



WEST COAST VETERINARIAN

SEPTEMBER 2019 | N° 36

IS THERE A VETERINARIAN SHORTAGE IN BC?



THE ART OF DEVELOPING A CLINICAL MIND
CANINE LEPTOSPIROSIS SURVEILLANCE IN BC
DIAGNOSING LAMENESS IN DOGS 6 TO 12 MONTHS OLD
CANINE CUTANEOUS MAST CELL NEOPLASIA
FORENSIC INVESTIGATIONS
HUMANE CANADA NATIONAL ANIMAL WELFARE CONFERENCE
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COREY VAN'T HAAFF
EDITOR

» TO THE EDITOR

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

» ON THE COVER

Photo by [bgwalker/istock.com](https://www.istock.com/photo/bgwalker)

My association with BC's veterinarians goes way back. I was appointed on February 5, 1998, by the provincial government as the lay representative to Council of the then BCVMA (the first one ever) and except for a one-year stint, my work has always intermingled with veterinarians' work. The current, growing shortage of veterinarians, coupled with the increased demands on a veterinarian's time and abilities, touches me deeply, both as a concerned pet owner who relies on my own veterinary clinic's availability and as someone who works in the industry and sees how the labour market challenges personally affect veterinarians and their staffs.

The Chapter is not sitting idly by. Read any of our communications since January and you'll learn about our Sector Labour Market Partnership project, which is completed. You can read more in Dr. Veronica Gventsadze's excellent summary in this issue. This project allowed us to do the research necessary to support allegations of shortages.

Work doesn't stop there. We are in the process of developing a new Sector Labour Market Partnership project request for funding to allow us to further explore how we might address some of these shortages. As always, we will keep you informed as we progress.

We are also working on our resiliency project. We know and understand what many of you are going through, and we know we have others among us who have gone through the same thing, whether a nasty client situation, a workplace challenge, a colleague who is suffering, or needing a gentle listener if you are involved with a regulatory investigation. It matters that you want and need help, and we are developing a protocol to help you by matching you with a BC veterinarian who has emerged from a similar incident and who can listen and share their own experiences. We know for sure that whatever you are going through, someone else has gone through it too.

We are in our "selling season" for our 2019 Fall Conference and Trade Show in Vancouver on November 2 and 3, 2019. Emergency medicine and critical care, cannabis, dermatology, and the CVBC highly recommended session on antimicrobial stewardship are on the agenda. Tickets are available on our website at canadianveterinarians.net/sbcv under "Events and CE." Remember, we discount your registration fee by 50 per cent if you are a Chapter member.

And finally, it warmed my heart to read Reina Fennell's piece on using fine art to assist in the training of new veterinarians to develop their observational skills. I live with art, at home and in my Chapter office, where each day, I find something new in my paintings and pottery. I love the concept of looking deeper and with more patience to find what is right in front of us. It is probably good advice for all of our new projects; the answers might be closer than we ever expected. **WCV**

Email: wceditor@gmail.com



We are always keen to get to know our readers, and here is one of our youngest. This is Emma Haight, who is 16 months old in this photo. Her mom, Dr. Jessica Robertson, is the Chapter's vice-president.



**FIND A
LOCUM**

We know how hard it can be to find a locum. To make it easier, we are publishing a list of BC locum veterinarians here in *West Coast Veterinarian*. Inclusion in this list is a no-cost enhancement of the paid classified ads for locums available.

Please contact any of the locum veterinarians listed below, or search the classified ads for the most up-to-date list of available locums here: www.canadianveterinarians.net/sbcv/classified-ads.aspx.

This is one more way we are helping our members.

DR. MICHAEL ORSER
604.649.7730
alouette.pets@shaw.ca

Veterinarian and former hospital owner available for work in the lower mainland; will consider travel.

DR. JODIE WILSON
604.240.3580
jodiewilsonsvm@gmail.com

Fear Free-certified small animal veterinarian, based in Vancouver and open to travel.



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SARA DUBOIS, PhD, RPBio, is chief scientific officer for the BCSPCA, where she directs province-wide welfare science operations, policy, and advocacy projects. She leads teams of experts in farm, wild, and companion animal welfare and policy to provide evidence-based solutions to help improve the lives of all animals in BC. She holds a BSc from the University of Victoria and an MSc and PhD from the University of British Columbia. Dr. Dubois is also a Registered Professional Biologist and the president of the board of the Animals in Science Policy Institute. In her role as adjunct professor in the UBC Animal Welfare Program, she offers an applied biology practicum course for undergraduate and graduate students to get hands-on experience with animals.



