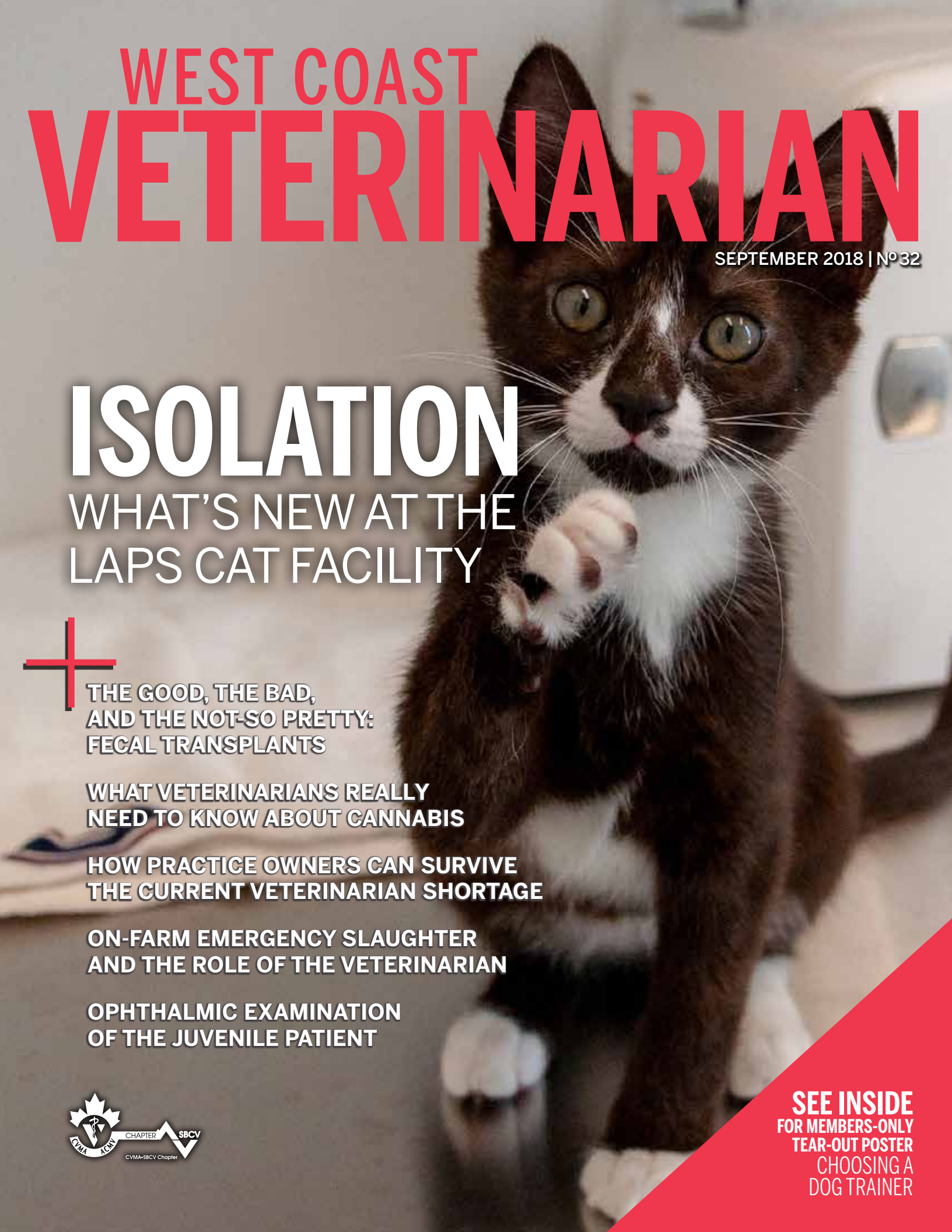

WEST COAST VETERINARIAN

SEPTEMBER 2018 | Nº 32

ISOLATION

WHAT'S NEW AT THE LAPS CAT FACILITY

+

THE GOOD, THE BAD, AND THE NOT-SO PRETTY: FECAL TRANSPLANTS

WHAT VETERINARIANS REALLY NEED TO KNOW ABOUT CANNABIS

HOW PRACTICE OWNERS CAN SURVIVE THE CURRENT VETERINARIAN SHORTAGE

ON-FARM EMERGENCY SLAUGHTER AND THE ROLE OF THE VETERINARIAN

OPHTHALMIC EXAMINATION OF THE JUVENILE PATIENT

CVMA ACMV CHAPTER SBCV
CVMA•SBCV Chapter

SEE INSIDE
FOR MEMBERS-ONLY TEAR-OUT POSTER
CHOOSING A DOG TRAINER

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– Ophelia, Kelowna BC

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– Monkey, Kitchener ON

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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 kitten on an exam table in the intake room. Courtesy of The Langley Animal Protection Society.

I am a huge fan of the arts. I know it's hard to imagine that something might take up any profile in my personal life other than dogs, but art, nevertheless, ranks pretty high. I collect paintings and sculpture and pottery, and more recently I've started searching for exemplary textiles.

My passion for visual art also led me to personally be the gold sponsor of the Art Studio Tour in my hometown of Maple Ridge. As part of that privilege of sponsorship, I was invited to say a few words, and I talked about how artists create a sense of community, of where we call home.

Working on this issue of *West Coast Veterinarian*, I see that veterinarians are no different from artists in how they reflect their communities as a sense of place. From Dr. Jessica Semper who flew to Costa Rica to work at other people's homes to ensure good equine health, to Dr. Kathryn Welsman who hung onto a connection to her former home in Langley so she could see a cat isolation facility through, from inception to opening day—literally, to Dr. Kim Hunter who, with her husband, had to build her own mobile clinic complete with a place for her to sleep, so she could provide veterinary care in other communities. It is this sense of place—of home—that, for me, connects us to our physical surroundings, our neighbours, and their animals, and allows us to belong on our individual pieces of this earth which we each uniquely and connectedly call home.

Email: wcveditor@gmail.com

A QUESTION FOR MEMBERS

The editorial and animal welfare committees are re-evaluating the inclusion of the tear-out poster for members that has been a part of the last four issues. These posters are created with significant input from the animal welfare committee followed by closer scrutiny and editing by the editorial committee. Both committees want to know if you feel the tear-out member posters have value for you as a Chapter member. Do you find them useful? Do you post them in your clinics for the public or for staff to see? Or do you ignore them and would be fine if we put our combined efforts elsewhere? Please let us know before the end of September so we can make a decision about the December issue. Thank you. Please write to wcveditor@gmail.com and put either "YES keep the poster" or "NO stop the poster" in the subject line. We are keen to hear from you.

RIGHT NOW THERE ARE DOZENS OF CLASSIFIED ADS FOR JOB POSTINGS AT

www.canadianveterinarians.net/SBCV/classified-ads.aspx

ARE YOU A VETERINARIAN LOOKING FOR WORK?
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The CVMA-SBCV Chapter has its very own made-in-BC solution for veterinarians, locums, RVTs and AHTs, office staff, and more. It's free to look and apply, and **revenue from the Chapter's classified ad pages stays in BC to support our work here.**

Simply visit our BC classified ads at www.canadianveterinarians.net/SBCV/classified-ad-form.
This is just one more way the CVMA-SBCV Chapter helps its BC members.

KOHARIK ARMAN, DVM, graduated from AVC in 2007 and entered feline-specific practice in Ottawa. She moved to Vancouver in 2009 and started working at Cats Only Animal Hospital, where she is currently employed. Koharik is a member of the Board of Directors of the CVMA-SBCV Chapter and Chair of the Editorial Committee for *West Coast Veterinarian* magazine.

JENNIFER CLOOTEN, DVM, DVSc, Dipl. ACVIM (SAIM) graduated from WCVM in 1999. She then completed her internal medicine residency at OVC and obtained her DVSc. In 2003 she became board certified in internal medicine, and practised as an internist for 13 years in the US before she moved back to BC in 2016. She currently works at VCA Vancouver Animal Emergency & Referral Centre.

MARNIE FORD, PhD, DVM, DACVO, graduated from the Ontario Veterinary College in 2000 after completing a Bachelors in Zoology at the University of British Columbia and a PhD in Physiology at Monash University in Australia. Her research interests have focused primarily on retinal function and toxicological retinal degeneration. In 2004, she moved back to Vancouver and opened West Coast Veterinary Eye Specialists.

DAVID FRASER, CM, PhD, joined UBC in 1997 as NSERC Industrial Research Chair in Animal Welfare. His work has led to many innovations in animal housing and management, from designing better pig pens to reducing highway accidents involving wildlife. He was appointed Member of the Order of Canada in 2005 for his work in animal welfare science.

KIMBERLY HUNTER, DVM, graduated from WCVM in 1983. Instead of retiring, she and her husband operate Vet to Pet Mobile Services which travels throughout northern BC serving Highways 16 and 37N up to the Yukon.

NICOLETTE JOOSTING, DVM, BSc, BVSc, graduated from Univ. Pretoria (Onderstepoort), South Africa, in 1998. She owned Vancouver Feline Hospital and Vancouver Feline Veterinary Housecall Service. She is a member of the Animal Welfare Committee of the CVMA-SBCV Chapter and currently enjoys semi-retirement in Harrison Hot Springs.

KATHERINE E. KORALESKY, MSc, completed her MSc on on-farm emergency slaughter in 2017 at the UBC Animal Welfare Program. She continues her studies with the program and will soon start the second year of her PhD. Currently, she is conducting research on how standard operating procedures are developed and used on dairy farms.

JESSICA SEMPER, DVM, graduated from WCVM in 2017. After a year interning at Burwash Equine Services in Alberta, she has returned to Vancouver Island. Outside of work, Jessica loves adventuring outdoors with her family and friends, as well as her four-legged pals: her mare Lyric and her dog Trill.

LISA WATT, DVM, graduated from WCVM in 2003. She prides herself in providing progressive veterinary care and recently completed her Fear Free certification. She lives in Maple Ridge and works at Eagle Hill Animal Hospital.

KATHRYN WELSMAN, DVM, graduated from OVC in 2007 and practised emergency medicine in the Lower Mainland until she moved to the Interior of BC and started working as a locum.

WCV
SEPTEMBER 2018

WEST COAST VETERINARIAN ISSUE 32

***West Coast Veterinarian* is the quarterly magazine of the CVMA-SBCV Chapter**

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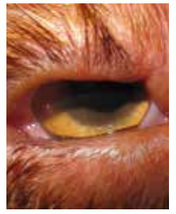
WEST COAST VETERINARIAN

24
ISOLATION: WHAT'S NEW AT THE LAPS CAT FACILITY

SEPTEMBER



18
A YEAR IN THE LIFE
OPHTHALMIC EXAMINATION OF THE JUVENILE PATIENT

30
SPECIALIST COLUMN
FECAL TRANSPLANTATION: THE GOOD, THE BAD, AND THE NOT-SO PRETTY

34
VET TO PET MOBILE SERVICE

SPECIAL TEAR-OUT POSTER FOR MEMBERS ONLY
CHOOSING A DOG TRAINER

We had a wonderful CVMA convention here in Vancouver this July. The weather ended up being agreeable, and the convention went off without a hitch. The CE was great, the boat cruise was fantastic, and I got to see many veterinary colleagues. I am equally looking forward to the CVMA-SBCV Chapter's Fall Conference and Trade Show which I hope you will all attend.

The CVMA-SBCV Chapter is at a very interesting time in its growth. We are financially stable and able to look at adding some activities. New for 2018, and hopefully finished or near-finished by the time you read this issue of *West Coast Veterinarian*, is our 2019 print directory. We have heard you asking for one over the past seven years, so we are finally making it happen. The directory is meant to be a useful tool for veterinarians, and the information must be current and complete, and must include all veterinarians in BC. It needs to be at least partially supported by advertising revenue, and the labour component of compiling the directory was provided by a Canada Summer Jobs student (totally paid for by the CSJ program). The directory will be distributed to Chapter members at no charge, as a benefit of membership. Non-members and industry supporters will be able to purchase a copy. Prior to this year, we could not afford to create, print, and distribute a directory, so for us as directors of this great group, this is big news.

We were also able to develop our new Animal Welfare Committee because of growth in non-dues revenue, sending representatives to important animal welfare conferences across Canada.

The Chapter recently moved out of our Executive Director's home office and into commercial office space, which in turn facilitated the hiring of the summer students and our new Admin Coordinator.

The Chapter is looking at what services members want and need, and how we can best provide them. As always, we focus on the needs of our members first, and the needs of the profession a close second. We are looking at how we can continue to add value to your membership while being fiscally prudent. When I am asked what veterinarians get when they become Chapter members, the answer cannot always be supported by a dollar value.

A lot of what we do will save you money (50% discount on classified ads, 50% discount on your Fall Conference and Spring CE Session fees, bring a Tech for $50, free print directory), but a lot will also add value to the veterinary profession as a whole (communication channel to animal welfare groups, universities, and the College of Veterinarians of BC; a friendly voice at the other end of the phone line who will find answers to whatever questions you ask; a keen observer of veterinary news and trends; a resource for media and government). All of these areas of membership are important to your work as veterinarians.

As we continue to grow and evolve, the best, I'm sure, is yet to come. We'd love to hear from you to help shape our future. Please email cvma-sbcv@cvma-acmv.org with your ideas and comments. WCV

Dr. Sarah Armstrong and her dog Oscar part way along the Juan de Fuca Trail.

Sarah Armstrong, DVM, graduated from OVC in 2007. Following graduation, she worked full-time in general practice and worked part-time at a local emergency practice in Southern Ontario before moving to Vancouver, BC, where she currently works as a locum veterinarian.

CVMA-SBCV CHAPTER 2019 PRINT DIRECTORY OF BC VETERINARIANS

Thanks to two Canada Summer Jobs (CSJ) grants, and the incredibly hard and efficient work of our two CSJ students, Risham Johar and Ziko Dozie, the Chapter has produced the CVMA-SBCV Chapter 2019 Directory of BC Veterinarians containing contact information, as available, for 1,565 veterinarians, 544 clinics sorted by city, and 63 specialists, plus some existing information on tattoo codes.

What can you do if your information is inaccurate or missing? Please let us know by sending your corrected information by email to bcchapterprintdirectory@gmail.com. We will hold that information until the next update. In the meantime, please enjoy this directory and thank the advertisers whose ads helped make it possible to publish and mail it to you. Thank you.

DR. ROBERT MOATS | 1950–2018

Dr. Robert (Bob) Moats (WCVM 1974), recently passed after a long battle with progressive heart failure. Bob, who grew up in rural Saskatchewan, established Clover Valley Equine Hospital in the early 1980s with his wife Marian (Dobson). True to his rural roots, Bob worked tirelessly providing full-service medical and surgical services to the BC equine community. The sign displayed above the entrance to the surgical suite, "never let the sun set on a colic," reflected his dedication to his patients. Bob truly defined the definition of being available 24/7. He was always available for consultation and advice. He always strived to improve his knowledge and skills by travelling worldwide for continuing education courses. To say that he had strong opinions about veterinary association matters and the evolution of veterinary practice would be an understatement. That said, Bob was passionate about veterinary medicine, and his opinions were heard by many and influenced many decisions regarding veterinary practice. He served on several association committees over the years but was most proud of his involvement in the Delta Equine Seminar. Those of us who knew him will long remember that conversations with him mostly involved listening, but that was one of the things that made him so special. Bob is well remembered by his many colleagues but most importantly by the many clients and friends he made during his illustrious career tending to their horses with dedication, skill, and passion.

Provided by Dr. David Paton

DR. DAVE PERRIN | 1948–2018

Dave always seemed larger than life: his 6'11" frame made him stand out in a crowd, and his equally large and complicated personality made him both a lovable and difficult business partner and friend. He had a great compassion for animals and his fellow man, a fiery temper, and a wonderful sense of humour.

He had a wide breadth of interests and a passion for storytelling, as displayed in his best-selling series of books, *The Adventures of a Country Vet*. Although born and raised in Casino (near Trail), he devoted his life to the Creston Valley and what he referred to as "all its critters."

Dave left active veterinary practice in 1997 to travel with his family and write. He continued working as a locum veterinarian for Creston Veterinary Hospital and others. In 2009, a call from the answering service alerted me that he had been in a serious accident on the Kootenay Pass. His van had plunged 500 feet down an embankment, and he suffered a broken neck, but his first priority was to let us know that he would not be in to work the next day. He had a long and difficult recovery from that accident, but was walking and even playing ball within a few years.

Dave's sudden passing has been a shock and surprise to us all; even in his 70th year, he seemed invincible. He is survived by his adult children Marshall, Joan, Gordon, and Alicia, and the mother of his children, Ruth Boemer.

Provided by Dr. Rob McLeod

As your new CVMA President, it is my pleasure to provide you with an update on some of the CVMA's recent and ongoing initiatives.

A new Kennel Code was released, which incorporates new scientific evidence in many aspects of dog breeding and kennel management. Download the Code at www.canadianveterinarians.net/Practice & Economics/Practice Tools.

The CVMA co-signed a letter addressed to the Minister of Environment and Climate Change asking the government to reduce Canadians' exposure to lead. A separate letter was sent reiterating the CVMA's stance on the use of lead fishing sinkers and lead shot in Canada. The CVMA provided input on the policy position released by the World Veterinary Association/World Aquatic Veterinary Medical Association on the Accountability for Aquatic Medicine.

The CVMA's campaign theme for the 2018 Animal Health Week, September 30 to October 6, is Vaccines Save Lives! Learn more at canadianveterinarians.net.

