSD. The field of veterinary medicine has been identified as a field with a high risk of stress. Veterinarians are not only responsible to the animal, but also to the animal's owner, which can lead to difficult ethical and moral decisions.

The definition of PTSD shows us that not all who are exposed to a traumatic event will develop PTSD, but that someone who deals with death, threat of death, or physical violence is at risk. Individuals can handle these stresses up to a certain threshold. For trauma to turn into PTSD, the symptoms have to reach a point where they are debilitating to the patient's personal life in ways that will be discussed later.

There are several potential scenarios in veterinary medicine that could lead to a PTSD diagnosis. For example, a client comes in for a routine check-up with their pet, and the veterinarian discovers an inoperable tumour. The veterinarian reports this terrible news to the client who becomes enraged and threatens the veterinarian's safety. By definition, the veterinarian has now been exposed to a traumatic event (threat of violence/death) and is at risk for PTSD. A recent study done with veterinarians demonstrated that they experience conflict with approximately one out of every three pet owners. The repetitive nature of these interactions puts the veterinarian at persistent risk for developing PTSD as the effects build up and weigh on the practitioner, especially when the discussions surrounding these decisions directly impact an animal that the owner and veterinarian undoubtedly care for.

Another plausible scenario for developing PTSD involves constantly dealing with death and euthanasia. The ongoing trauma of death is an expected component of any medical profession but does not diminish the significance that it can have on the person experiencing it. It is safe to assume that veterinarians entered the field because of their passion for animals and have a vested interest in caring for as many animals as they can. When the care provider takes on this amount of responsibility and the outcome is negative, it can bring on symptoms of PTSD. Veterinarians are trauma-exposed professionals and need to be aware of the associated risk.

PTSD manifests in four different ways, which can be experienced separately or in combination. To be considered clinical PTSD, these symptoms must be present for at least four weeks:

1. Reliving the event. This symptom occurs when memories of the event come back at any time, and these memories induce the same fear or horror. For example, a person may relive a traumatic surgery or euthanasia.
2. Avoiding situations that raise memories of the event. This is a common symptom for those in motor vehicle accidents, where people may avoid the area where the accident occurred. However, this symptom can also present itself by the person trying to stay as busy as they can to avoid having to think or talk about the event. Following the threat of violence or death in the example mentioned previously, the veterinarian might avoid that client in the future for fear of their safety.
3. Negative changes in beliefs and feelings. Following a trauma, a person may look at other people or themselves differently. This could occur after interacting with an abused animal and their owner. This symptom in particular impacts a person's abilities to form relationships and may bring on the feeling that no one can be trusted.
4. Feelings of hyperarousal. Being jumpy, jittery, or always on the lookout for potential problems. This can also manifest as trouble falling asleep, being easily startled, and constantly evaluating the surroundings.

One of the most important things to recognize with PTSD is that it can develop in a myriad of ways. You and a colleague may process a situation in different ways, and it is important to recognize that what was not traumatic for one person could be so for others. Another misunderstood side of PTSD symptomology is the time frame. PTSD symptoms have been shown to present themselves sometimes years after the traumatic event.

It is also important to identify what PTSD is not. PTSD is a term that gets used in situations that do not fit its definition. Feelings of grief and sadness following an unfortunate event are not PTSD. For PTSD to develop, there needs to be a specific traumatic event and persistent emotions tied to that one event. Although grief and sadness are negative emotional experiences that need to be dealt with, they are not necessarily going to develop into PTSD.

PHOTO BY CHRIS_JSTONG/UNSPLASH.COM

"FOR PTSD TO DEVELOP, THERE NEEDS TO BE A SPECIFIC TRAUMATIC EVENT AND PERSISTENT EMOTIONS TIED TO THAT ONE EVENT. ALTHOUGH GRIEF AND SADNESS ARE NEGATIVE EMOTIONAL EXPERIENCES THAT NEED TO BE DEALT WITH, THEY ARE NOT NECESSARILY GOING TO DEVELOP INTO PTSD."

Once a PTSD diagnosis is confirmed or suspected, we must look forward to treatment. Many different treatment options have been proposed since PTSD was identified in 1980 by the American Psychological Association. After a traumatic event, it is common to act and think differently. However, when these symptoms begin to interfere with daily life for extended periods of time it is necessary to confront them with treatment. The most common form of treatment is psychotherapy. This approach generally focuses on the experience itself. These strategies include the following:

- Cognitive processing therapy, where the patient acquires thinking skills that can alter their perception of the event and enable themselves to deal with the trauma more effectively.
- Prolonged exposure, where the patient talks about the experience at length until the memory is no longer traumatic. This strategy is particularly important for people who attempt to avoid certain areas associated with the traumatic experience.
- Eye movement desensitization and reprocessing, where the patient performs hand movements or focuses on audio stimuli while talking about the trauma. This can help the brain work through the memories.

Other strategies that can help with the symptoms are pharmaceuticals and exercise. Medications for treating depression, such as selective serotonin reuptake inhibitors, have been shown to be effective in managing PTSD symptomology. My field of research involves the use of exercise, particularly high-intensity exercise, to manage PTSD symptomology. Following a bout of exercise, our bodies go through natural processes. One of these processes is the release of beta-endorphins, which have been suggested to play a role in mediating depression and provides an immediate sense of well-being that can be extremely beneficial to someone who is experiencing PTSD symptoms. The advantage of exercise is that it is free, easily accessible, and has no side effects. Studies have demonstrated that exercise is just as effective as anti-depressant medication like Zoloft in managing depression, and similar studies done with PTSD have shown similar effects. Although the field is not as highly researched as depression, it has exhibited the potential of exercise as a treatment option for those with PTSD.

Veterinary medicine is a field with high levels of stress, and the risk of PTSD needs to be identified and confronted. If you are experiencing any of the symptoms mentioned in this article, please reach out to a medical professional. The sooner the issue is addressed, the less chance it has to codify. I hope that suffering in silence becomes a thing of the past as people become more aware of PTSD and the stigma surrounding it recedes. As more research is done in the field of mental health, PTSD, and other related trauma-based illnesses, the frequency of these illnesses will, hopefully, diminish as well. WCV

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