CECILY GRANT, DVM, graduated from WCV in 1998. She works as a locum veterinarian for small animals on Vancouver Island, with a special interest in honeybees and rare poultry breeds. She served on the CVBC Animal Welfare Committee for more than 10 years and is currently on the SBCV Animal Welfare Committee. Between locums, she enjoys sailing and bagpiping.



VERONICA GVENTSADZE, MA, PhD, DVM, graduated from Ontario Veterinary College in 2008. She moved to Squamish, BC, where she worked for two years as an associate veterinarian in a small animal practice. She currently travels across BC as a locum and enjoys learning something new from each practice.



CHAMISA HERRERA, DVM, Dipl. ACVIM, is originally from rural New Mexico but fell in love with the Pacific Northwest when she moved to Washington State as a child. Before joining Boundary Bay Veterinary Specialty Hospital in 2018, Dr. Herrera worked for a successful referral hospital in



GEOFF HUTCHINSON, MS, DVM, Dipl. ACVS, is the staff surgeon and a founding partner of Boundary Bay Veterinary Specialty Hospital. From southern Alberta, he received specialized surgical training and board certification in the USA, and started surgery departments in Arizona and New York before returning to western Canada in 2009 to open Boundary Bay Veterinary Specialty Hospital. Dr. Hutchinson's interests include joint disorders and treatment, minimally invasive techniques, and fracture repair. In addition to TTA and TPLO, he brings several cutting-edge treatments to his practice including arthroscopy, laparoscopy, Kyon Zurich Cementless total hip replacement, PAUL, PGR, and fracture repair using the ALPS titanium locking plate system.



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



HOLLY TILLOTSON, DVM, graduated from WCV in 1992. She worked in the lower mainland until moving to Vancouver Island where she had a small ruminant practice and worked as a locum. Currently, she is a partner in a small animal clinic in Port Alberni. Dr. Tillotson is working on a certificate in veterinary forensic science.

Seattle, Washington. She owns a small hobby farm in Bellingham with her wife and two young daughters. On the weekends they can be found tending to the farm animals or hiking, kayaking, or camping in the beautiful Pacific Northwest. Dr. Herrera has a dog, two cats, and a menagerie of farm animals.

WCV

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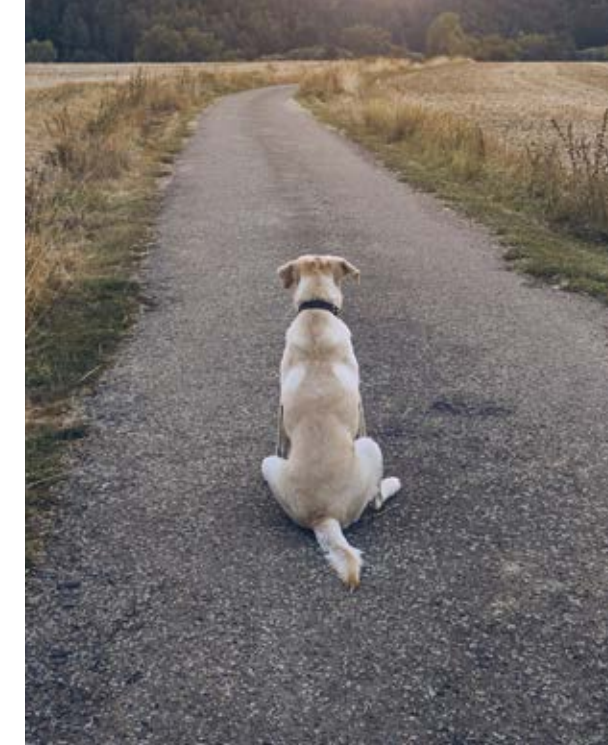
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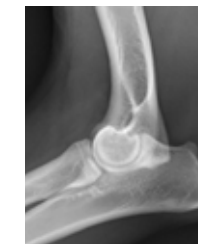
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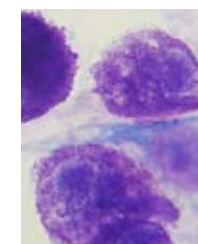
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I read Dr. Hilger's article in the March issue of WCV and empathized quite deeply with her concerns. After 40 years of sharing after-hours services, I am familiar with the ups and downs of being on call. In the rural area where I worked, it was considered part of the job, and I was clearly aware of this when I joined our practice. I felt a personal obligation to do my best for our clients and their animals. Certainly there were many times I was grumpy about getting a call, but by the time I arrived at our clinic, the animal in distress was my focus and my attitude changed immediately.