The 2018 version of the Canadian Veterinary Oath was revised to recognize the role of the veterinary profession in animal welfare. View the new Oath at canadianveterinarians.net/About CVMA.

The following resources have been developed to better understand a valid VCPR: Cow-Calf Producer Case Study; and Treating Honey Bees and Pollinators: What Veterinary Medical Professionals Need to Know. Listen to the CVMA Veterinary Pharmaceutical Stewardship Advisory Group explain how to establish a valid VCPR at canadianveterinarians.net/Policy & Advocacy/Veterinary Oversight of Antimicrobial Use in Animals in Canada.

The 2017 CVMA Practice Owners Economic Survey Results are available. Read more in the July issue of *The Canadian Veterinary Journal*, or online at canadianveterinarians.net/Practice & Economics Business Management Resources.

The 2018 Report on Veterinarians in Government, Industry and Academe is the national survey of veterinarians employed outside private practice, conducted by the CVMA in partnership with the OVMA and CAHI. View the report online at canadianveterinarians.net/Practice & Economics/Business Management.

Associate veterinarians in Canada had cause to celebrate in 2017. Find out why in the article in the May 2018 issue of *The Canadian Veterinary Journal* or access it online from our website.

To learn more about the following value-added member benefits, please contact the CVMA or visit canadianveterinarians.net: Pet Food Manufacturer's Rebate Program; CVMA Petcard Program; Moneris Payment Processing Solutions; CVMA Hotel Discount and Summer Giveaway (book your hotel before September 30 for a chance to win it for free); and the CVMA Insurance Program.

The CVMA recognizes the following individuals who were presented with awards during the AGM and Awards Luncheon on July 5, 2018:

- Small Animal Practitioner Award — Dr. Matt Read (AB)
- Merck Veterinary Award — Dr. Kathleen Parker (AB)
- CVMA Humane Award — Dr. Helene Van Doninck (NS)
- CVMA Practice of the Year Award — Kannon Animal Hospital (NB)
- CVMA Life Membership — Dr. Carlton Gyles (ON)
- CVMA President's Award — Dr. Barry Stemshorn (ON)

WCV

Terri Chotowetz, DVM, graduated from the Western College of Veterinary Medicine in 1990. She was elected to the SVMA in 2009, served as President from 2011 to 2012, and became the Saskatchewan representative on the CVMA Council in 2013. While on Council, she has served as the liaison for the Animal Welfare Committee and the Canadian Veterinary Reserve, and is the CVMA representative on the Western College of Veterinary Medicine Advisory Council. She lives outside Saskatoon with her husband and family and four very spoiled dogs and a cat.

Please join us in welcoming Dr. Terri Chotowetz as the 70th national president of the Canadian Veterinary Medical Association (CVMA). Dr. Chotowetz succeeds Dr. Troye McPherson whose term came to an end in July 2018.

YOUR 2018–2019 CVMA EXECUTIVE MEMBERS

Dr. Terri Chotowetz, President
Dr. Melanie Hicks, President-Elect
Dr. Enid Stiles, Vice-President
Dr. Louis Kwantes, Executive Member
Dr. Troye McPherson, Immediate Past-President
Dr. Barry Stemshorn, Treasurer

HOW TO CHOOSE A DOG TRAINER

While these guidelines focus on dogs and dog trainers, the principle of positive, reward-based training applies to all species.

Choosing a trainer for your canine best friend is an important decision. The job of a trainer is to teach you and your dog, and a good trainer will help you understand how animals learn.

- **Animals are always learning from people, the environment, and other animals (even when we are not intending to be training them).**
- **Many trainers can help with basic training as well as training for more advanced tasks and activities and helping with problem behaviours.**
- **Remember to ask your veterinarian if your animal has any problem behaviours that seem to affect their welfare (such as signs of severe anxiety). Some behaviour problems can benefit from training used in combination with pharmaceuticals.**
- **Training your dog should be fun for both of you and can make life easier and more enjoyable for you, your dog, and others around you.**

WHEN SELECTING A TRAINER, DO

DO CHECK THEIR QUALIFICATIONS You should consider only those individuals or organizations that believe in positive reinforcement and avoid fear-based training methods. As part of checking a trainer's qualifications, you should confirm that they have education and practical experience in training dogs using positive, evidence-based methods.

DO ASK FOR REFERENCES The trainer should be able to provide client references. Call these people and ask the questions you need to ask to be comfortable with your choice of trainers as well as the results and methods they use. Ask your veterinarian and other trusted animal professionals for a recommendation.

DO LOOK FOR PROFESSIONALISM The trainer should be knowledgeable, considerate, and realistic. Ask to see their certification and insurance, and be sure to review with them how they ensure confidentiality .

DO CONSIDER WHETHER YOU AND YOUR DOG BOTH UNDERSTAND THE TRAINER Trainers should be comfortable with dog body language and approach and handle your dog in a way that is comfortable for them. Trainers should explain training methods and plans to you in a way that is easy for you to understand.

DO PUT SAFETY FIRST The training area should be clean and free of hazards. Trainers should have a plan in place to manage aggressive dogs and any emergencies that come up. For group classes, look for trainers that require that all dogs have been checked by a veterinarian for basic health care.

DO BE PRESENT Training is a partnership and learning experience between people and dogs. Learning to understand your dog is just as important as teaching them to understand you, so sending dogs away for training generally doesn't work as well and, in some cases, could be dangerous or make things worse. If you are considering sending your dog away for training, do extensive research on the trainer and facility first.

DO ASK QUESTIONS Ask questions during training sessions, especially if the recommended equipment or training methods seem like they might be scary or painful for your dog. You are your dog's best advocate against inappropriate training methods.

WHEN SELECTING A TRAINER, DON'T

There is no valid or scientific reason to use punishment, intimidation, or equipment that causes pain and distress to train dogs. Studies consistently show that dogs can be trained more effectively and with no risk to their welfare using positive, evidence-based methods.

DO NOT SIGN UP FOR TRAINING IF THE TRAINER ENGAGES IN ANY OF THE FOLLOWING:

- Insists that you purchase training tools directly from them including special leashes or collars, training toys, or edible treats.
- Uses equipment that can cause pain, injury, or fear including shock, prong, or choke collars; chains or loud objects thrown at the dog; muzzles that don't allow the dog to pant, drink, or eat normally.
- Uses methods that can cause pain, fear, or stress such as hitting, kicking, pushing, alpha rolling, hanging a dog by the leash, or picking up a dog by the scruff; making harsh verbal corrections, yelling at the dog.
- Acts beyond their qualifications by making medical or veterinary recommendations; fails to refer to, or partner, with veterinarians and other behavioural professionals when needed.
- Provides a guarantee about a dog's behaviour: dogs are living beings, and their behaviour can never be guaranteed.
- Pushes your dog past their limit and does not allow them the choice of whether or not to participate in a training session. Your dog should not be showing signs of distress (which include aversion, diverting the eyes, shutting down, growling, hiding, etc.).
- Makes you feel uncomfortable. Go with your gut. You know your dog best. If you are feeling uneasy, or worried about this trainer or their methods or facility, take your dog and leave.

This poster was researched and created by the Animal Welfare Committee of the CVMA-SBCV Chapter and is provided to Chapter members at no charge to assist animal owners to keep their animals safe and secure.

THE YEAR AT A GLANCE

FEBRUARY
NATIONAL PET DENTAL HEALTH MONTH
WORLD SPAY DAY

MARCH
NATIONAL TICK AWARENESS MONTH

APRIL
PET FIRST AID AWARENESS MONTH
NATIONAL PET ID WEEK
BC ANIMAL ABUSE PREVENTION DAY
NATIONAL HAIRBALL AWARENESS DAY
WORLD VETERINARY DAY

MAY
RESPONSIBLE PET OWNERSHIP MONTH
NATIONAL SERVICE DOG EYE EXAMINATION MONTH
PET CANCER AWARENESS MONTH

JUNE
WORLD PET MEMORIAL DAY
TAKE YOUR CAT TO WORK DAY
TAKE YOUR DOG TO WORK DAY

AUGUST
INTERNATIONAL ASSISTANCE DOG WEEK
INTERNATIONAL CAT DAY
INTERNATIONAL HOMELESS ANIMALS DAY
INTERNATIONAL DOG DAY

SEPTEMBER
ANIMAL PAIN AWARENESS MONTH
WORLD SUICIDE PREVENTION DAY
WORLD RABIES DAY
RESPONSIBLE DOG OWNERSHIP MONTH

OCTOBER
ANIMAL HEALTH WEEK
WORLD ANIMAL DAY
NATIONAL VETERINARY TECHNICIAN WEEK

NOVEMBER
WORLD ANTIBIOTIC AWARENESS WEEK

BACK TO THE RACES

BY CHLOE GUSTAVSON

PHOTO BY CMANNPHOTO/ISTOCKPHOTO.COM

Sitting down to begin my article, I learn that the racehorse *Justify* has won the Belmont Stakes, bringing him the top honour of Triple Crown Winner. Reading this news, I spotted the quip "*Justify*ing the Dream" as it made its way around the internet. I couldn't help but think how fitting a motto that could be for one's journey to becoming a veterinarian.

I was introduced to the thoroughbred racing world while on a trip to Lexington, Kentucky, the summer after I finished my first year of veterinary school. My days were spent touring immaculate horse farms, shadowing surgical correction of angular limb deformities, and on the road with field service driving by rows of lush green shade trees and white picket fences. Although it seemed a world away from what I knew as familiar—for a self-proclaimed future small animal veterinarian, a size 36 endotracheal tube is most certainly a foreign object—the reality is that students at the WCVM have a strong presence in the local horse community. I was just not well acquainted with it—yet.

"FOR A SELF-PROCLAIMED FUTURE SMALL ANIMAL VETERINARIAN, A SIZE 36 ENDOTRACHEAL TUBE IS MOST CERTAINLY A FOREIGN OBJECT."

As a bright-eyed first-year student, I had on occasion joined eager equine enthusiasts and classmates with an interest in production or mixed animal practice in attending large animal clinic rounds before classes. While the specifics of diagnostic and treatment plans generally remained over my head, the language revolving around signalment and clinical presentation began to come together over time. The most memorable days of learning the fundamentals of large animal medicine occurred when, discussing right-sided heart failure or displaced abomasums, a professor would pause our lecture to take us down to the clinic, stethoscopes in hand, to examine a patient and hear the pathognomonic sounds for ourselves when the opportunity presented itself.

Building on this type of practical learning, new for the 2018–2019 school year, our Large Animal Clinical Sciences department will be welcoming student volunteers stallside, taking an active role in the hospital's current caseload. We are fortunate to have such enthusiastic teachers dedicated to continually improving our student experience here at the WCVM. Proactively making great use of the recently added life-sized advanced equine simulator in our new clinical skills lab, professors have offered up their time to demonstrate abdominal palpation and approaches to colic scenarios. Members of the faculty have reached out to student members of the Equine Club, inviting them to participate in case discussions with a working group of veterinarians and farriers on integrated approaches to managing hoof health.

Echoing the important practice of giving back, students at the WCVM make up a volunteer force of our own at various equine-themed educational events around Saskatoon. The 7th annual Saskatchewan Equine Expo in February 2019 will have students interacting with visitors at our school's trade show booth, including setting up games for 4-H and pony club attendees. At the event, students also lead public demonstrations on elements of horse care such as first aid and bandaging. Later in the year, our annual Equine Education Day will welcome schoolchildren with a keen interest in horses to our clinic, classrooms, and anatomy lab for a fun day of interactive learning organized by veterinary student volunteers. Experiences like these are a reminder that while we continue to learn, there exists a great opportunity for us to be teachers along the way. Through chasing our career dreams, we just might be inspiring the next generation to follow in our footsteps.

In return, the horse community in Western Canada provides tremendous support to our College. Current research projects dedicated to improving equine health actively involve students in the collaborative learning process. Designated scholarships help senior students pursue unique and valuable equine externship opportunities. As part of the Equine Club's annual road trip to Spruce Meadows, nearby equine practices in Alberta have welcomed our future horse vets to tour their facilities. We are very thankful for the generosity of the practitioners who encourage us and for the community we are surrounded by, as they are consistently an integral component of our success.

My class is now beginning the third year of our program. We have reached the point in our education where we start making decisions about what aspect of the profession—and which species of patients—will hold our focus moving forward. These will be our last months of classroom-based learning all together before we branch off to concentrate on elective courses. Already, I think we have learned a great deal more than we realize, and yet, we still have a long way to go. A fellow veterinary student once said to me, "Whatever animal comes through the door, I want to be able to help it." No matter which direction our paths take in the years to come, I believe our education here will allow us to achieve that goal. Even though, at this moment, I do not foresee myself performing flexion tests outside riding rings or trackside tendon ultrasonography on a daily basis, these experiences have enriched my chapters as a student veterinarian.

"PERHAPS ONE CRISP SEPTEMBER DAY A FEW YEARS FROM NOW, I WILL RECALL THE BITTERSWEET SENTIMENT OF HEADING BACK TO SCHOOL AND FEEL NOSTALGIC."

Perhaps one crisp September day a few years from now, I will recall the bittersweet sentiment of heading back to school and feel nostalgic. We have all heard how quickly our time here will pass without truly recognizing the weight of these words. Like *Justify* coming out of the gate, the race will be over before we know it. WCV

Chloe Gustavson obtained a BSc from the University of Victoria prior to coming to WCVM. She calls Vancouver's North Shore home, where she most enjoys spending time near the ocean with her dog, Leo. Upon graduation she plans to return to BC to work in small animal practice.

THE VETERINARIAN&ON-FARM EMERGENCY SLAUGHTER

BY KATHERINE E. KORALESKY, MSc, AND DAVID FRASER, CM, PhD

On-farm emergency slaughter (OFES) provides one end-of-life option for farm animals that cannot be transported humanely but are fit for human consumption. Veterinarians play a key role in OFES, and there are opportunities for the program to be improved.

"ALL PARTICIPANTS EXPRESSED CONCERN ABOUT THE WELFARE OF THE ANIMALS, BUT THIS LED SOME TO USE OFES AND OTHERS TO REJECT IT."

For OFES to occur, a veterinarian visits the farm and conducts an ante-mortem inspection to ensure that the animal is free from any systemic illness and can enter the food system. Then a transporter carries out stunning (using a firearm), bleeds the animal on the farm, and then transports the carcass to a slaughterhouse which must be reached within two hours. A provincial meat inspector carries out a post-mortem inspection before the carcass is processed. OFES is allowed in several Canadian provinces and the European Union. In BC, OFES is used for dairy cattle in the Fraser Valley where there is substantial dairy production and a slaughterhouse that accepts OFES carcasses.

OFES is a controversial practice that is used and supported by some dairy farmers and veterinarians, but not by others. To understand why, we examined ante-mortem inspection documents for several hundred animals and conducted interviews and focus groups involving 40 farmers, veterinarians, and other people involved in the process, including some who use OFES and some who do not. Some key findings follow.

First, all participants expressed concern about the welfare of the animals, but this led some to use OFES and others to reject it. Supporters of OFES tended to believe that it promotes fast decision-making for injured cows. As one veterinarian noted, with OFES some farms may make a quicker decision to slaughter an injured animal rather than try to nurse it back to a condition where it could be transported. Others, however, were concerned that OFES should not be used in place of prompt euthanasia. They noted the delay that can happen if farmers have to wait for the veterinarian, the transporter, and the slaughterhouse to be available rather than euthanizing an injured animal right away. This concern was reinforced by information that we gleaned from inspection documents showing that OFES was often used promptly on the day of injury, but, in a few cases, several days elapsed after the original injury before the animal was slaughtered.

Second, some producers felt that the involvement of the veterinarian gives legitimacy to OFES, but some veterinarians were concerned that they had not received specific training in on-farm ante-mortem inspection. In this respect, BC differs from some other jurisdictions such as Alberta where ante-mortem inspection must be done by designated veterinarians who have received specific training.

"SOME VETERINARIANS WERE CONCERNED THAT THEY HAD NOT RECEIVED SPECIFIC TRAINING IN ON-FARM ANTE-MORTEM INSPECTION."

Third, some veterinarians were concerned that OFES could create a conflict with their clients, especially in cases where the farmer had already made arrangements with the transporter and the slaughterhouse. One veterinarian described feeling pressure when asked to approve an animal "when the truck's there and the rifle's loaded."

Participants were also concerned about how OFES might affect public perception of the dairy sector, and again views were mixed. Some producers, sensitive to the scope for negative publicity about their industry, saw OFES as an improvement on the past when people might ship compromised animals to auction where they could be seen or photographed by the public. For others, however, OFES itself could be misconstrued by the public. They emphasized the need for more proactive culling of animals to minimize the number that become compromised, and for prompt euthanasia if animals become injured.

Finally, producers appreciated that OFES offered an opportunity to salvage meat from an animal they had raised and cared for, but people also expressed concerns over food safety, citing the need for hygiene on the truck and at the site of slaughter.

How can we retain the positive features of OFES while still addressing valid concerns? There are several areas where change appears warranted:

- To reduce the scope for veterinarian-client conflict, veterinarians should be clearly recognized as the first point of contact in the OFES process so that they do not feel pressured to give a positive inspection result after arrangements for OFES have been made.
- Veterinarians would probably approach OFES with more confidence if they had specific training on how to verify an animal's eligibility.
- The program would also benefit from more clarity on timing: how long a time from injury to OFES is acceptable?
- Similarly, veterinarians and producers need clarity on what injuries or conditions are allowable for OFES. If the program is intended for acute injuries such as fractures, then participants should be clear that it is not suitable for chronic conditions like lameness.
- Proactive culling should become the norm so that emergency procedures like OFES are needed less often; however, each farm should have an end-of-life decision-making protocol to use when necessary.
- Clear standards for hygiene are needed.