The situation that Dr. Hilger described in the Comox Valley is repeated throughout the province, including the area where I work. Clients are being asked to travel with a potentially critical case to reach assistance. I find this difficult to think about and wish we could provide better service to our animal members of the family. I receive phone calls from clients asking why they have to drive so far when their animal is suffering—do we not care anymore?

While thinking about ways to try to alleviate this problem, I am also concerned about the amount of burnout and compassion fatigue in our profession. It is not surprising that people are refusing to help after hours: we cannot help anyone else if we do not look after our own mental and physical health. Thus I understand why our colleagues are deciding to say no to on-call work.

Another factor is one that the SBCV has been working on diligently this year, and that is the shortage of veterinarians. As our day-to-day workload increases because we do not have enough veterinarians to share the work, it is no wonder that we are simply too tired to think about taking after-hours emergency work.

We also have to consider the impact on our families. In my case, my wife knew quite well what she was in for when she married a veterinarian. Some nights I was not available, and going out for an evening concert or dinner had to work around my call schedule, which for many years averaged roughly every second night. It was frustrating for my wife, but as a devout animal lover, she understood that when I got called away it was to help an animal and their owner through an emergency. It is very difficult for some families to accept these disruptions in their lives, and that adds

to the stress, burnout, and fatigue veterinarians feel.

I believe this issue should be reassessed. We need to communicate with our colleagues to see if everyone can share one night every week or two. Maybe veterinarians as a profession can investigate whether it's possible to provide a telemedicine help line to help pet owners decide whether they need to drive the hour or longer to an emergency hospital. In my experience, some people just need reassurance that their beloved pet can wait until the morning to be examined. If the pet is truly in trouble, sending the owner to the emergency hospital and then calling ahead is helpful to the owners.

We need to look at our priorities and reasons for practising as veterinarians. The opportunities to help, to share the love our clients have for their animals, and to build wonderful relationships with clients and patients are extremely rewarding. My job is a part of my life that I share when needed, and I feel privileged to be a veterinarian. [WCV](#)



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

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

It's time to talk about mental health in the veterinary profession. One in five Canadian veterinarians and technologists reported suicidal ideation, burnout, and depression, but most won't reach out for help due to stigma. Merck Animal Health and the CVMA are starting open and honest mental health conversations, helping break down stigma, and creating a community for veterinarians to help one another. The conversation starts with It's Time to Talk about Mental Health in Vet Med Awareness Week September 9–15, 2019. On World Suicide Prevention Day, September 10, a live webinar will be available for all veterinary health care teams. Visit canadianveterinarians.net to learn more and download resources.

The CVMA collaborated with the CFIA and other stakeholders to share information to prevent African Swine Fever from infecting the Canadian pig herd. Find more resources under canadianveterinarians.net/practice-economics/asf.

The CVMA updated two position statements: "Vaccination of Animals" and "Electroejaculation of Ruminants." Read them under the "Policy & Advocacy" section of our website.

After years of lobbying for amendments to the Criminal Code aimed at strengthening the law with respect to animal cruelty, the CVMA is pleased that Bill C-84, An Act to Amend the Criminal Code (Bestiality and Animal Fighting), has passed through Parliament and into law.

Time to plan your Animal Health Week 2019, held October 6–12. Animal Health Week is an annual national public awareness campaign organized by the CVMA and hosted by veterinarians across Canada. Each year, through this event, the veterinary community draws attention to an important health-related message. This year's theme is "Optimal Nutrition for Optimal Health: Talk to Your Veterinary Team about Your Animals' Dietary Needs." Online ordering is now available at canadianveterinarians.net/practice-economics/animal-health-week.

CVMA members benefit from free services and privileges including a free 30-day trial of Sofie through the CVMA's partnership with LifeLearn Animal Health; a free human resources document bundle through the CVMA's partnership with HRdownloads; more than 800 free CE courses through the CVMA's online education portal; and free general legal advice through VetLaw Online, the CVMA's legal advice column. Find more information under the "Member Benefits & Services" section of our website. [WCV](#)



Melanie Hicks, BSc, DVM, obtained her BSc from the Nova Scotia Agricultural College before attending the Atlantic Veterinary College. Originally from Prince Edward Island, she moved with her family in 2003 after graduating to Moncton, New Brunswick, and began her career as a companion

animal practitioner. After 10 years of practising, Dr. Hicks joined Abaxis Global Diagnostics as a professional services veterinarian. She has been involved with the New Brunswick Veterinary Medical Association as a council member since 2009 and was acting president from 2011 to 2012. She joined the CVMA as a council member in 2013, serving on numerous task forces including the Business Management Advisory Group, Veterinary Wellness Advisory Group, and an innovation and technology group. Dr. Hicks currently lives in Moncton with her husband and son on a small alpaca farm and is working on her MBA in her spare time.

UPDATE ON THE CVMA-SBCV CHAPTER'S DONATION TO THE CDART



The CVMA-SBCV Chapter provided the CDART with a donation of \$10,000 to fund training sessions through BC. So far, CDART volunteers have held several training sessions on companion animal first aid: on Bowen Island, where this training is part of building a disaster response team; in Sparwood, where a small group of people had been trying for several years to afford response training; and in Kamloops for another small team building their skill base.

The lovely horse in the photo is Toby from Vernon. The Vernon disaster response team is brand new, and the CDART was able to give them a quality start to developing a mutual aid corridor from Kamloops through to Sicamous, with hopes of expanding it through to Revelstoke. The CDART also has an active request for a training session in Smithers for the fall and an expression of interest from Tahsis. These courses would not have been possible without the Chapter's donation, which covers travel, gas, and other functional costs.

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

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

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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.



IN MEMORIAM



LAWRENCE BRYANT, DVM
1930–2019

Dr. Lawrence (Larry) Bryant, surrounded by his loving wife Margie and his family, passed away peacefully, in Powell River, BC, on June 28, 2019. Larry was born at Ocean Falls on July 29, 1930. He was a beloved son who was predeceased by his parents, Laurie and Esther Bryant. Larry was of Finnish and English heritage.

His early love for animals developed into a passion for veterinary medicine, where his healing hands helped countless large and small animals. He graduated from the University of British Columbia in 1952 with a BSc in agriculture and from Ontario Veterinary College in 1959 with a Doctor of Veterinary Medicine and Veterinary Surgeon.

Larry and Margie met in 1954. They developed a deep, loving, lifelong relationship that took them to Guelph, where they were married in 1956. After Larry completed his studies, they began their family. Larry and Margie moved west to live and work in BC, then in Spruce View, and Nobleford, Alberta, always as a partnership in his veterinary practice.



In his work, there was a serenity and confidence: a patient knowledge of the mysteries beneath skin and bone. He retired in 1991.

His dog, Dally, added significant quality of life for Larry this last 13 years, and he enjoyed his rose garden and ocean view. Larry was many things to the people who knew him: father, husband, veterinarian, friend, champion pigeon racer, grandpa, and great-grandpa. Larry is survived by Margie, his loving wife of 62 years, and his 8 children, Tom (Camille), Jack (Bev), Carol (Jim), Ross (Lynne), Mary, Blythe (Bruce), Rachel (Christian), and David (Cynthia), 19 grandchildren, Jason, Steven, Greg, Lewis, Solomon, Jessica, Allison, Nathaniel, Courtney, Ashleigh, Zachary, Henry, Clarice, Jennie, Niko, Marc-Antoine, Samuel, Charles-Emile, and Sophia, and 6 great-grandchildren, Brodie, Breanna, Bryce, William, Lily, and Winter, all of whom he loved unconditionally. Larry was deeply loved and will be missed immensely.

He was humble, forever an optimist, compassionate, and a man who loved an intelligent conversation. He treated people and animals with respect, dignity, and genuine kindness. Larry's faith journey was grounded in Christ, and he confidently lived a balance between science and faith. He fought the good fight, he finished the race, he kept the faith, and he will receive the crown of glory. A private family service was held; there will be no funeral.