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OUT OF THE *WILD*

BY VERONICA GVENTSADZE,MA, PhD, DVM

The term "wild" is commonly and universally applied to domestic animals living in a feral state. There is a certain rationale behind this usage, but in the end, the term does more harm than good. Unlike truly wild animals, domestic ones were bred to live alongside humans, to be reasonably docile, and—to some extent—dependent on human care. Some species are able to survive by their wits and instincts if they escape or are turned out (pigs, rabbits, cattle); others don't stand a chance. Feral domestic rabbits are an interesting case. As a prey species that comes in a variety of conspicuous colours and patterns and includes giant breeds none too fleet of foot, they are highly vulnerable to predation. As herbivores who breed relatively fast, they can survive quite well on a herd level when edible vegetation is abundant.

So how did they end up as wildlife? The rationale is explained by Greig Bethel, spokesman with BC's Ministry of Forests, Lands, and Natural Resource Operations. "Behaviourally, feral rabbits are indistinguishable from wild rabbits and do not make suitable pets. The feral European rabbit is listed under the Wildlife Act as an invasive species for good reason: it is a non-native species that destroys property, including agricultural crops, and is detrimental to native wildlife and their habitats."[1] Except for the categorical denial that feral rabbits can make suitable pets (some can while others cannot), all of the above is true, and equally applicable to feral and free-roaming cats and dogs who are not thereby classified as wildlife. But, for the moment, let's let sleeping dogs and cats lie and adopt a charitable interpretation of the Ministry's policy. Let's assume that it's nothing against rabbits as such, and that the priority is protection of true wildlife that is native to a given area.

The BCSPCA is a voice for all animals, both wild and domestic, and its position is quite different from that of the Ministry. "Currently in BC, once established in the wild, domesticated rabbits (European rabbits, *Oryctolagus cuniculus*) become recognized and regulated as wildlife under the BC Wildlife Act and are listed as Schedule C animals of the *Wildlife Act Designation and Exemption Regulation*." The wildlife status of feral rabbits leaves them vulnerable to lethal culling for which permits are not required. In reality, such culls are unlikely to be carried out on any appreciable scale either by private citizens, who are for the most part soft-hearted folk despite all the talk of "feed 'em to the homeless," or by municipalities who know that this would be a logistical and public image nightmare. But the principle is important. In February 2017, the BCSPCA issued a position statement "supporting the removal of free-living domestic ("feral") rabbits from Schedule C designation in order to allow local governments to manage the animals under animal control bylaws."[2]

"DESIGNATING FERAL RABBITS AS WILDLIFE SENDS A STRONG IF UNINTENDED MESSAGE."

Designating feral rabbits as wildlife sends a strong if unintended message. It suggests that they are capable of living in the wild, and perhaps even happy to do so, thereby making it easier for people to turn out owned rabbits to fend for themselves. Abandonment becomes psychologically justified as returning a wild animal to its natural state, while watching rabbits grazing on the grass of college campuses or city lawns conjures up deceptively bucolic images. Until recently, the Schedule C designation of rabbits has been a major hindrance to the logistics of rescue efforts, although changes are taking place. An updated *Exemption* adopted in April 2018 allows feral rabbits to be caught, transported, and possessed without the need to obtain a permit.[3] (A permit is still needed for adoption of a feral rabbit from its original rescuer/owner). Nonetheless, with rabbits remaining on Schedule C, there is continued confusion and uncertainty as to their status, and as to what can and cannot be done in terms of rescue.

The arrival of the rabbit calicivirus RHDV2 in BC early this year has added a radically new dimension to the problem, this time reaching beyond the rabbits' own welfare and people's sentiments about them. Keeping feral rabbits classified as wildlife is potentially harmful to the very species of native animals that the *Wildlife* Act strives to protect. During an outbreak, each feral rabbit colony becomes a replication site for the virus, and a loading depot for new vectors that carry it far and wide (carnivores including dogs and cats, birds of prey, insects). While only domestic rabbits have been confirmed to be infected with RHDV2 in BC, there is no guarantee that this virus cannot cross species. Two rabbits that had died of infection with RHDV2 were presumed to be Eastern cottontails but later confirmed to be domestic European rabbits. This false alarm underscores the very real and well-founded concern about the virus' potential to jump species. In Europe, RHDV2 is known to affect several species of hares: Sardinian Cape hares (*Lepus capensis mediterraneus*),[4] Italian hares (*Lepus corsicanus*),[5] and mountain hares (*Lepus timidus*) in Sweden on a small island without rabbits.[6] All the hares who were found dead showed histopathological lesions consistent with infection by a calicivirus, which was identified as RHDV2 by real-time PCR and sequencing. In Australia, where RHDV2 arrived in 2015, it has been found in European brown hares since 2016. Hares who were found dead showed high real-time PCR titres for the virus in their livers, suggesting fulminant infection. In addition to this, serology studies were done on live hares from two populations, showing evidence of previous RHDV2 exposure in these animals.[7]

In Australia and New Zealand, where the virus has been purposely used to control feral rabbit populations, the only existing species of lagomorphs are non-native and thereby biologically expendable. North America is different. The native lagomorphs of Canada are represented by the snowshoe hare, Arctic hare, white-tailed jackrabbit, Eastern cottontail, and mountain cottontail. Several native species of hare live in the US and Mexico. Until transmission studies are carried out, it is safe and prudent to assume that RHDV2 is capable of jumping species in North America as it has done in Europe and Australia. The problem of feral rabbits does not exist in North America on the same scale as in Australia and presents an animal welfare challenge rather than an ecological and agricultural one. The number of these rabbits is not so overwhelmingly high that most cannot be removed from the wild by non-lethal means.

Following the initial rampage of RHDV2 earlier this year, the epidemic seems to have abated, but the known behaviour of RHD viruses is a reminder not to relax vigilance and biosecurity. Since it was first studied in Europe in 2010, RHDV2 appears to have become more rather than less virulent.[8] This virus does not show the forbearance of viruses that establish classical long-term relationships with a host population. For its transmission, it relies on exposure of infected organs in dead carcasses to insect vectors, and maximizes its chances by killing its host before an immune response can set in.[9] With this in mind, it is essential to get as many domestic rabbits as possible out of the virus' path by removing them from the feral state and, following quarantine, placing them under human care where they belong. A crucial step to achieving this is to take them off the list of wildlife species of BC. The term "wild" should be reserved for animals who cannot thrive in any other state. WCV

"KEEPING FERAL RABBITS CLASSIFIED AS WILDLIFE IS POTENTIALLY HARMFUL TO THE VERY SPECIES OF NATIVE ANIMALS THAT THE WILDLIFE ACT STRIVES TO PROTECT. "

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PHOTO BY CECILJAMES/PIXABAY.COM

[1] Interview given to Stephanie Ip and published in *The Province,* Sept 23, 2015. https://bcinvasives.ca/news-events/ recent-highlights/ fur-flies-over-bcs-feral-rabbits-as-animal-advocates-push-for-updated-wil.

[2] BC SPCA Position Statement on Feral Rabbits, February 2017. https:// spca.bc.ca/programs-services/leaders-in- our-field/position-statements/ position-statement-on-feral-rabbits/.

[3] Exemption 9, in: *Wildlife* Act DESIGNATION AND EXEMPTION REGULATION [includes amendments up to B.C. Reg. 52/2018, April 1, 2018]. http://www.bclaws.ca/civix/document/id/crbc/crbc/168_90.

[4] Giantonella Puggioni, Patrizia Cavadini, Caterina Maestrale, Rosario Scivoli, Giuliana Botti, Ciriaco Ligios, Ghislaine Le Gall-Reculé, Antonio Lavazza, and Lorenzo Capucci. The new French 2010 Rabbit Hemorrhagic Disease Virus causes an RHD-like disease in the Sardinian Cape hare (Lepus capensis mediterraneus). Veterinary Research 2013 44:96 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3853023/.

[5] CAMARDA, A., PUGLIESE, N., CAVADINI, P., CIRCELLA, E., CAPUCCI, L., CAROLI, A. & OTHERS (2014) Detection of the new emerging rabbit haemorrhagic disease type 2 virus (RHDV2) in Sicily from rabbit (Oryctolagus cuniculus) and Italian hare (Lepus corsicanus). *Research in Veterinary Science* 97, 642-645 https:// www.ncbi.nlm.nih.gov/pubmed/25458493.

[6] OIE report on data received on 20/01/2017 from Dr Ingrid Eilertz, Chief Veterinary Officer Director and Head, Swedish Board of Agriculture Department for Animal Welfare and Health, Ministry for Rural Affairs, Jönköping, Sweden. https://www.oie.int/wahis_2/public/wahid.php/Reviewreport/Review? page_refer=MapFullEventReport&reportid=22452.

[7] Jackie E. Mahara, Robyn N. Hall, David Peacock, John Kovaliski, Melissa Piper Roslyn Mourant, Nina Huang, Susan Campbell, Xingnian Gu, Andrew Read, Nadya Urakova, Tarnya Cox, Edward C. Holmes, Tanja Strive. Rabbit haemorrhagic disease virus 2 (GI.2) is replacing endemic strains of 2 RHDV in the Australian landscape within 18 months of its arrival. http://jvi.asm.org/content/early/2017/10/26/JVI.01374-17.full.pdf.

[8] L. Capucci, P. Cavadini, M. Schiavitto, G. Lombardi, A. Lavazza. Increased pathogenicity in rabbit haemorrhagic disease virus type 2 (RHDV2). Veterinary Record, Volume 180, issue 17. https://veterinaryrecord.bmj.com/content/ vetrec/180/17/426.2.full.pdf.

[9] Peter Elsworth, Brian D.Cooke, John Kovaliski, Ronald Sinclair, Edward C. Holmes, Tanja Strive. Increased virulence of rabbit haemorrhagic disease virus associated with genetic resistance in wild Australian rabbits (*Oryctolagus cuniculus*). Virology 464-465 (2014) 415–423. https:// www.sciencedirect.com/science/article/pii/ S0042682214003092.

Keratoconjunctivitis sicca in a dog with thick mucoid ocular discharge.

A YEAR IN THE LIFE

West Coast Veterinarian is pleased to continue with part two of our new column. Each four-part column is written by one veterinary specialist about one topic that has four distinct life phases. The articles will appear over the course of one year, highlighting the topic and what veterinarians should know about the topic and the life stages of animals. For our first topic in this new column, we introduce the ophthalmic examination.

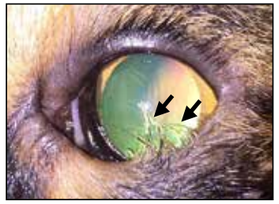
OPHTHALMIC EXAMINATION OF THE JUVENILE PATIENT

BY MARNIE FORD, PhD, DVM, Dipl. ACVO

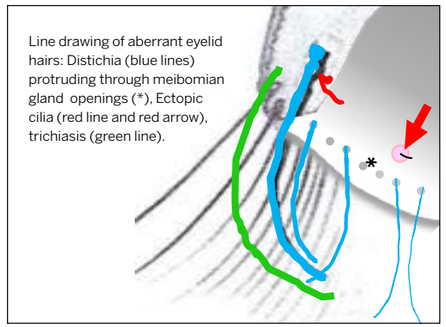
Juvenile patients frequently acquire corneal ulcers or uveitis secondary to trauma. Less frequently, inherited ocular diseases such as eyelid abnormalities, cataracts, and corneal dystrophy, or polygenic conditions such as third eyelid gland (TEG) prolapse and dry eye (keratoconjunctivitis sicca, KCS) are encountered.

Cat claw lacerations frequently occur in young dogs and cats secondary to naivety to claws in combination with an immature menace response. Such injuries often require emergency surgery and should be referred to an ophthalmologist for urgent care.

Aberrant eyelid hairs, more common in dogs than in cats, range in severity and between breeds. A focal superficial ulcer identified in a juvenile dog suggests the presence of an ectopic cilium as the cause of the ulcer. Ectopic cilia form when an aberrant hair emerges through the palpebral conjunctiva to directly poke the corneal surface. En block removal using high magnification under general anesthesia is required. Distichia protrude through the meibomian gland openings and can contact the cornea. Distichia vary in length, stiffness, number; rarely do they directly cause corneal ulcers, but ulcers can be caused indirectly via irritation and self injury. Removal of distichia is recommended in cases of irritation and ulceration. Misdirected eyelashes, or eyelid or nasal fold hairs that contact the cornea, are called trichiasis. Trichiasis is commonly seen in brachycephalic breeds with macropalpebral fissure syndrome (MFS). Chronic irritation by these hairs may cause corneal pigmentation that can be blinding. Early evaluation, management, and surgical correction of eyelid conformation by an ophthalmologist are recommended when corneal pigment is noted to be increasing.



Cat with inferior eyelid entropion and trichiasis. The arrowheads point to trichiasis.



Line drawing of aberrant eyelid hairs: Distichia (blue lines) protruding through meibomian gland openings (*), Ectopic cilia (red line and red arrow), trichiasis (green line).

Normally hidden, the TEG is anchored to the orbital wall by ligaments. The gland is most commonly prolapsed in young dogs and rarely in cats, and is aesthetically unpleasing. Often hypertrophic, which can interfere with blink function, prolapsed TEGs are easily traumatized and predispose the patient to developing dry eye later in life. Prolapsed TEG may be mildly uncomfortable when acute. Surgical replacement of the gland ("tacking") is recommended.

KCS can be described in two ways: poor tear volume (i.e., quantitative tear film deficiency) as measured by the Schirmer Tear Test (STT), or reduced tear film quality (qualitative tear film deficiency) as diagnosed by an ophthalmologist using Rose Bengal dye and measurement of tear film breakup time. The STT should be measured when persistent mucoid discharge is noted, and only when nothing has been applied to the eyes on the morning of the examination to avoid confounding the results with fluid added. Some patients can have KCS due to qualitative tear film deficiency and yet have normal STT values. KCS can cause secondary bacterial conjunctivitis, discomfort, ulcers, and pigmentation. The causes of KCS are numerous but most commonly occur secondary to immune-mediated destruction of the tear glands or to congenital absence of the lacrimal gland(s). Treatment of KCS is most commonly achieved with the application of a topical tear stimulant, sometimes supported with topical antibiotics and lubricants. In severe cases refractory to medical therapy, parotid duct transposition surgery may be performed with mixed success.

Entropion, ectropion, and lagophthalmia (incomplete blink) are polygenic conditions which are congenital or develop as the head grows and/or the facial skin becomes heavier. Entropion may be spastic due to squinting and globe retraction or, as with ectropion, can develop secondary to eyelid injury and secondary scarring (cicatricial). Entropion is exacerbated with deep set eyes, corneal pain, or MFS. Temporary tacking sutures may be placed, but permanent correction is ideally not performed until the patient has reached adult head conformation. Ectropion and lagophthalmia may be normal features in some dog breeds and may not require surgical correction.

Cataracts may be unilateral or bilateral, and vary both temporally and spatially between the lenses. Most cataracts seen in the juvenile patient are inherited, and all cataracts should be evaluated by an ophthalmologist to determine if or when surgical removal is indicated. If surgery is not elected, many patients require therapy for lens-induced uveitis.

"MOST CATARACTS SEEN IN THE JUVENILE PATIENT ARE INHERITED, AND ALL CATARACTS SHOULD BE EVALUATED BY AN OPHTHALMOLOGIST TO DETERMINE IF OR WHEN SURGICAL REMOVAL IS INDICATED."

Corneal dystrophy is inherited, often slowly progressive, typically bilateral and axial, and not associated with prior corneal disease. The deposits are typically calcium or lipid. A 12-hour fasted serum evaluation of triglyceride, cholesterol, and calcium levels may help to rule out systemic contribution to the corneal infiltrates. This condition is not reported to be irritating, however, irritation is more often associated with calcium deposition (spiky crystals versus the soft deposits of fat), and a medication can be prescribed to help blunt these sharp calcium points. WCV

ILLUSTRATION AND PHOTOS COURTESY OF MARNIE FORD

MY KINGDOM FOR A VETERINARIAN

SURVIVING THE CURRENT VETERINARIAN SHORTAGE

"ASIDE FROM THE STRUGGLE TO ATTRACT ASSOCIATES TO LESS URBAN LOCATIONS ACROSS MEDICAL INDUSTRIES, THERE ARE SOME OTHER CONSIDERATIONS THAT ARE SPECIFIC TO THE VETERINARY FIELD THAT MAY IMPACT FUTURE NUMBERS OF DVMS AVAILABLE FOR ASSOCIATE POSITIONS."

BY KOHARIK ARMAN, DVM

Veterinary clinic owners and managers often lament the difficulty of finding Registered Veterinary Technicians (RVTs) to hire in BC. Over the past couple of years, their apparent scarcity makes it seem as though they have become an endangered species in this province. But is there also another species at risk? An additional complaint commonly bandied about on the West Coast is the trouble with finding associate veterinarians, particularly in small town and rural locations.

Tracy Heyland, the Regional Operations Director of VCA Canada in BC, who oversees the hiring of DVMs in 16 different clinics across the province, both urban and rural, notes that she has "seen it take longer to fill vacancies than in previous years, and it seems to be all over BC … many hospitals, and the hospitals' owners, talk about the challenges of finding qualified applicants over the last year or two." This begs the question: is there now also a shortage of veterinarians in BC, in addition to the struggle to find RVTs? Is it simply more difficult to attract candidates to small town and rural clinics versus urban clinics, or has the high cost of living in BC driven away many of the DVMs who would otherwise be competing for local job positions?