Provided by Carol M. Wyatt



ROBERT GALLOWAY, DVM
1947–2019

It is with deep sadness and regret that we announce the passing of Dr. Robert Galloway on July 5, 2019. He grew up on a farm in the Ottawa Valley near Carp, Ontario. He completed his undergraduate and veterinary degrees at the University of Guelph and then moved west to establish Steveston Veterinary Hospital in Richmond in 1974. Bob Galloway was a renowned figure within the veterinary profession in British Columbia for almost 45 years. His knowledge and skills were often called upon for second or expert opinions on veterinary matters. He sat on many boards for the BCVMA and gave back much to the profession that he loved and cared about deeply. He had a strong and respected reputation as a principled and accomplished veterinarian.

In conversation with colleagues after Bob's passing it seems that everyone had a story about how Bob touched their personal or professional lives. Anecdotes of acts of great kindness and compassion as well as his generous nature were common and were told with thoughtful remembrance.



One colleague described how he always felt better about our profession after seeing Bob.

He was described as an excellent surgeon who always had the goal to provide cutting-edge veterinary medicine and surgery for his patients and to make our profession the best it could be. He believed that when colleagues could be friends, even in neighbouring practices, the profession would be better for it. He was always very supportive and willing to lend assistance when difficult cases came along. When the call came, he always stepped up. He gave all of himself to his work and never backed away from doing the right thing. He was a credit to the profession and a pleasure to deal with.

I first got to know Bob at a conference in Banff many years ago. Over the years as I came to know him better, I found that everything I had heard about Bob was true. He was a man of the highest integrity. For me, Bob was a great friend and mentor. I was fortunate enough to learn several surgeries from Bob and to be able to bounce ideas and thoughts off him when needed. I also had the honour of fishing with Bob on numerous occasions, and his 72-pound salmon is still the largest I have ever seen.

All of us will remember Bob's tenacity, professionalism, surgical skills, and his desire to leave our profession in a better place. He was a great friend and a great father. He was a great mentor and a great veterinarian. He will be missed by many.

Provided by Dr. Andrew Forsyth and Dr. Breanne Galloway



This cat you saved

Loves a girl

Who needs a friend

To share her dreams

She'll change the world

Because of

This cat you saved

**Our nutrition can change their health.
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Improving Lives Together





THE ART OF DEVELOPING A CLINICAL MIND

BY REINA FENNELL

“**T**hat was a good first thought, but you’re jumping to conclusions. You need to look at the whole picture . . . critically. Just tell me what you see.” The words of WCVM’s associate dean Dr. Chris Clark came back to me as I was thinking about the semester I’d just finished at veterinary school. I had misinterpreted the data on a hematology report for one of my clinical examinations and had to repeat the station. Dr. Clark was talking me through the case to help me learn from my first rushed diagnosis.

Having just finished my first clinical pathology course, I had an overload of information about blood chemistry, complete blood counts, and urinalyses gallivanting around in my head. Before I’d even finished reading the case, I’d had three ideas of what was wrong with the fictional Border Collie in the question, and I’d jumped on the first diagnosis that seemed to make sense. When I thought back to how much my clinical pathology professors had stressed the need to carefully observe and describe before diagnosing, I felt embarrassed about falling into such a common trap. I had been given the mental framework for approaching these problems; I just needed to practise, practise, practise. Thinking back to the multidisciplinary approach my instructors had taken to drive that point home, I thought, “Perhaps I should visit more art galleries.”

A handful of the clinical pathology professors at WCVM, Drs. Ryan Dickinson, Melissa Meachem, Hilary Burgess, and Nicole Fernandez, have been trying out a new way of introducing veterinary students to observation and description. This new addition to the curriculum is in collaboration with Marina Fischer—an art historian—and two pathologists at the University of Calgary, and it involves the fine arts.

In an interview with CBC Saskatoon this past May, Dr. Nicole

Fernandez discussed the initiative she helped WCVM adopt only last year. She talked about how clinical pathology is taught to students, saying, “They know that they have a goal in mind; they’re trying to get to a diagnosis. . . . And sometimes all of us jump to conclusions before we’ve collected all the information that’s there, and that can be dangerous.” The clinical pathology department at WCVM partnered with Remai Modern, an art gallery in Saskatoon, and offered several optional fine arts labs for veterinary clinical pathology students. At the gallery, led by the museum’s guides, students studied various works of art and practised describing different pieces to their colleagues. Following that, they had group discussions to create interpretations of some of the artistic works based on the description.

“With these works of art, [veterinary students] don’t expect themselves to know anything about them, so they are a little bit freer in describing what’s there without feeling the pressure to make an interpretation or come to some sort of diagnosis,” continued Dr. Fernandez, in telling CBC how the combination of the health sciences with training traditional to artists has exciting potential for students of all the medical sciences, especially veterinary students learning clinical pathology.