There is a multitude of data resources that can be used to help determine what the actuality of the associate DVM supply situation is, but it must be recognized that none of the information available is ultraprecise: some reports are recent but based on statistics gathered five plus years ago, other reports are older but have larger response numbers, and still other publications make assertions based on industry assumptions. All of these deficiencies must be kept in mind, but a look at the current situation in the veterinary profession locally and abroad can help determine possible solutions to any real shortages, and in conjunction with consideration of future trends and obstacles in the supply of veterinarians, this can help the industry create forward-looking strategies to maintain a healthy workforce. Additionally, it is important to determine what individual owners and managers can do to facilitate their search for associate DVMs at the clinic level.

According to the last survey conducted for the Canadian Animal Health Institute, there are 1,693 veterinarians in BC, and there are approximately 700 clinics in the province. Currently there are 27 associate veterinarian positions in BC posted in the CVMA-SBCV Chapter classified advertisements, and 17 of those ads are for rural and small town areas of BC. This represents a disproportionately high number of positions that need to be filled outside of urban locations, since the BC Market Labour Outlook reports that 56.9% of veterinarians in the province work in the Lower Mainland. The percentage of urban veterinarians will be smaller still than the aforementioned percentage, since this number includes veterinarians in districts such as Bowen Island, Langley, Squamish, the Sunshine Coast, and the Upper Fraser Valley. The discrepancy in the proportion of job postings in small town and rural areas versus urban locations indicates that it may be more difficult to attract associate veterinarians to those regions.

When looking at the overall health of the veterinary industry in BC, the prediction for 2018 and 2019 is that the veterinary employment market for Vancouver Island and the Coast Region is fair; it is likely that there will be no substantial oversupply nor undersupply of job positions. A fair outlook also means that the supply and demand for veterinary employment and labour is close to the average for all other occupations in the same area. Unfortunately, there are no such projections available for other regions in the province, so the analysis does not provide any insights about the supply and demand of veterinarians outside of these locations. Of the job openings that are currently vacant, and those that will become available, the Department of Employment and Social Development of Canada forecasts that the majority of positions opening up in the veterinary sector are due to employment growth rather than retirements. One must keep in mind, however, that markets are fluctuant, and these predications may or may not prove themselves to be true over time. Additionally, these projections are based on data gathered from the last Statistics Canada survey conducted all the way back in 2011.

TIPS FOR CLINICS

- Ensure the presence of a well-designed and current website
- Offer a hiring bonus as incentive
- Offer the opportunity of a partnership track after the first year
- Write clinic classified advertisements for DVMs with the help of current associates to provide perspective on the best attributes of the workplace
- Offer ProSal or production-based compensation
- Advertise out of province

More recent, but still several years old, the last survey of veterinary clinics in Western Canada was conducted in 2015, and it actually showed a decline in associate veterinary positions available in BC. The response rate was 51% in BC, and the survey showed that very few clinics were in urgent need of an associate veterinarian at that time. This is an important consideration with regard to how the province should address any shortage of veterinarians that exists outside of urban locations. For example, opening a sixth veterinary school in Canada, one located in BC, would likely create an oversupply of new graduates searching for positions, and decrease the health of the job market, whereas incentivizing rural associate positions might help to increase numbers of veterinarians willing to relocate to these areas.

The main supply of new graduates in BC comes from the Western College of Veterinary Medicine (WCVM). WCVM produces 20 graduates from BC per year; however, what percentage of these graduates decide to return to BC and join the workforce here is another matter altogether. Many areas of BC have a high cost of living, with Vancouver ranked as the most expensive city in Canada. The housing and rental market in the Lower Mainland is not new-graduate-friendly, with the average cost of a home in Vancouver at $1.2 million, the average one-bedroom rental at $2,090 a month, and the average two-bedroom rental at $3,250 month. This may be why, currently, per the Canadian Federation of Independent Business Statistics, BC is facing the largest labour shortage in Canada across all industries, with 1 in 25 job positions unfilled. That said, BC also ranks in the top three provinces with regard to quality of life, ranks highest in life expectancy, and Vancouver is listed as the fifth city in the world with respect to quality of life.

Despite the expense of Lower Mainland living, the ocean, mountains, and temperate climate all lend themselves to superb living for veterinary graduates who are outdoor enthusiasts, and this draw may help counteract the steep price tag of working in BC, and Vancouver in particular. These BC-specific living pros and cons are easily identified, but with regard to quantifying their impact on the number of new graduates moving home to the province, this still remains a question mark as far as definitive data is concerned.

On the other hand, there is a dearth of information available about the approach that new graduates across Canada take when searching for jobs, and this information would be useful for clinic owners and managers in their associate recruitment efforts. The 2017 Student Canadian Veterinary Medical Association survey for new graduates showed that 31% of new graduates obtained internships post-DVM degree, 23% of graduates found employment with clinics they had worked in during their undergraduate degrees, 14% via networking, 7% via provincial VMA classified advertisements, 5% through internet searches, 2% via CVMA and CVJ ads, and 18% were listed as 'other.' These results indicate that with regard to attracting new graduates for associate positions, other than word of mouth and prior employment, the most useful methods are to advertise with provincial VMAs and place online ads.

Heyland provides good perspective on the ins and outs of hiring associate DVMs in BC. In concordance with the SCVMA survey observations, she advises that the key to filling available positions is being diversified in one's approach: use referrals from colleagues, let your team know you are recruiting, share job openings with veterinary industry friends, and place ads in key places. When discussing the range of experience she sees in associate DVM job applicants, she believes it is varied, and not particularly skewed toward either new graduates or seasoned DVMs. And indeed, when deciding who gets the job, she advises that "it's not about whether being a new grad is good or bad, it is more about the work ethic and attitude of any individual—be they a new grad or a DVM with experience … hiring for the right attitude is by far the biggest piece. I'm always happy to give someone an opportunity if they are coming from a place of passion, positive attitude, accountability, and willingness to learn."

Of course, it seems that finding those individuals with the right attitude and fit can be a challenge, particularly when trying to draw those candidates into rural areas. But when we look at the veterinary industry and job market outside of BC, it appears that the shortage of veterinarians willing to live in rural areas is not unique to the province, nor to Canada, or the veterinary profession itself: it is a global problem, and we can look to other countries and medical industries to see what remedial actions have been effectively implemented. Two such measures currently being carried out in other countries include the opening of new veterinary schools, and government-funded financial incentives for working in small towns and rural regions.

Japan has recently opted to go the former route in an effort to address the lack of DVMs servicing rural regions. There is no absolute shortage of veterinarians in Japan, and this school has stirred up significant controversy. Naturally the industry members are concerned about the additional 147 new graduates that will enter the workforce annually with the opening of this 17th veterinary school, despite the fact that the intent is for these graduates to supply rural areas in the country.

In 2015, the United Kingdom opened a new veterinary school, much to the dismay of veterinarians across the UK. But since the Brexit vote won, the concern has shifted, and the industry leaders fear that there will be an exodus of foreign workers, mostly European Union nationals, and a labour deficit will ensue. There are plans for another new veterinary school underway and, despite Brexit, many practicing veterinarians still worry that a new school could saturate the market without addressing the real problems causing the job vacancies.

In the United States, almost 4,500 veterinary graduates are produced annually, and yet the country faces the same problem of rural DVM shortages, particularly in the food animal industry. To address this issue, the United States developed a Veterinary Medical Loan Repayment Program, or VMLRP, through the US

PHOTO BY MONKEYBUSINESSIMAGES/ISTOCKPHOTO.COM

Department of Agriculture in 2010. By 2013, the USDA had already committed over 20 million dollars to the program, and to date it continues to award more than 3 million dollars annually to veterinarians through the VMLRP.

When looking at other medical professions such as dentistry and human medicine, there are similar geographical trends present. Data for human physicians from the Canadian Medical Association show that 39% of rural doctors reported having an agreement of return to service for their first practice, and 44% received retention bonuses; this is in contrast with 8% and 14%, respectively, to urban doctors. Reasons for doctors leaving rural practice included less opportunity for continuing education, increased workload and on-call duties, poor locum availability, and decreased access to specialist care. The Canadian dental profession faces similar struggles with regard to a shortage of rural dentists, and in May, the head of the Canadian Dental Association met with a federal government committee to discuss the problem. The CDA president stressed the fact that there is not an overall shortage of Canadian dentists, and that increasing the number of dentists in Canada would not provide a solution to the labour deficits in specific locations.

Aside from the struggle to attract associates to less urban locations across medical industries, there are some other considerations that are specific to the veterinary field that may impact future numbers of DVMs available for associate positions. These issues are also not unique to BC, but rather pertain to the profession as a whole, and they include the feminization of the profession and the increasing dissatisfaction of today's practitioners with their quality of life.

Currently, 55.9% of veterinarians in Canada are women, and the statistics in the United States are similar. But both Canadian and American data report that 80% of veterinary students are women, and this means that substantial feminization of the profession will increase over the coming years. While there is not an overall shortage in DVM numbers at this time, it is assumed that as the percentage of women working in the veterinary industry rises and becomes a larger majority than it already is, there will be more veterinarians looking for part-time rather than full-time work since many women wish to spend more time at home caring for their families.

"AND THIS MEANS THAT SUBSTANTIAL FEMINIZATION OF THE PROFESSION WILL INCREASE OVER THE COMING YEARS."

There is also a growing discontent in the profession with regard to skyrocketing student-loan-to-income ratios, long work hours that are not conducive to family life and work-life balance, and a high rate of burnout, compassion fatigue, and depression due to the physical and emotional stresses of the job. A survey conducted by the AVMA and Brakke Consulting showed that only 41% of DVMs would recommend the profession to others, and when looking at DVMs under the age of 35, only 24% would recommend a veterinary career to family and friends. This represents a bleak outlook for the veterinary industry and may decrease numbers of aspiring veterinarians, since supportive mentorship is key to successful application to veterinary school and professional success once out in the workforce.

"ONLY 24% WOULD RECOMMEND A VETERINARY CAREER TO FAMILY AND FRIENDS."

Looking at all the different factors at play, new veterinary schools are unlikely to be a good fit for Canada and the West Coast to address existing difficulties in finding associate DVMs and increasing the supply of professionals to small town regions. Aiming measures at developing government student loan forgiveness programs for small town and rural relocation after graduation, improving work conditions within the industry as a whole, and, individually, focusing on the most effective search tools for associate DVMs are likely to be the most helpful methods to prioritize both individually and at the provincial and industry-wide level at this time.

"DEVELOPING GOVERNMENT STUDENT LOAN FORGIVENESS PROGRAMS FOR SMALL TOWN AND RURAL RELOCATION AFTER GRADUATION, IMPROVING WORK CONDITIONS WITHIN THE INDUSTRY AS A WHOLE, AND, INDIVIDUALLY, FOCUSING ON THE MOST EFFECTIVE SEARCH TOOLS FOR ASSOCIATE DVMs ARE LIKELY TO BE THE MOST HELPFUL."

This is a broad and superficial exploration of the manifold factors influencing the quantity of associate vets available for hire in BC, and while it does not appear that associate DVMs are currently ready to be categorized as a species at risk in the province, there are geographical areas in which they remain elusive, and there are factors that may diminish their supply in the future if some environmental conditions, e.g., industry workplace deficiencies, are not corrected. Most of all, it is important to take a diversified approach to the search for associate veterinarians. WCV

A BALANCING ACT
WHEN MOTHERHOOD AND A VETERINARY CAREER COLLIDE

BY LISA WATT, DVM

PHOTO BY ORSAN ELITOK / SHUTTERSTOCK.COM

"NO ONE WAS CLAPPING FOR MY STAND-UP COMEDY ACT THAT I IMAGINED WAS SUCH A DELIGHT TO SEE."

So, it's 1:30 in the morning, in February in northern BC. I just climbed out of the car and slipped silently into bed, after a sad euthanasia while on call. The seat of my car never had a chance to warm up, since the clinic is only ten minutes away. The result is that my rear end never warmed up either—I am as frozen as the pine trees outside my home.

And then I hear it: "Waaaaah!" My eighteen-month-old son has woken up, probably from hearing a sound in the night and assuming it to be a scary monster, never imagining it to be his mom coming home on a cold winter Tuesday. His dad wakes up too and is unable to repress a sigh of frustration—with me, the baby, or both, I can only assume. Since each of us are scheduled to work the next day, and since the little guy needs to be packed up to go to his daycare in a handful of hours, we also cringe and hope that our baby boy will go back to sleep quickly.

And that the call phone sleeps too.

Parenting and practicing veterinary medicine at the same time seems like a task that can only be completed with the strength and determination of Wonder Woman.

To be honest, at times my son could use a superpower too. There is no way for him to know that his mom is exhausted and demoralized by the impossibility of managing two intensely demanding occupations simultaneously—and yes, being a mom is very much an occupation (it definitely "occupies" the mind and the schedule in Hulk-sized portions). Nor can he be aware of the crazy pace of a day at the practice where every minute counts, every person I speak to is expecting a high level of medical knowledge to be rigorously exercised, and every communication is rapid and decidedly adult-oriented. In contrast, my son's pace is his own, subject to the time since his last nap, his last meal, or his last whim. Yes, a measure of a superpower could not be put to better use.

To inhabit both the world of veterinary medicine and the world of the child, in the same day, sometimes in the same hour, is to continually feel a slight touch of vestibular disease. It is to shift gears so abruptly and so dramatically that you can almost hear a grinding sound as your neurons redirect themselves as best they can. Sometimes, mistakes are made, like cleaning up messes at work even though my next appointment is waiting, because mess cleaning is so automatic in that other world; or, once, forgetting to take off the stethoscope surrounding my neck, so that my son encountered metal when he tried to breastfeed. Occasionally, my son has raised a quizzical little eyebrow as he looked at me, but he will learn that my scratches, bruises, and the odd streak of blood are normal signs of a day's work at the clinic.

In the early days of parenting, between the exhaustion of late night calls—one crazy weekend on call entailed three and a half hours of sleep, with the remainder of the entire weekend devoted to emergencies—and late nights with a sick child, there were few moments left for reflection. I thought I had a unique plan: I thought it could all be done by closing the gaps with the glue of humour, allowing me to laugh about the cute little mistakes that would be made, entertaining people with my clumsy juggling act. Through this lens, I imagined that dropping a few balls would simply be forgiven, as a novice juggler just learning the ropes.

However, as my colleagues turned to others for help since I was "overwhelmed," and as other parents turned to my son's dad for help since he was "the more reliable" parent, unencumbered by a heavy schedule of late nights at work, the laughter dissipated. No one was clapping for my stand-up comedy act that I imagined was such a delight to see. I briefly considered a master's in biochemistry and practice ownership—but this appeared to be the closest I would get to being funny, as in, "You're kidding, right?" Joy is a close friend of humour, but for a time even that escaped me, although I worked at the greatest profession anywhere and was the proud mom of an amazing kid.

"COMING UP WITH A BETTER APPROACH—CHANNELING MY INNER SAGE, INSTEAD OF MY INNER JACK RUSSELL—ALSO HELPED, ALSO CONSIDERABLY."

Someone once told me that you can either change a situation, or change the way you feel about it. Or both. So I did, obtaining a position without call, and adjusting to a growing child with fewer demands, which helped considerably. Realizing that perfecting every last second of one's day is impossible also helped considerably. Coming up with a better approach—channeling my inner sage, instead of my inner Jack Russell—also helped, also considerably.

With time, I became aware that parenting greatly enhances the practice of veterinary medicine, cultivating a habit of thought that keeps things in "mindful perspective"—with mindfulness and perspective-taking in equal portions. For me, this entails coaching the child to become a good person and a thriving adult, realizing that my actions, not my words, are often the true coach. I flow naturally into mindful coaching of clients and staff, encouraging high quality of care of my patients, and of themselves. However, to listen, to understand a point of view very different from my own, and to genuinely help others, is to embrace the greatest challenge of all. And to forgive myself for being human, fumbling toward a better me, one screw-up at a time.

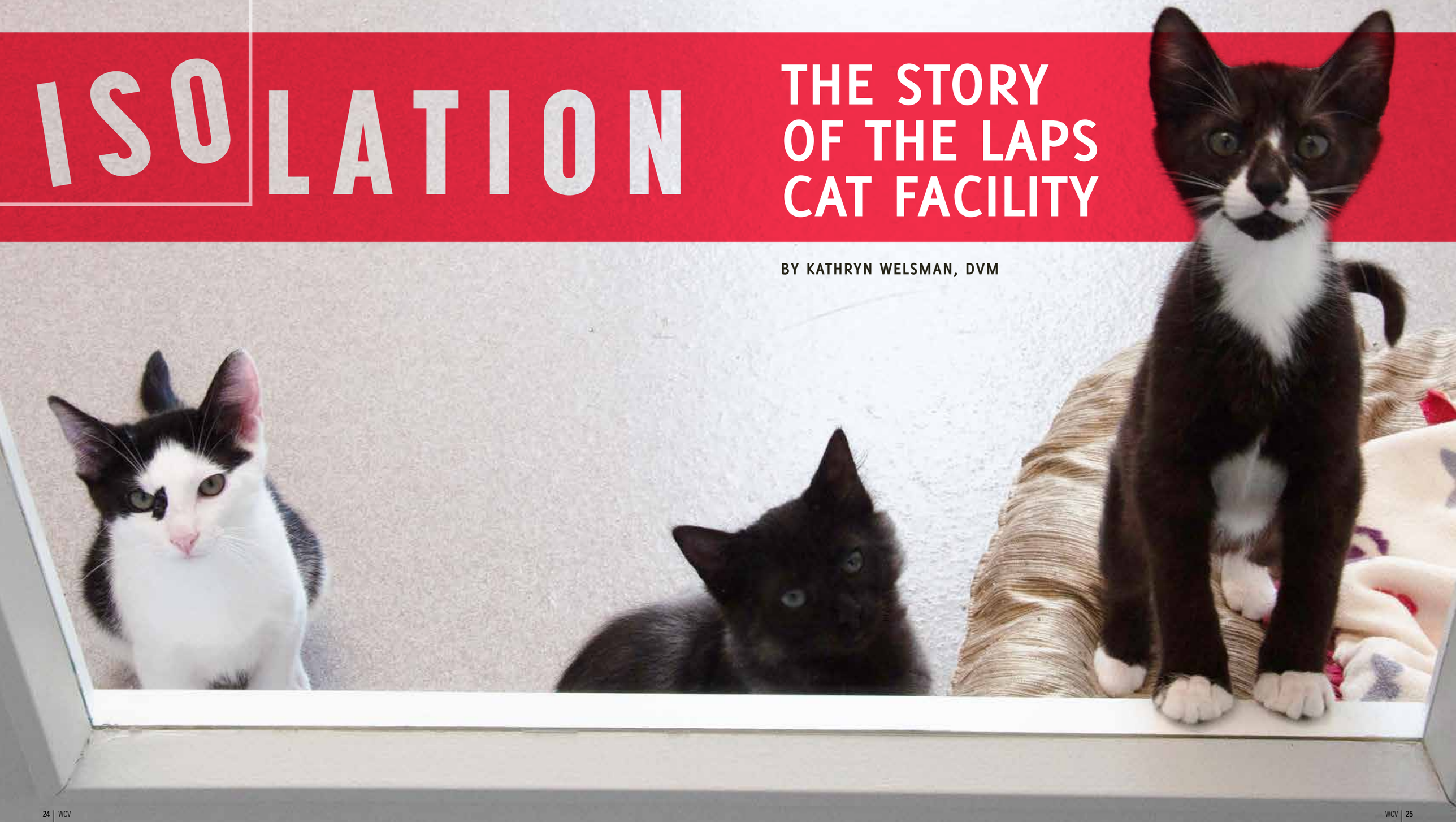
From the gargantuan love that is discovered when a child is born, we reach the epiphany that all people were once someone's beloved child, all of our pets an extension of that boundless affection for all things living and loving. And vomiting on us.

Our children hold the history of our family in their genes and the future of our family in their capable hands. Veterinary medicine has only a relatively brief history, but with rapid, Flash Gordon progress, it is soaring into the future with endless innovative ideas and approaches. All we can do is quietly and humbly guide everyone along as best we can and gasp at the brilliance of it all. And then, just as quietly and humbly, clean up the vomit. WCV

ISOLATION

THE STORY OF THE LAPS CAT FACILITY

BY KATHRYN WELSMAN, DVM



The front entrance of the facility.

PHOTOS COURTESY OF THE LANGLEY ANIMAL PROTECTION SOCIETY

The Langley Animal Protection Society (LAPS) is a non-profit shelter with a long reputation for excellence in animal welfare, always meeting and often exceeding the Association of Shelter Veterinarians guidelines. I initially got involved with LAPS as a board member when I lived in Langley, and my support continued as a board member then as Chair even when I moved into the interior of BC. I believed so strongly in what they were doing that the long-distance relationship was worth the effort.

So when the shelter's then-executive director asked me to be on a new committee for an isolation facility, I was keen to assist. The vision was to build a facility just for cats, taking into account all of their unique sheltering needs, but also to build it for isolation purposes—which has its own set of needs. Marrying cat welfare with infectious disease control isn't an easy thing to achieve, and pretty much next to impossible on a tight budget. However, we came out with a finished product we are proud of and one that sets a new threshold in cat sheltering excellence.

"MARRYING CAT WELFARE WITH INFECTIOUS DISEASE CONTROL ISN'T AN EASY THING TO ACHIEVE."

Our vision for the building was based on the cat overpopulation crisis. Since cats take a back seat to dogs when it comes to the apparent value placed on them by owners and policy-makers alike, more cats are left unsterilized, more cats aren't as well cared for as dogs, and more cats are often abandoned by owners. Many governments don't even have policies for licensing. Because of this, or at least in part because of this, we have an overpopulation issue. It isn't unique to Canada, but probably many Canadians aren't aware of the problem. To justify this facility, we needed some concrete numbers, and because it is pretty hard to do a headcount of cats in a community, we turned to the Canadian Federation of Humane Societies (CFHS), which has published two studies on this issue—the first in 2012 and the second in 2017—and we referred extensively to the 2012 study to make our case to our potential donors.

Using the stats from the CFHS, it was estimated that Langley had about 17,000 owned cats and 22,000 unowned, feral, or abandoned cats. Most of the unowned cats weren't spayed or neutered, and about 20% of the owned cats weren't either. This meant about 27,000 cats were reproducing within the community. That many cats can produce more than 80,000 kittens in one year. When I saw that number, I did a double take and had to verify it several times in case I'd used the wrong arithmetic. The magnitude of the potential problem was jaw-dropping. I guess when you think about it, even one intact cat can certainly change the landscape in terms of number of cats—two litters per year with three to four kittens per litter, who then potentially each go on to have their own kittens—you can see how quickly it can add up.

So, even if everyone agreed that we had a cat overpopulation issue, the next question was how was an isolation facility going to help? The primary goal was to increase the sheltering capacity in general for LAPS. However, the isolation part stemmed from the fact that so many cats coming into the shelter have ringworm and/or upper respiratory disease that need isolation facilities to treat efficiently. Many shelters struggle with the dreaded ringworm spreading through the facility and shutting it down. Our aim was to build a facility that would help the staff manage the disease in a more streamlined way which would also reduce staff hours and costs and—the big one—provide a more stress-free stay, all of which would help reduce the length of stay for the animals in the shelter. Kittens who have ringworm often can't be adopted out until they've past the really cute stage, thus decreasing their chances of getting adopted quickly which creates a backlog in a shelter.

Off we went, armed with this information, on the start of our three-year journey. I immediately contacted a professor of mine at OVC, Dr. Scott Weese, an infectious disease guru, for some initial input, which I think involved me sending him my crudely drawn floor plan for his comment. He probably thought my kid had drawn it, but he nevertheless provided some wisdom and advice, and I took his comments back to the committee. The committee also had on board the animal welfare manager Jayne Nelson, who has since become the new executive director of LAPS. She has a wealth of animal sheltering knowledge and was keen to reach out to the Koret Shelter Medicine program, run out of UC Davis. Our conference call with two of their veterinarians was very helpful, and clearly they were shocked to see people so committed to building a facility just for cats. These two shelter specialists pointed out that they weren't aware of a facility such as this anywhere in North America.

We engaged an architect who helped us make our stick drawings on a napkin become reality. Once we had an idea of what the facility should entail and a general idea of a budget, we embarked on a very long fundraising journey. We estimated that this unique standalone facility would cost about $600,000, a pretty hefty price tag for anything, but an especially high price when trying to convince people to support cats. LAPS has a strong relationship with the Township of Langley, as LAPS provides bylaw services for both the City and the Township of Langley, so we approached the Township about providing some funding. One of the key milestones in this project was a presentation that I and another board member made to the Township of Langley mayor and councillors recruiting their support. I can say with certainty that when I graduated vet school I never thought that I'd be pitching anything in front of government, so it was definitely an interesting experience.

After our presentation and hearing all of the issues that are potentially associated with cat overpopulation (bird predation, disease transmission, cat welfare, neighbourhood nuisance), the Township of Langley was keen to help us reach our financial goal. This was very forward thinking, as the CFHS report indicated that most municipalities in Canada don't believe there is a cat overpopulation issue. To have gained the support from the Township of Langley certainly boosted Langley to the forefront of animal welfare and sheltering.

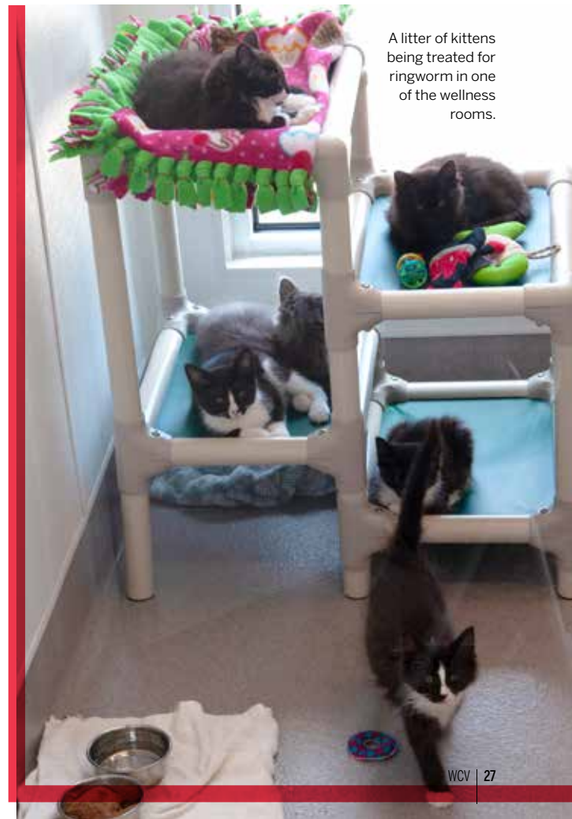
With newly printed architectural plans and financing nearly secured, we put our project out to tender for a construction company. This was another first for me, and a steep learning curve that, luckily, our architect guided us through. To our shock and dismay, all of the bids came in at the million-dollar mark, well over our budget. We were speechless. The dream of making this one-of-a-kind cat isolation facility a reality was fast fading. Then our fairy godmother appeared in the form of ENM Construction, a family-owned Langley-based company who offered to build the facility at no profit to themselves and committed to building it within our budget. ENM built our dream, showing a real spirit of community and appreciation for animals.

Part of the intake area on the grand opening day.

After at least ten redesigns to the building plans, the ups and downs through the tendering and fundraising processes, and all the usual construction hiccups, the LAPS cat isolation facility opened for business this past spring. In April 2018, we had our grand opening to show off the shiny new building, complete with ribbon cutting and sparkling wine. The shiny new appearance didn't last long as the very next day the rooms were in use by litters of kittens, and they haven't stopped coming since. As the saying goes, "If you build it, they will come." This probably accurately describes most shelters and was obviously the case for this building.

The building has some unique features that are readily apparent. There are lots of stainless steel surfaces for ease of cleaning, and the floors and walls were made of special materials (FRP and epoxy) for ease of cleaning. Self-contained rooms, each with their own ventilation, drainage and cleaning system, fridge, and all of the equipment such as scales/towels/litter, mean that disease is less likely to spread, and we created "dirty" and "clean" areas to try to maintain disease separation. One room is designated for a Wood's lamp to enhance screening for ringworm, with a space for completion of fungal cultures. A self-contained building, including washing machine and dryer, all cleaning equipment, staff clothing, bathroom, etc., reduces the spread of disease back into the main shelter.

Of course, we built the building with the cats in mind, so there are multiple cat welfare aspects



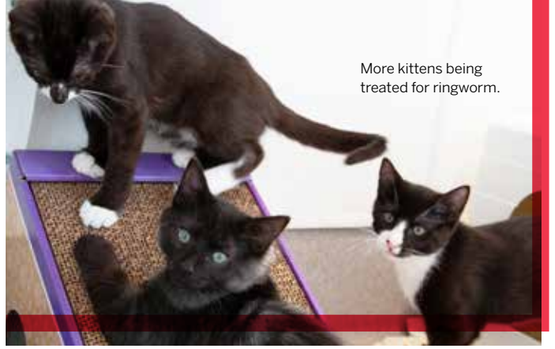
A litter of kittens being treated for ringworm in one of the wellness rooms.

"BEST CARE, BEST HOUSING."

including significant natural light, windows low enough for kittens to use, hiding places, and vertical surfaces. The rooms are also big enough for adult cats or litters of kittens, to allow for flexibility with the needs of the shelter.

The day of the opening ceremony was my last day as Chair of the Board of Directors, and the end of my eight-year formal association with LAPS. To get a sense of where things are now, I asked Jayne Nelson how it was working. She said, "This building has already demonstrated its value both in providing very low-stress housing for the cats and kittens who have already benefitted from the spacious and cat-centred accommodation and for staff who have benefitted from working in this easy-to-clean, self-contained, and easy-to-maintain, ISO-protocol facility. It has lowered everyone's daily stress level." Jayne and I were the only two people who stayed with the project from start to finish, and I asked what it meant to her to have it finally open. "As the executive director, I want to ensure that we are not only providing the best care, best housing, possible for the animals who come to us, but I also want to ensure that we are supporting our staff as much as possible. This facility allows us to do both. In addition, it was pretty terrific to see the facility fulfilling its purpose—as soon as it was open, it was at capacity almost instantly, clearly demonstrating the need. It feels great to be able to help more animals in our community, and it has already provided us with an opportunity to help another shelter that is without an isolation area."

I know I learned a lot, as did Jayne, and I wondered what her advice would be to any other shelters/veterinarians who might



More kittens being treated for ringworm.

be considering a project like this. "If they are able—do it! This was not an inexpensive undertaking and took the help of hundreds of people to raise the money and actually build the facility. Seeing how well, incredibly relaxed, and content the cats and kittens are during their stay at our ISO facility, and seeing how much easier cleaning and care of the animals is in a purpose-built isolation facility makes it all worthwhile. We all need to continue to work toward advances in the treatment and care of shelter animals."

This was a long journey but one that has allowed me to learn a great deal, and it makes me proud to see the people in a community rally around the animals in that community. WCV

CLINIC RESOURCES

CFHS
www.humanecanada.ca

Association of Shelter Veterinarians
www.sheltervet.org

LAPS
www.lapsbc.ca

Koret Shelter Medicine Program
www.sheltermedicine.com

FECAL TRANSPLANTATION: *THE GOOD, THE BAD, AND THE NOT-SO PRETTY*

BY JENNIFER CLOOTEN, DVM, DVSc, Dipl. ACVIM (SAIM)

Cookie, a fecal transplant recipient

Cookie is a two-year-old male neutered Dalmatian, evaluated in April of 2018. He presented with a chronic intermittent history of diarrhea (small and large bowel) and vomiting. He had not responded to dietary trials (hydrolyzed protein, vegetarian, novel protein, home-cooked), metronidazole, or fenbendazole. Recent fecal testing (ova/parasite, giardia, and diarrhea PCR) had been performed and was negative. Cookie's evaluation consisted of abdominal ultrasound, baseline cortisol, and cobalamin/folate/TLI testing. Abdominal ultrasound revealed mild mesenteric lymph node enlargement and mild small bowel thickening. Baseline cortisol ruled out Addison's disease, and cobalamin was low. Upper and lower GI endoscopy was performed, and biopsies of the stomach, duodenum, ileum, and colon were obtained. Histopathology confirmed moderate mixed enteritis (eosinophilic, neutrophilic, and lymphoplasmacytic) and mild lymphoplasmacytic and neutrophilic gastritis.

After Cookie was treated with omeprazole, fenbendazole, tylosin, prednisone, and a low-fat Kangaroo diet, his gastrointestinal signs partially improved. However, his stool remained very soft to liquid (fecal scores 5 to 7). His owners were also concerned about his prednisone-related side effects which included muscle/weight loss, lethargy, liver enzyme elevation, and increased thirst/increased urination.

Cookie was weaned off prednisone, and fecal transplantation was discussed with his family. His owners had already read about fecal biotherapy on the internet and were eager to proceed with a fecal transplant. He received one fecal transplant and, approximately three weeks post treatment, his fecal scores are in the 2–3 range. Today, Cookie's owners are pleased with his progress as he is off all medications except for daily vitamin B12 supplementation and a protein pump inhibitor.

PAGE 31 LEFT TO RIGHT
Fecal transplantation setup and equipment; Cookie receiving a fecal transplant.

PHOTOS COURTESY OF JENNIFER CLOOTEN

"DIFFERENCES IN SCREENING PROTOCOLS AND DONOR/PATIENT SELECTION HAVE LIKELY LED TO MANY DIFFERENT LEVELS OF SUCCESS."

Over the past couple of years, fecal biotherapy has gained interest as a potential therapy for cats and dogs with chronic and difficult-to-treat gastrointestinal disease. Similar to human medicine, many successful treatment outcomes have been reported in small animals, and I am pleasantly surprised by how many clients are open to this as a relatively new treatment option for their pets. Many veterinarians have tried alternative treatment options for their patients, and as an internal medicine specialist helping with the management of a number of patients with chronic and often debilitating gastrointestinal diseases, I'm finding that fecal biotherapy has offered an option for pets (and frustrated owners) that have already been through multiple diet trials and a variety of medications with only limited or partial clinical improvement.