The original idea for a fine arts lab to be a part of the veterinary program was inspired by an approach being adopted by more and more medical schools in the US for teaching future doctors how to be more observant and descriptive. The initiator was a physician at the Yale School of Medicine in the 1990s, who was teaching

“I WAS VERY INTRIGUED THAT A GROUP OF MY TEACHERS SO SPECIALIZED IN A COMPLEX SCIENCE LIKE CLINICAL PATHOLOGY WOULD TURN TO ART AS A TEACHING TOOL.”

medical students how to describe dermatologic lesions. Dr. Fernandez was particularly intrigued by this approach because of her personal interest in creating art. Also, she felt she’d lacked teaching in observational skills throughout her training as a pathologist and wanted to offer her students more specific instruction in what they are otherwise expected to figure out on their own.

About 10 per cent of the second-year veterinary class participated in the labs, but Dr. Fernandez hopes to see more interest in future years as the multidisciplinary concept becomes more accepted at WCVM and in the veterinary academic realm as a whole. When asked about the quality of student engagement during the trips, Dr. Fernandez said she found the students involved to be very enthusiastic and positive. “The art educators who guided the trips commented that the second time, students just jumped right into describing the works of art, since they had learned from their previous experience and were not hesitant the second time.”

“Sometimes when we look at a blood sample, or even an X-ray or something, we zero in, our eyes focus on a lesion that we notice, and we sometimes forget to look at the big picture,” said second-year veterinary student Carina Beekman, who took part in the optional labs at Remai Modern. When asked how her time at the museum changed the way she looked at diagnostic test results, she said that the fine arts observation training “allowed us to describe everything first and not jump right to diagnosing.” Dr. Fernandez says the clinical pathology department plans to continue to offer two optional field trips a year for second-year students to introduce them to observation through art. She also hopes to create a third-year elective that uses a combination of conventional pathology training with fine arts to hone observation skills.

“You miss 100 per cent of what you don’t see,” said one of my professors last semester, stressing the importance of doing a meticulous physical exam. It sounds simple, but it’s true, and keen young veterinary students—me included—and new veterinarians have a tendency to rush over the looking part—especially once we’ve already found something.

As a final question to Dr. Fernandez, I asked her what her favourite work of art was. She said, “So many to choose from! I particularly like landscapes and art featuring domestic animals. But the art that really blew me away was Monet’s *Water Lilies*. When I was 16, I saw them in Paris at the Orangerie, and it was an incredible experience. I had seen prints of them before, but to see them full size and in person was so different and so powerful. Everyone was quiet in the gallery, like in church, so I don’t think it affected just me!”

Developing a clinical mind is a personal experience, and I’m learning it tends to involve more art than science. For myself, as someone who has always been more inclined toward the arts but ended up in the sciences because of my love of animals, I was very intrigued that a group of my teachers so specialized in a complex science like clinical pathology would turn to art as a teaching tool. It made me realize that there’s no formula for learning medicine, and I’m excited to see my own, and my colleagues’, creativity become more incorporated into the process. **WCVM**

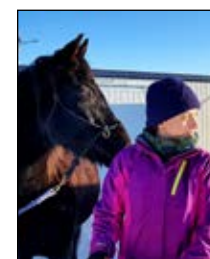
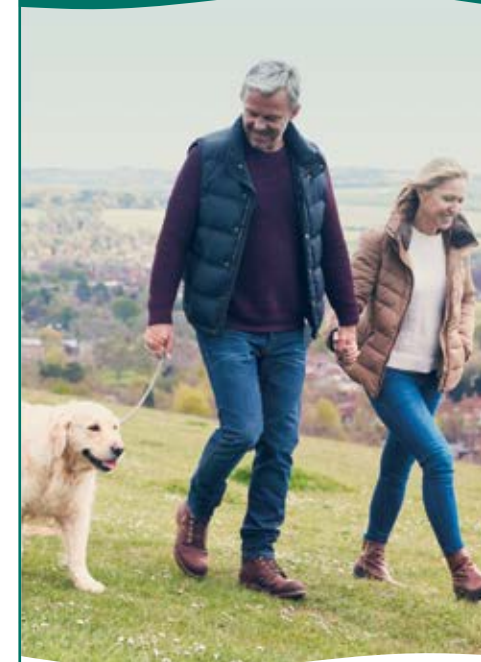


PHOTO BY PAUL ROMMER/ISTOCKPHOTO.COM

Reina Fennell, WCVM class of 2021, grew up on an acreage on Haida Gwaii surrounded by marine and forested wilderness, which started her on her journey of getting as many experiences with different species as she could on the islands, in other parts of Canada, and abroad. She completed two years of a BSc in bio-veterinary science at Dalhousie University’s Faculty of Agriculture before being accepted into WCVM in 2017. After graduation, she would like to be a large animal veterinarian with a focus in equine medicine and surgery.