Fecal transplantation or fecal microbiota transplantation (FMT) is relatively common in human medicine. It is a very effective method for treating people with recurrent or severe *Clostridium difficile* infections; however, it is also used to treat people with inflammatory bowel disease (IBD), ulcerative colitis, irritable bowel syndrome, and celiac disease. The possibility of using fecal biotherapy for treating obesity, diabetes mellitus, rheumatoid arthritis, and other autoimmune diseases is also being investigated in human medicine. The idea of fecal biotherapy is not a novel one, dating back to fourth-century China as a treatment for severe food poisoning in people; however, the first use of FMT in modern medicine did not occur until 1957. In veterinary medicine, there is a history of FMT use in veterinary medicine (horses and cattle) dating back to the 17th century.

Veterinary studies have documented that dogs suffering from both acute (infectious, non-infectious, and hemorrhagic) and chronic enteropathies (food- or antibiotic-responsive and IBD) suffer from fecal dysbiosis when compared to healthy dogs. Dysbiosis is a disruption or imbalance in the normal GI microbiota; it may result from an increase or decrease in a number of commensal bacteria and may involve the introduction of pathogenic organisms, or the proliferation of opportunistic bacteria. Because the microbiota is a metabolically active "organ," dysbiosis may also impact the production of beneficial nutrients or metabolites, such as short-chain fatty acids or secondary bile acids.

Dysbiosis in dogs can also be found with GI motility disorders, exocrine pancreatic insufficiency, and with the use of antibiotics or gastric acid reducers. Bacterial types thought to be important in intestinal health are decreased in these dogs. Altered microbiomes have also been documented in feline diarrhea, both acute and chronic. Changes in feline GI bacterial groups resulted in changes in the microbiota metabolism of fatty acids, biotin, tryptophan, ascorbate, and glycosphingolipids. Unfortunately, to date, there has been little evidence that therapy with probiotics or prebiotics is capable of altering the microbiome in these disease states. The idea behind FMT is to effectively change the microbiome to create the environment that exists in a healthy gastrointestinal tract.

Fecal transplantation is a simple technique that involves collecting feces from a healthy donor animal and entering it into the gastrointestinal tract of the patient in question. In people, the most common method is via colonoscopy as the fecal suspension can be instilled directly into the colon as well as the ileum. In veterinary patients, fecal transplantation is most often performed via a retention enema; however, it can also be performed during endoscopy/colonoscopy or via oral administration with a capsule or slurry.

Fecal transplants have already shown positive anecdotal results in treating chronic and acute diarrhea in cats and dogs, however, there is no standardization to the therapy, and it is still considered experimental by some veterinarians. Differences in screening protocols and donor/patient selection have likely led to many different levels of success. There are various difficulties in performing and interpreting clinical trials for chronic

> "IT WAS FOUND THAT THE ADDITION OF FMT TO STANDARD SUPPORTIVE THERAPY DECREASED MORTALITY RATE AND AVERAGE RECOVERY TIME."

diarrhea in dogs and cats, particularly given the multifactorial nature of the disease. There are reports of cures following a single FMT treatment, temporary improvements only, as well as the need for multiple transplants over a period of time. In a recent study involving 66 puppies with acute parvoviral enteritis, it was found that the addition of FMT to standard supportive therapy decreased mortality rate and average recovery time. Additionally, no adverse effects were noted. The study reported that risks associated with fecal transplantation were low, and aside from the risks associated with sedation, transplantation of properly screened donor stool posed very little harm to the recipient.

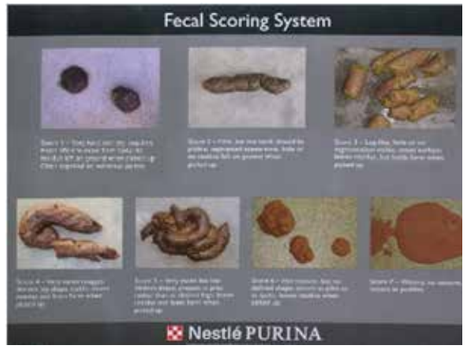
Coco, a fecal transplant recipient.

PATIENT SELECTION

Patients are often selected based on the presence of chronic diarrhea and/or vomiting that is non-responsive (or poorly controlled) to standard therapies including diet manipulation, antibiotics, immunosuppressive medications, prebiotics/probiotics, and deworming protocols. Consideration should also be given to patients who do not tolerate immunosuppressive medications (e.g., prednisone, cyclosporine, chlorambucil) for the treatment of IBD, patients with chronic giardiasis, puppies with acute parvoviral enteritis, and patients with antibiotic-responsive diarrhea. For patients with chronic gastrointestinal signs (especially cats), it is ideal to perform biopsies of the gastrointestinal tract to rule out low-grade small cell intestinal lymphoma as it can often be difficult to distinguish clinically from IBD. Prior to fecal transplantation, all patients must not receive systemic antibiotics for a minimum of three days.

DONOR SELECTION

In humans, donors are extensively screened for enteropathogens and bloodborne pathogens. Additional restrictions typically involve recent antimicrobial usage, immunosuppressive administration, GI disease, and other comorbidities. To date, the screening protocol has not been as vigorous in our veterinary patients. There are different screening protocols in use for canine and feline fecal donors, and this protocol varies by hospital and clinician preference. Questions such as what to screen for, how frequently to screen, and how to test can be controversial, or at least lacking in consensus.



Fecal scoring chart for monitoring purposes.

Donors are typically healthy pets between the ages of one to seven years with no history of gastrointestinal upset within the previous six months. Patients with IBD, atopy, malignancy, obesity, and chronic diarrhea should be excluded from being donors. The donor pet must not be fed a raw-food diet or raw-based treats and must not have received systemic antibiotics or immunosuppressive medications in the six months prior. Most donors are screened and have tested negative for pathogens with a fecal PCR panel *(Salmonella, Campylobacter* spp., *Cryptosporidium, Giardia* spp., *Clostridium* spp, *Tritrichomonas*, parvovirus, circovirus) in addition to having a negative fecal flotation for ova and parasites.

FECAL TRANSPLANT

In human medicine, both fresh and frozen stool have shown to be effective for successful FMT. In veterinary patients, it is typically recommended to use and prepare freshly passed donor stool within four hours. The stool is placed in a blender with saline (one part stool to four parts saline) and blenderized until smooth. The suspension is strained to remove larger pieces of particulate matter. Filtering the suspension facilitates removal of hair and other material that will reduce the likelihood of the homogenate clogging the tube or biopsy channel of an endoscope, if this is used for the FMT procedure. The donor fecal suspension is delivered via retention enema at a dose of 10 ml/kg with a red rubber catheter. The need for pre-FMT enemas in the recipient to ensure removal of retained feces and enhance the success for the FMT procedure is controversial and is not performed at my practice.

Fecal transplant set up.

Tucker, one of our fabulous fecal donors.

Healthy and active cats and dogs typically receive light sedation as they must remain in lateral recumbency for approximately 15–20 minutes. Dogs and cats are also pre-treated with maropitant to prevent nausea or vomiting that can be associated with enema administration. The patient is kept quiet in a cage for the remainder of the day to prevent a premature bowel movement. Clients are encouraged to monitor fecal consistency and fecal score for follow-up purposes. The cost of FMT varies according to the methods used, testing procedures required, cost for sedation, veterinary consultation, and donor screening; however, it can range from $500 to $1000.

> "THERE IS ALSO A RECOMMENDATION THAT CHANGING DONORS MAY BE BENEFICIAL IF MULTIPLE TRANSPLANTS ARE BEING PERFORMED IN A SINGLE PATIENT."

OUTCOMES

Studies have documented that, by two days post-fecal transplant, the patient's microbiome resembles that of the donor stool. Clinical improvement can take upwards of one week, however, some patients have shown improvement in fecal consistency within 24 hours of the transplant and many have remained clinically normal thereafter. For those performing fecal transplants, it has been noted that two to three fecal transplants per patient, weeks apart, may be required to achieve a successful outcome. There is also a recommendation that changing donors may be beneficial if multiple transplants are being performed in a single patient.

Fecal biotherapy is an exciting treatment option for chronic and acute enteropathies in cats and dogs. It is of increasing interest as an apparently safe, effective, drug-free and relatively low-cost approach to gastrointestinal disease. I suspect that over time it will gain considerable acceptance for our veterinary clients as a more mainstream treatment modality. Currently, there is abundant anecdotal information regarding FMT therapy in pets with the hopes of more objective data coming in the near future. WCV

Inside the slide-out: exam and prep area.
THIS PHOTO COURTESY OF KIMBERLY HUNTER

"I DID CHRISTEN THE TRAILER IN THE EARLY MONTHS, WITH AN EMERGENCY LEG AMPUTATION ON A CAT."

VET TO PET MOBILE SERVICE

BY KIMBERLY HUNTER, DVM

After 35 years of mixed practice and helping kids through college, I realized I could not afford retirement. Looking for something more meaningful in practice life, but not wanting the huge cost of buying a clinic, I was inspired when I saw Cariboo Country Mobile Veterinary Services parked in Quesnel, BC. After spending some time on location with the owner Dr. Pam Barker, the seed was planted. I had worked all over BC, but kept returning to spectacular Smithers, where the community grabbed our hearts. My boss was retiring and selling the clinic where I worked, which galvanized my husband, Jerry, into action to convert the 30-foot travel trailer we found suitable. I love spaying and neutering, so I wanted space to be able to do that, not just medical appointments. As I was approaching 60, I planned to simplify the demands of business by limiting my private practice to small animals, with no technical lab equipment or X-ray capability, and no emergency call.

"THE SEED WAS PLANTED."

Vet to Pet Mobile Service was launched in April 2016 with one vet, one assistant, and one summer student. With limited staff and space, I did not want to be saddled with the phone. With no waiting room, appointments were all booked in the cloud, and even surgery drop-offs and pickups were staggered and planned. All the business phone calls went to my receptionist, an at-home mom who contacted us if she needed to send us to an emergency during the day. With no ability to hospitalize, emergencies of any magnitude were referred. However, I did christen the trailer in the early months, with an emergency leg amputation on a cat, plus a successful C-section on a Labrador.

In starting, we had no financial resources of our own and relied on an $85,000 bank loan. Knowing it wouldn't be enough, we made it work. Although Cariboo Country Mobile Veterinary Services was efficient in a converted car haul trailer, I found the travel trailer conversion was cheaper. I needed a trailer under 10,000 pounds GVW (length doesn't matter) to avoid upgrading my Class 5 license. Plus, I knew my travel distance could be more than one hour each way, so I wanted sleeping quarters. We found a used working travel trailer for $10,000. A ten-foot slide expanded to give an extra four feet width, which seemed ideal (although we found later that a slide comes with its own challenges). Having never operated a trailer, it was a huge learning curve. Pulling and parking the trailer was the easy part. Troubleshooting electrical trailer problems, and mastering the software and electronics, truly required the ability to not sweat the small stuff.

THIS PAGE, TOP TO BOTTOM:
The end of a long day;
The start of it all: our first location in the Smithers golf course parking lot.

PHOTOS COURTESY OF MARK WEST PHOTOGRAPHY

While I did locums to pay the bills, Jerry started the work. He ripped out the master bedroom, leaving the overhead cupboards, which became storage for packs and surgical supplies. Next, out came the dining table and couch, making room for a horizontal bank of kennels. The beauty of technology and used equipment came together: I had the good fortune to find stainless steel kennel doors for sale, used, for $100 each. Jerry crafted two large bottom cages with three smaller ones on top, lining them with sealed arborite. Some leftover space on top of the large kennels made a countertop. We kept the fridge and stove, but replaced the sink with a larger stainless steel one, with an extendable spray nozzle, that would hold a small dog for a bath.

One portable anesthetic machine sits neatly on the kitchen counter for the prep and treatment area; another on a narrow countertop across the rear wall of the surgery room. Both are served by an oxygen generator (which converts room air to oxygen)—the size of a medium suitcase—in a corner. Oxygen lines run along the top of the wall to the machines, while anesthetic is vented to the outside. With this system, no heavy oxygen tanks are needed. A small tank is kept for backup in the event of power outage and generator failure—enough to be able to finish a surgery. These are secured with bungee cords to wall hooks for travel.

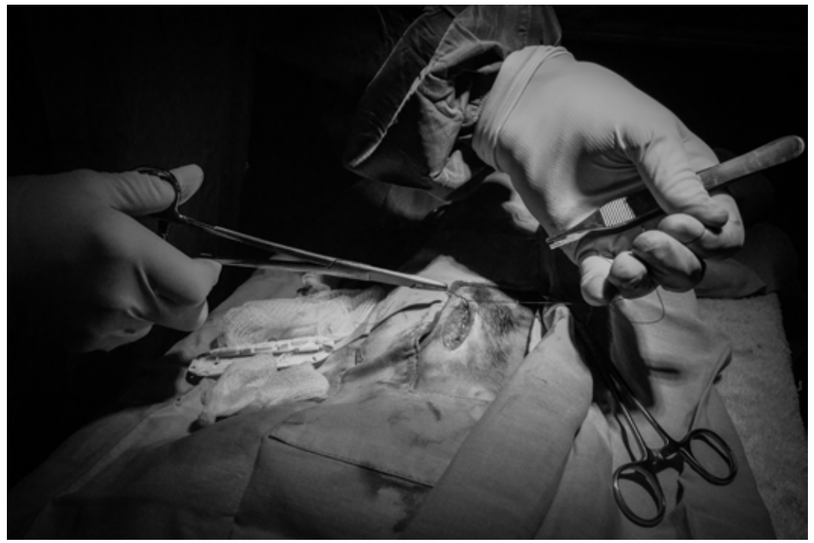
To spare us lifting large dogs, I wanted a hydraulic exam table for treatment and prep. Jerry made a box-like tabletop for a hydraulic lift from the industrial supply store. The surface ranges from 12 inches to 36 inches from the ground to accommodate all our needs, and the tabletop cost a few hundred dollars, instead of thousands. We wheel it up to the surgery room door to neatly slide patients onto the stainless steel surgery table.

The weight of the trailer needed to be considered, so technology such as the hand-held hematocrit and the iPhone-powered EKG were ordered. A used centrifuge and microscope were required for basic lab work (I send blood panels by ground from Smithers and Yukon to the Vancouver labs).

The final challenge was getting the computer system in place. Our local IT whiz, Chris Mosiman, secured everything we needed to a plywood board: my own hub, a server, the cordless debit machine, the Dymo label printer. If we are operating out of a school in winter, we just pick up the board like a serving platter and take it with inside with the laptop. The system allows us to access the software in the cloud and create invoices from anywhere (although I do keep a hardcopy billing book for emergencies). Multiple individuals (including my receptionist from her home) can access the system simultaneously.

The cupboards are more than adequate to store packs, surgery supplies, and anesthetic. Along the length of the slide, overhead cupboards store baskets of medication, instead of cups and plates—keeping the pharmacy organized and preventing shifting. For the lay staff, each

"IF TIMES ARE TOUGH, I CAN RUN THE WHOLE TRAILER SINGLE-HANDED."



Routine surgery in the master bedroom converted to surgery.

basket is labelled for ears, eyes, skin, and worm medicine. Depending on the time away, I carry more or less inventory. My autoclave ($2000 used) lives at home; I have taken it north on long trips, but now I have connections in medical clinics which allow me to re-autoclave surgical packs there (I travel with 20 to 30 packs). The minimal equipment that could not be found used was ordered through a buying group. The financial challenge of this start-up was solved by financing the first equipment and inventory order over six months. The end result was loans totaling $124,000 including insurance, the trailer, inspection fees, and all incidentals—a fraction of the cost of opening a storefront office. If times are tough, I can run the whole trailer single-handed.

While waiting for a business license, I continued to shop online for used equipment, and a major hiccup occurred. Although I had found an empty lot in town to lease, the town of Smithers, after hosting many mobile food trucks and vendors over the years, passed a bylaw barring mobile businesses. The trailer was almost ready for inspection, and I had to scramble for a location. Fortunately, a local golf course welcomed me to their parking lot, a lovely setting but on the outskirts of town. The less-than-ideal location kept me a little bit out of sight.

My goal was a 50-mile stretch east-west along Highway 16, working in communities for one scheduled day at a time a couple of times a week, with the main practice in Smithers. In addition to towns, there are at least seven First Nations villages in this stretch, with overpopulation and all the associated problems in their dogs. I did not approach them, but soon after opening, I was invited to do a spay-neuter clinic for the Burns Lake Band. There, the Lakes District Animal Friendship Society has been fundraising and working on dog control for years. Upon finding that the trailer and staff could handle 10 to 14 dog spays per day, we succeeded in providing this service to a few other First Nations communities. Financing is a challenge, as it is rare for the Village councils to be able to allot funds for such projects. However, the Kispiox Band did and reported a major improvement in the dog problem. Now, another village has committed to matching funds, as we seek $10,000 through GoFundMe, bottle drives, and a barbecue for their spay-neuter clinic. The energy for this came from the combined energy of a devoted village pet lover on the frontline to advocate and get people on board, together with a clinic volunteer to spearhead fundraising for the village's spay-neuter project which has its own account. More funds come via Paws for Hope, a charity in the Lower Mainland, which is more successful than us at fundraising as they are able to issue tax receipts. Thanks to Paws for Hope, I have been able to perform four spay-neuter clinics for the Nisga'a villages north of Terrace. Other grants have been more difficult to secure, and a professional grant writer is recommended.

As a start-up, revenue challenges forced us to travel Highway 37N to Stewart, Dease Lake, and all the way to Watson Lake in Yukon, twice annually for up to a week in each town. These trips have been a major source of revenue, while I try to build the home practice. Normally, I only average four days away from home per month.

I consider the trailer fully mobile, having done surgeries plugged into a school for power, a firehall, a shelter, a motel, even a private residence. When winter has made travel difficult, I've loaded the surgery packs, oxygen generator, and portable anesthetic machine into the pickup and set them up in a fire hall or school classroom, even to do surgery. High hopes of winterizing the trailer proved impractical, so I parked it in a heated shop in Hazelton where it became my winter office. To operate through winter, I reluctantly opened a small storefront office in downtown Smithers, sharing some equipment and duplicating some. Every new development has been serendipitous, like having a part-time veterinarian walk in my door, so the practice can serve Smithers as well as outlying communities.

Interestingly, although my initial focus was the financial aspect of private practice, the reward has been the outreach work, and the travelling staff of three to four love it. The way that everything has worked out has kept me highly motivated. A supportive friend made contact with an RCMP constable and known animal advocate in a village whom I had been unable to make contact with.

"THE ONLY REQUIREMENTS ARE A (MORE-THAN) SUPPORTIVE PARTNER, THE EMOTIONAL RESILIENCE TO WEATHER THE TRIALS OF ANY START-UP, AND THE WILLINGNESS TO BE A JACK-OF-ALL-TRADES, EVEN HAND-CRANKING THE SLIDE OUT OCCASIONALLY."

The constable introduced us to key village officials who gave us permission to do a spay-neuter clinic, but no financial backing. A B&B gave us a deal; a few private donors and Paws for Hope provided funding. The door was opened. The only sad footnote is that Emily McCreesh, the volunteer and friend who started the whole outreach ball rolling, has had to step back due to health challenges.

As a city-born WASP, I had no idea what I would encounter. Most of my practice is private appointments, and even the well-to-do in each town took a whole year to stop hugging me for travelling to them. The only requirements are a (more-than) supportive partner, the emotional resilience to weather the trials of any start-up, and the willingness to be a jack-of-all-trades, even hand-cranking the slide out occasionally. Plus the stamina to show up every day, with self-confidence as a veterinarian, to be able to handle everything that comes in the door. Stay calm and stay caffeinated. Mastering meditation has been key.

On these trips, it has been very gratifying to get to know the local people and their culture. Each spay clinic has become an event, with pet owners staying much of the day to chat. I have met fascinating and talented people, many of whom bring gifts and feed us. We hear that after pets are altered, people are walking their dogs because they are not fighting. The love and level of care they are striving for are impressive. They can take their females out of lockup on the porch once they are not at risk of getting pregnant. The culling of uncontrolled dogs by village government is no longer required.

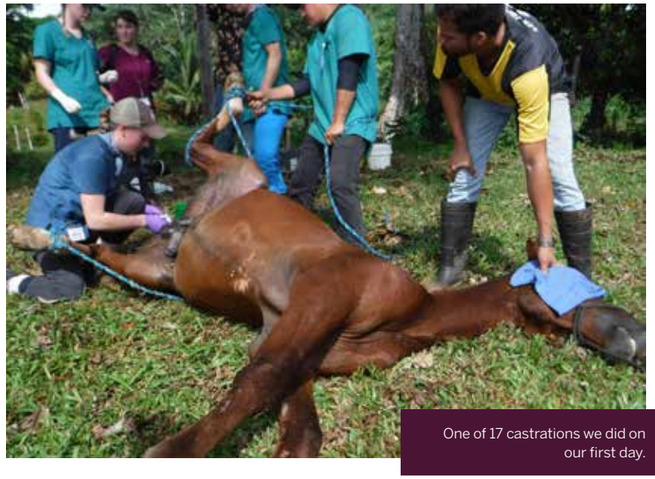
Previously, none of us realized how difficult it is to get veterinary care, even if one can access Spay Aid assistance. If you live five hours from a city with no car, you have to pay a neighbour for a ride to town, with a dog or cat. A mobile vet trailer is perfectly positioned to make a difference in a huge way. And there is no other circumstance that would permit us the time to converse with pet owners in depth and learn their story.

Years of studying alternatives have paved the way to understanding: we are all connected. Everyone loves their pets, and they are becoming more and more important to our physical and emotional health. Many individuals would give them basic care if only they had the knowledge and finances. What a great way to deliver both, and be an ambassador for veterinarians. The timing is right in the arena of social consciousness. WCV

THERE AND BACK AGAIN
AN EQUITARIAN ADVENTURE

BY JESSICA SEMPER, DVM

"COMPANION ANIMAL VETERINARY MEDICINE NEVER RESONATED WITH ME IN TERMS OF A CAREER PATH."



One of 17 castrations we did on our first day.

There are several things that have been constants in my life for as far back as I can remember: faith in Jesus Christ, desire to become a veterinarian, and—once a veterinarian—desire to care for animals that aren't just pets, but animals that truly work for a living. I have nothing against pets. I love pets and fully appreciate all that they add to our lives, but companion animal veterinary medicine never resonated with me in terms of a career path. In 2011, I and a group of my peers from university participated in a building trip in a rural community in Costa Rica. While there, I was struck by how incredibly hard the horses, donkeys, and mules worked, and how essential they were to their owners. I remember thinking, "When I am a veterinarian, I want to come back and serve these animals."

I'm incredibly blessed to be surrounded by people who know me and support my goals and interests. One is my mentor and personal veterinarian, Dr. Bettina Bobsein, who has been instrumental in my development as a young veterinarian. As I progressed through veterinary school, Dr. Bobsien was very aware of my desire to do veterinary work overseas and brought the work of the Equitarian Initiative to my attention. The Equitarian Initiative is a group of various veterinary professionals who have a heart to serve the working equid population around the world, but specifically in Central and South America. I was interested, but given where I was in my life (finishing eight years of post-secondary education, facing mounting student debt, and beginning a rigorous equine internship shortly after graduation), I wasn't entirely sure how the Equitarian Initiative would fit into my life picture.

"A GROUP OF VARIOUS VETERINARY PROFESSIONALS WHO HAVE A HEART TO SERVE THE WORKING EQUID POPULATION AROUND THE WORLD."

In October of 2017, I attended the Delta Equine Seminar in Delta, BC. At the seminar, Dr. David Paton spoke about his experience at the Equitarian Initiative workshop in Costa Rica. The purpose of the workshop is to bring seasoned equitarians together with veterinary professionals who have an interest in overseas equine veterinary work but have not had the opportunity to be involved in it. The goal is to help inspire more veterinary professionals to become active participants in equitarian work—non-profit veterinary care of working equids worldwide. Dr. Paton's incredible experiences in Costa Rica and his work organizing the Delta Equine Seminar (DES) made an ideal situation to suggest that the DES sponsor a fourth-year veterinary student or a new graduate to participate in the workshop which is held every January. When I heard about this opportunity, I was extremely excited—finally, a realistic way to live out my desire to use veterinary medicine to serve working animals overseas. I applied for the scholarship, and in November I received the news that I had been selected as the recipient.

"I WAS THE LONE CANADIAN REPRESENTATIVE."

Shortly after the New Year, I left the minus 30 degrees C and six inches of snow that was gracing Calgary for the plus 25 and extreme humidity of Costa Rica. I was excited, I was very nervous, and I was prepared to have myself stretched by the experiences that awaited. About five minutes after meeting some of my fellow workshop participants, all my nervousness evaporated, and all that was left was extreme excitement for what the week would bring. As a new grad just getting my feet wet in this amazing industry, it was so incredibly valuable to meet such a wide array of professionals from various countries, from all over the US, Haiti, and Honduras—I was the lone Canadian representative.

For the last three years, the workshop has been held in the Osa Peninsula, the southwestern-most part of Costa Rica. The relationship with the region has developed largely as the result of the Equitarian Initiative's relationship with one local family. Mariana Mobley is the woman responsible for organizing all of the logistics of having 25 foreign veterinarians, techs, and students serve the equids of the various local Osa communities. She and her family took incredible care of us, and her 11-year-old daughter, Carolina, became my best buddy, helper, and translator for the week. Carolina desperately wants to be a veterinarian one day, and for one week a year, she gets to help the team triage patients, perform dentals, trim feet, and do surgery. It's obvious that she loves every minute of it, in spite of the very long days of hard work. Her energy and enthusiasm were inspiring.

"THE MAJORITY OF OUR PATIENTS BORE THE EVIDENCE OF BEING BITTEN BY VAMPIRE BATS. MANY OF THE HORSES WERE SIGNIFICANTLY UNDERWEIGHT, RESULTING IN RUB SORES AND WOUNDS FROM ILL-FITTING TACK."

During our four days of working in four different communities, we saw and treated between 300 and 350 equids—mostly horses that work on local palm-oil farms or take tourists on rides. For every equid, we did a thorough physical exam, treated internal and external parasites, administered vaccines. Each one was then seen for dentistry, farriery, or surgery, depending on what was required. So many of the common medical issues there just aren't seen where I practice. The tick infestations were spectacular. The majority of our patients bore the evidence of being bitten by vampire bats. Many of the horses were significantly underweight, resulting in rub sores and wounds from ill-fitting tack. One of the most interesting problems I encountered while there was the difference between the values of geldings and stallions. A stallion will sell for $100; a gelding for $400. The increased value provides incentive for many owners to attempt castrating their stallions themselves, and with the lack of appropriate anesthetic and analgesic agents, you can imagine the kind of job that gets done. It was wonderful to know that while we were there, we were able to castrate over 30 stallions humanely and safely.

It's amazing how one week can have such a huge impact on my life. This trip confirmed for me, beyond a shadow of a doubt, that this is the kind of work I want to be involved in, as much as possible, throughout my veterinary career. It also confirmed how much I have to learn about the realities of practicing medicine in countries where the social and cultural differences can turn what seems like a simple situation into a great challenge, especially when not handled tactfully. I made contacts on this trip who will be go-to people for me throughout my career, and who will be friends to fall back on when challenges in practice get me down. If you are a veterinary student or new grad who has a heart for overseas equine work, I cannot speak highly enough of this experience. One thing is for certain: thanks to the generosity of the Delta Equine scholarship, I am officially an equitarian for life!

For more information about the Equitarian Initiative, current EI projects, and a daily blog from the 2018 EI workshop in Costa Rica, visit www.equitarianinitiative.org. WCV

PHOTOS COURTESY OF JESSICA SEMPER

Miniature donkey and miniature horse arrive at our clinic site in style.

LET'S TALK ABOUT CANNABIS

BY NICOLETTE JOOSTING, DVM

Animal Welfare Committee member Dr. Joosting attended the National Issues Forum at the CVMA Convention on behalf of the committee.

With the legalization of recreational cannabis use coming into effect on 17 October, 2018, and the growing acceptance of cannabis and cannabis-derived products in human therapeutics, veterinarians are expecting both increased interest in using cannabis and cannabinoid products in pets,[1] as well as increased toxicity cases, especially in dogs.[2] This article discusses what we know about cannabis, the legal aspects of cannabis use by veterinarians, and suggestions on how to have the cannabis conversation with veterinary clients.

Despite its current popular perception of benignity, use of cannabis and cannabinoid derivatives in humans[3] and animals[4] may have serious consequences. To be the best source of evidence-based information, veterinarians are making an effort to stay up-to-date with their knowledge of cannabis, the purported uses, products, and rapidly emerging science.

Mammals have a complex modulatory system known as the Endocannabinoid System (ECS). Since c.1990, scientists have identified many of the molecules of the system and expect to find more. This complex system, interacting with other regulatory systems, is critical in many physiological processes such as learning and memory, brain development, and in shaping neuronal connectivity, appetite control, pain sensation, motor coordination, lipogenesis, modulation of immune response, and the regulation of bone mass. Its existence explains how cannabis affects mammals.[5] With further research, we may find species differences in the receptors or receptor affinities, as we have found in other physiological systems.

Endogenous cannabinoids bind to specific cannabinoid receptors on cell membranes and intracellular organelles. This will trigger a reaction or cascade of reactions within the cell membrane or cell. Endogenous cannabinoids can also interact with other systems receptors, including the opioid system, the serotonin receptor 5-HT, capsaicin or vanilloid receptor TRPV, and adenosine. Enzymes will break down these cannabinoids, so that the reactions are controlled by feedback loops. Endogenous fatty acid amide analogues of the cannabinoids, such as PEA, may interact with cannabinoid receptors and competitively inhibit cannabinoid degradation by the enzymes. Individual responses to exogenous cannabinoids may be because of differences in receptor functioning and/or any of the enzymes and molecules involved in the system. It helps to think of the cannabinoid effect as being mainly nervous system (CB1, the "THC receptor") and mainly immune/everything else (CB2), although this is an oversimplification of the interactive effects.

The plant *Cannabis spp*., found worldwide, has many different subspecies or strains, each with different properties of phytocannabinoids, terpenes, flavonoids and other compounds. Enthusiasts think that the combination of these compounds have an entourage effect when using whole plant products, and the effect will differ according to the plant subspecies or strain.[6] Non-psychogenic strains are lower in THC, and are used in the food and fibre industry. Psychogenic strains, with varying THC levels, are used in medical therapy. Of the hundreds of compounds found in *Cannabis spp*. so far, over 100 are phytocannabinoids. The best known are THC, CBD, CBN, and CBG. These are being used to produce cannabis-derived products for drug approval and, along with other phytocannabinoids, are being studied for their potential use in human medicine, for a multitude of unrelated conditions.

Synthetic cannabinoids were initially developed for research purposes—high efficacy full CB1 agonists such as HU-210, a synthetic analogue of the partial CB1 agonist delta-9-THC, create more readily observable results.[7] The "zombie drug" Spice is a synthetic cannabinoid. These drugs cause severe intoxication in users.

Marinol (Dronabinol), Cesamet (Nabilone), European Sativex (Nabiximols), are cannabis-derived products approved for use in humans for intractable nausea and vomiting and in chronic pain. Cesamet and nabilone generics are available in Canada.[8]

There are no Health Canada–approved CBD products for animals.

"THERE ARE NO HEALTH CANADA–APPROVED CBD PRODUCTS FOR ANIMALS."

There are currently 157 licenced natural products in Canada that contain Cannabis sp. or a derivative (mostly hemp seed).[9] These include Veterinary Health Products containing hemp seed or hemp seed oil.

There is strong evidence, in humans, for the use of cannabis for nausea and vomiting associated with cancer chemotherapy, anorexia and cachexia in HIV/AIDS, chronic, especially neuropathic pain, spasticity in multiple sclerosis and spinal cord injury; while only perceived or anecdotal efficacy for many other medical conditions. Their use is promoted by the companies, cannabis enthusiasts, and some physicians and veterinarians. Food animal producers are also interested in the use of hemp seeds and other cannabis products.

[1] Landa, Leos & Sulcova, Alexandra & Gbelec, P. (2016). The use of cannabinoids in animals and therapeutic implications for veterinary medicine: A review. Veterinární Medicína. 61. 111-122. 10.17221/8762-VETMED.

[2] Meola, S. D., Tearney, C. C., Haas, S. A., Hackett, T. B. and Mazzaferro, E. M. (2012), Evaluation of trends in marijuana toxicosis in dogs living in a state with legalized medical marijuana: 125 dogs (2005–2010). Journal of Veterinary Emergency and Critical Care, 22: 690-696. doi:10.1111/j.1476-4431.2012.00818.x.

[3] https://www.canada.ca/en/services/health/campaigns/cannabis/health-effects.html.

[4] Tai, S., & Fantegrossi, W. E. (2017). Pharmacological and Toxicological Effects of Synthetic Cannabinoids and Their Metabolites. Current Topics in Behavioral Neurosciences, 32, 249–262. http://doi.org/10.1007/7854_2016_60.

[5] Pál Pacher, Sándor Bátkai and George Kunos, (2006).The Endocannabinoid System as an Emerging Target of Pharmacotherapy. Pharmacological Reviews September, 58 (3) 389-462; DOI: https://doi.org/10.1124/pr.58.3.2.

[6] https://www.scientificamerican.com/article/some-of-the-parts-is-marijuana-rsquo-s-ldquo-entourage-effect-rdquo-scientifically-valid/

[7] https://www.unodc.org/LSS/SubstanceGroup/Details/ae45ce06-6d33-4f5f-916a-e873f07bde02.

[8] https://hpr-rps.hres.ca/.

[9] https://health-products.canada.ca/lnhpd-bdpsnh/index-eng.jsp.

"THIS TRADITIONAL PRACTICE MAY CAUSE MORE HARM THAN GOOD, GIVEN OUR UNDERSTANDING TODAY OF COGNITIVE PROCESSES AND BIASES."

While our knowledge of cannabis is rapidly advancing, we have significant gaps in our veterinary knowledge. We do not know, in any of our patient species, mechanisms of actions, pharmacokinetics, or pharmacodynamics. Practitioners are guessing dosages based on the human dose range for approved products or anecdotal experience, with potentially species-specific toxicity. Neither do we know if we are prescribing cannabis for the right diseases. There are a handful of studies in progress, and with increased interest, we hope to see many more that are applicable to our patients.

Using whole or partial plants, currently considered the better practice among some practitioners, provides no reliable efficacy or dosing because of variabilities in strains, growing conditions, and suppliers, with varied and unpredictable side effects. For any cannabis product, a physician, pharmacist, or veterinarian will want a Certificate of Analysis of THC, CBD, and other compounds, and be assured of consistency in the formulation.

Historically, veterinarians have prescribed off-label or without sufficient evidence whenever the veterinarian has felt this may benefit their patient. This traditional practice may cause more harm than good, given our understanding today of cognitive processes and biases in medical decision-making, drug benefit reporting, and evaluation, along with many examples of the harm done to patients when relying on anecdotes, eminence-based recommendations, and pseudo-science. We are supposed to be a science-based profession and should take care to ensure that any recommendations we make are grounded in physiological and pharmacological understanding with the science that backs up or refutes any theoretical use, and not on marketing and popular trends.[10]

Consideration of the legal aspects of cannabis prescribing by veterinarians is of equal importance to the medicine. Currently, all parts of the *Cannabis spp*. plant and substances derived from it are controlled as a Schedule II substance, unless exempt under the Industrial Hemp Regulations (IHR), Access to Cannabis for Medical Purposes Regulations (ACMPR), or through a research exemption (Controlled Drug and Substances Act, CDSA).[11] Applicable regulations made under this Act include the ACMPR[12] and the IHR.[13] Veterinarians need to understand that the ACMPR applies to "persons," not "patients," and that veterinarians and veterinary patients are not included in these regulations.[14] The IHR defines "hemp" as a *Cannabis spp*. cultivar that contains less than 0.3% THC in leaves and flowers and allows licenced "hemp" producers to grow "hemp," but only the stalks and seeds may be used in products that must be under 10ppm THC. CBD from "hemp" remains under Schedule II of the CDSA.

[10] http://www.ebvmlearning.org/ and https://knowledge.rcvs.org.uk/evidence-based-veterinary-medicine/.

[11] http://laws-lois.justice.gc.ca/eng/acts/C-38.8/.

[12] http://laws-lois.justice.gc.ca/eng/regulations/SOR-2016-230/index.html.

[13] http://laws-lois.justice.gc.ca/eng/regulations/SOR-98-156/index.html.

[14] http://cvbc.ca/Files/Bylaws-Policies/MedicalMarijuana/Guidelines.pdf.

[15] Dr. Sarah Silcox, Canadian Association of Veterinary Cannabinoid Medicine.

SUGGESTIONS FOR DISCUSSING CANNABIS WITH YOUR CLIENTS.[15]

- Let your clients initiate the discussion and conduct it openly and thoughtfully.
- Do not let your personal views of cannabis affect your professional judgment.
- Include reported cannabis use in the medical record, including evaluations for potential drug interactions and side effects.
- Document any discussions in the medical records.
- Advise clients of the legal status for animals and veterinary prescribing.
- Inform clients of the current evidence base—what we know, what we don't know—and provide information on toxicity and side effects as well as potential therapeutic benefits.
- Avoid making non-evidence-based claims about the effects of cannabis.
- Take the time to familiarize yourself with the products that are available to your clients, so that you can discuss strategies for product selection and safe use.
- Do not give specific dosing recommendations that are not evidence-based.
- An individual should ensure they are accessing products through a legal source.
- Before recommending a website, evaluate the information it contains for yourself.

"RIGHT NOW, VETERINARIANS WITHOUT A RESEARCH EXEMPTION HAVE NO LEGAL PATHWAY TO PRESCRIBE CANNABIS OR CANNABIS-DERIVED PRODUCTS."

CANNABIS TOXICITY

- Mainly dogs, associated mostly with edibles and plants, but can see in cats, small pets, equines, and cattle
- Dogs may show one or more of these clinical signs, of varying severity

CANNABIS CLASSIC	CANNABIS NON-CLASSIC	CBD
CNS signs	Hyperexcitability	Same set of symptoms but seizures more common
Mydriasis /miosis	Vocalization	
Bradycardia	Agitation	
Hypothermia	Tachycardia	
Urinary incontinence	Nystagmus	
Hyperesthesia	Hyperthermia	
Ataxia	Seizures	
Disorientation	Stupor	
Tremors, head bobbing	Coma	
Coma		
NON-LIFE THREATENING	CAN RESULT IN DEATH	

OIL EXTRACTIONS OF THC, SUCH AS THE BUTTERS, AS WELL AS CHOCOLATE-CONTAINING EDIBLES, MAY CAUSE MORE SEVERE TOXICITY AND DEATH.

DIAGNOSIS

- History, clinical signs
- OTC urine test kits (high false negative, repeat six to eight hours after exposure if you must, false positive ibuprofen)
- Blood or urine testing by external laboratory (if you must)

TREATMENT

- According to severity of clinical signs, treat as outpatient or hospitalize, and scale up symptomatic treatment if needed with progression of clinical signs
- GI decontamination
  - Induce emesis—not if after one hour post-ingestion, sedated, or risky
  - Activated charcoal
- SQ or IV fluids
- Vitals monitoring, including blood pressure
- Manage CNS effects—control seizures
- Manage severe cardiovascular derangements
- IV lipid emulsions in severe cases

PROGNOSIS

Signs last 24-72+hrs. Death is rare.

Through the Veterinary Drugs Directorate, Health Canada evaluates and monitors the safety, quality, and effectiveness; sets standards; and promotes the prudent use of veterinary drugs administered to food-producing and companion animals.[16] According to the *Food and Drugs Act*, "a drug includes any substance or mixture of substances manufactured, sold or represented for use in:

1. the diagnosis, treatment, mitigation or prevention of a disease, disorder, abnormal physical state, or its symptoms, in human beings or animals;
2. restoring, correcting or modifying organic functions in human beings or animals; or
3. disinfection in premises in which food is manufactured, prepared or kept."

Natural health products, such as vitamin and mineral supplements and herbal products for which therapeutic claims are made, are also considered drugs at the level of the *Food and Drugs Act*; however, these products are regulated as natural health products under the Natural Health Products Regulations and not as drugs under the Food and Drug Regulations.[17]

Right now, veterinarians without a research exemption have no legal pathway to prescribe cannabis or cannabis-derived products. Until October 17, 2018, companies and individuals selling cannabis and CBD products are doing so illegally. While it is an offence (for now) to divert your medical cannabis to another person, nothing prohibits people from self-treating their pets, so long as it is not neglectful or harmful.

The Federal Bill C-45, the *Cannabis Act*, will remove cannabis from the CDSA Schedule 11 and legalize access to recreational cannabis in Canada when it comes into force on October 17, 2018. The bill will also control and regulate how cannabis is grown, distributed and sold.[18] Each province sets its own laws on minimum legal age, distribution, sale and penalties. In BC, we have Bill 30, the *Cannabis Control and Licensing Act*, and the *Cannabis Distribution Act*.[19] Neither Act mentions veterinarians or animal use. The CVMA is lobbying for the inclusion of veterinarians and veterinary patients into the Cannabis Act, labelling for the safety and prevention of toxicity in animals, and for inclusion of CBD products to the veterinary drug list.[20] The IHR will be amended to permit processing for CBD from "hemp."

It is not yet clear (July 7, 2018) if Health Canada intends whether phytocannabinoids will become available as Natural Health Products or as drugs. There are no Veterinary Health Drugs with cannabis or cannabis-derived ingredients expected in the near future. Veterinarians would be recommending off-label use of available products approved for human use. WCV

[16] https://www.canada.ca/en/health-canada/services/drugs-health-products/veterinary-drugs.html.
[17] https://www.canada.ca/en/health-canada/services/drugs-health-products/drug-products/fact-sheets/drugs-reviewed-canada.html.
[18] https://www.sencanada.ca/en/sencaplus/news/cannabis-act/.
[19] https://www2.gov.bc.ca/gov/content/safety/public-safety/cannabis
[20] https://www.canadianveterinarians.net/documents/cvma-letter-to-hc-proposed-approach-to-regulation-of-cannabis.

INITIALS	STANDS FOR	DEFINITIONS
ECS	endocannabinoid system	
AEA	endogenous cannabinoid	N-arachidonoylethanolamide aka anandamide
2-AG	endogenous cannabinoid	2-arachidonoylglycerol
PEA	endogenous AEA analogue	Palmitoylethanolamide, pain and inflammation modulation
CB1	Cannabinoid receptor	Mainly nervous system
CB2	Cannabinoid receptor	Cells of immune system, other body systems
GPR55	G-protein receptor	Binds cannabinoids
GPR119	G-protein receptor	Binds cannabinoids
GPR18	G-protein receptor	Binds cannabinoids
FAAH	Cannabinoid enzyme	fatty acid amide hydrolase
MAGL	Cannabinoid enzyme	monoacylglycerol lipase
THC	Phytocannabinoid	Tetrahydrocannabinol
Δ-9-THC	Phytocannabinoid	Considered the primary active ingredient in Cannabis spp. responsible for psychoactive properties
CBD	Phytocannabinoid	D8-tetrahydrocannabinol, low affinity for CB1 receptors, less psychoactive effects
CBN	Phytocannabinoid	Cannabinol, oxidative degradation product of THC
CBG	Phytocannabinoid	Cannabigerol, non-psychoactive precursor to THC and CBD
HU-210	Synthetic cannabinoid	synthetic analogue of the partial CB1 agonist Δ-9-THC
Entourage effect		A term introduced in 1998 in cannabis research. The interaction of different compounds working together, so that the physiological effect is greater than the sum of the effects of the single compounds.

College of Veterinarians of British Columbia

Reminders from the CVBC for Registrants regarding cannabis and its derivatives:

1. Veterinarians cannot prescribe cannabis or cannabis-products to their patients.
2. Currently, there are no Health Canada-approved products on the market; until such a time as there are Health Canada-approved products available, there is no legal pathway for people to purchase them; therefore, veterinarians should not be recommending/advising their use as recommending the use of illegal products would constitute *professional misconduct.*
   a. It is important to inform clients that are asking about cannabis products about the risks of using non-approved products
      i. Lack of regulatory oversight means a lack of certainty of safety (safe levels of THC? Any contaminants?), lack of assurance of efficacy (are there therapeutic levels of CBD?), lack of quality control (what other ingredients are being added?) and consistency of the product
3. The first wave of Health Canada-approved products will be approved *for human use*; we can expect a significant delay in the development of veterinary-approved products. Until there are veterinary-approved products, any use of HC-approved cannabis products will be off-label and clients should be made aware of what this means:
   a. It is important to discuss the lack of scientific knowledge surrounding the pharmacokinetics, physiologic effects and interactions with other drugs, the potential adverse effects, safe dosages, effective dosages and dose frequencies, species differences, etc.
   b. Experience has shown us that dogs are much more sensitive to the toxic effects of THC than are people. This illustrates that we cannot rely on extrapolation from human experience and studies when deciding appropriate doses or even uses.
4. If a client introduces the topic:
   a. Discuss the risks and signs of THC toxicity and remind clients that the potential for toxicity exists, not just with deliberate dosing of their pets with cannabis or its derivatives, but also from accidental ingestion of materials intended for human consumption. Remind them to keep any personal cannabis products securely away from their pets, particularly the more tempting baked goods. THC is highly lipophilic, so products that are high in fat will lead to greater absorption upon ingestion – the greatest risk appears to be from THC-butter (there have been reported cases of canine fatalities in the US after ingestion of products made with THC butter or oil)
   b. If clients indicate that they are already using cannabis products for their pet or clearly intend to do so, make note of it in the medical record, as you would the known use of any supplement or OTC medication – it may one day be relevant to deciphering clinical findings.
5. Document any conversations about cannabis and its derivatives.

\- *Dr. Stacey Thomas, Deputy Registrar*

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WCV BUSINESS DIRECTORY

SEPTEMBER

6 – 9 **2018 SVMA Conference AGM & Trade Expo**
Saskatoon, SK
www.svma.sk.ca/index.php?p=2018-conference-homepage

25 – 28 **43rd World Small Animal Veterinary Congress and 9th FASAVA Congress**
Singapore
https://wsava2018.com/

30 **VPOCUS (FAST) Ultrasound courses**
Victoria, BC
www.scilvet.ca/scil-vet-academy/seminar-schedule/event/1123/

OCTOBER

4 – 7 **2018 AHVMA Annual Conference**
Kissimmee, FL
www.ahvma.org/conference-schedule/

13 – 16 **2018 CanWest Veterinary Conference**
Banff, AB
https://abvma.in1touch.org/viewEvent.html?no_header=true&productId=6772

22 – 23 **2018 Delta Equine Seminar**
Delta, BC
Equine Dentistry Beyond Floating Teeth with Dr. Jack Easley; Equine Ophthalmology on the Farm *and* Practice Management for the Mobile Practitioner with Dr. Ann Dwyer. The seminar will be held at the Coast Tsawwassen Inn, Delta, BC. Lunch each day and a seafood buffet dinner on Monday October 22 are included. Early registration closes October 1, 2018.
www.deltaequineseminar.com

27 – 28 **Basic Ultrasound**
Victoria, BC
www.scilvet.ca/scil-vet-academy/seminar-schedule/event/1118/

NOVEMBER

2 – 4 **2018 CVMA-SBCV Chapter Fall Conference and Trade Show**
Vancouver BC
Our keynote speaker, Dr. Marty Becker, shows you how to get started with Fear Free™ veterinary visits. Dr. Serge Chalhoub will be talking about chronic kidney disease, sponsored by Idexx Laboratories; Dr. Nicole Fernandez is covering sample collection and submission, sponsored by WCVM; Dr. William Rausch will be talking about diagnosis and treatment of canine and feline arrhythmias, sponsored by Vet Strategy; and Dr. Jacqueline Pearce is covering the basics of performing an efficient and complete ophthalmic exam, sponsored by VCA Canada. The Trade Show Reception this year is sponsored by NVA. Tickets are now on sale. See ticket website for special pricing opportunities.
www.eventbrite.ca/e/cvma-sbcv-chapter-fall-conference-and-trade-show-in-november-2018-tickets-46623452000

17 – 18 **Intermediate Ultrasound**
Victoria, BC
www.scilvet.ca/scil-vet-academy/seminar-schedule/event/1135/

24 **AFAST/TFAST Veterinary Ultrasound**
Kamloops, BC
www.mieducation.ca/event/afast-tfast-veterinary-ultrasound/

AS REPORTED IN THE MEDIA

CANNABIS STATUS 'CONSTANTLY, RAPIDLY CHANGING'
http://news.vin.com/vinnews.aspx?articleId=49316

MUFFIN'S HALO HELPS BLIND DOGS NAVIGATE THEIR WORLD
http://www.vancourier.com/living/muffin-s-halo-helps-blind-dogs-navigate-their-world-1.23366270

POT FOR PETS? WITH LEGALIZATION PENDING, CANADIAN VETERINARIANS SAY IT'S TIME
https://globalnews.ca/news/4318978/pot-for-pets/

RESEARCHERS INVESTIGATE TWO ALL-TOO-COMMON CONDITIONS IN CATS: OBESITY AND DIABETES
https://www.ucalgary.ca/utoday/issue/2018-05-01/researchers-investigate-two-all-too-common-conditions-cats-obesity-and-diabetes

B.C. CHICKEN-CATCHING COMPANY DENIES NEGLECT, CRUELTY ACCUSATIONS
http://www.chroniclejournal.com/news/national/b-c-chicken-catching-company-denies-neglect-cruelty-accusations/article_c9e4fdd8-84b6-50da-b0a9-a1bfbd7c9929.html

CANADA'S CRUELTY-FREE COSMETICS ACT CLEARS SENATE
https://globenewswire.com/news-release/2018/06/20/1526892/0/en/Canada-s-Cruelty-Free-Cosmetics-Act-clears-Senate.html

YUKON WATCHES FOR DISEASE-CAUSING BACTERIA IN CARIBOU, WILD SHEEP
https://www.cbc.ca/news/canada/north/yukon-movi-bacteria-sheep-1.4711754

VET WARNS PET OWNERS, ESPECIALLY DOG OWNERS, ABOUT MARIJUANA POISONING
https://www.ctvnews.ca/health/vet-warns-pet-owners-especially-dog-owners-about-marijuana-poisoning-1.3974006

VETERINARIANS BACK KEY RECOMMENDATIONS ON COMBATING ANTIMICROBIAL RESISTANCE
https://www.manitobacooperator.ca/news-opinion/news/veterinarians-back-key-recommendations-on-combating-antimicrobial-resistance/

STILL NO CHARGES A YEAR LATER IN CHILLIWACK CHICKEN FARM ABUSE CASE
http://vancouversun.com/news/local-news/still-no-charges-a-year-later-in-chilliwack-chicken-farm-abuse-case

INDUSTRY EXPERTS OFFER TIPS TO HELP PORK PRODUCERS MAKE THE TRANSITION
http://www.farms.com/ag-industry-news/preparing-for-veterinary-drug-use-changes-571.aspx

CANADIAN SCIENTISTS TRACK LYME DISEASE THREAT
http://www.cbc.ca/news/health/lyme-disease-1.4669910

NEW RABIES TEST COULD SAVE LIVES, MAYBE EVEN MINUS THE SHOTS
https://consumer.healthday.com/public-health-information-30/centers-for-disease-control-news-120/new-rabies-test-could-save-lives-maybe-even-minus-the-shots-733980.html

INTERNAL MEDICINE

Dr. Jennifer Clooten
DVM, DVSc, DACVIM

VCA Vancouver Animal Emergency & Referral Centre

Dr. Jennifer Clooten received her DVM from the Western College of Veterinary Medicine in 1999. Upon graduation, she completed an internship in small animal medicine and surgery followed by an internal medicine residency at the Ontario Veterinary College. During that time, she also obtained a Doctor of Veterinary Science degree. Dr. Clooten became ACVIM board certified in internal medicine in 2003 and worked at several large multi-specialty referral hospitals in Florida, California, and Michigan. Her areas of interest include respiratory medicine, minimally invasive procedures, autoimmune disease, and gastrointestinal disease.

Learn how our Internal Medicine team including Dr. Jennifer Clooten and Dr. Susan Ford can support you, your patients and your hospital. Submit a referral online or call us today to book an appointment with one of our specialists.

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