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

DIAGNOSING LAMENESS IN DOGS 6 TO 12 MONTHS OLD

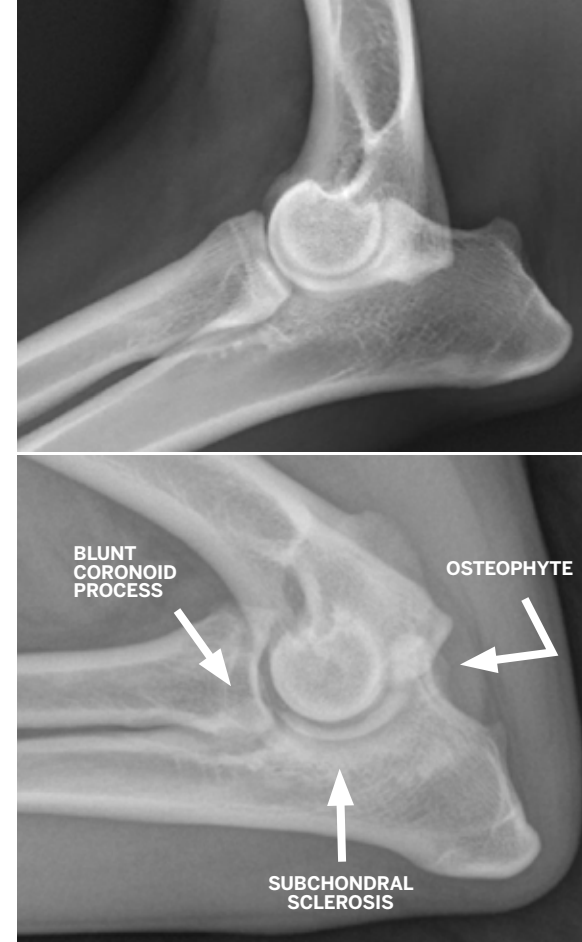
BY GEOFF HUTCHINSON, MS, DVM, Dipl. ACVS

"ALTHOUGH RADIOGRAPHIC EVALUATION OF ELBOWS CAN BE CHALLENGING DUE TO LIMITED SENSITIVITY IN EARLY CASES OR MILDLY AFFECTED PATIENTS, IT REMAINS THE BASELINE SCREENING TEST."

Billy is a nine-month-old female spayed Bernese mountain dog who presents with a history of recent rapid growth and a seemingly awkward gait while running. The clients report that she is a very friendly and active puppy, but they are disappointed that she is not willing to go jogging with them. They report that she will sit down after running only about a kilometre and does not seem willing to continue. The clients have been working hard to socialize her with other dogs, and they report that she is friendly until the other dogs try to wrestle, in which case she will aggressively defend herself from being climbed on.

On examination, Billy is tall for her age, and when she stands, her forelimb

and hindlimb placement is narrow compared to the width of her shoulders and hips. On a leash-walk evaluation, it is difficult to determine whether there is a source of lameness. She is slow to start and seems frightened of the slippery exam room floors and hallway, but outside, once walking, she seems to not have a lameness in any particular limb. She



TOP: Normal elbow. BOTTOM: Dysplastic elbow.

seems apprehensive about being touched, and it is a bit of a struggle to examine her thoroughly. There is no definitive lost range of motion of any of her joints and no certainty as to where her discomfort is centred.

I explain to the clients that there are numerous things that can occur in puppies as they are developing and that this phase of growth is especially prone to onset of orthopedic conditions as the skeleton is very rapidly changing and expanding over only a few short months (refer to West Coast Veterinarian issue 35, "Diagnosing Lameness in Dogs Zero to Six Months Old," for a comprehensive list of rule-outs for lameness in puppies). I explain that many of the conditions can be diagnosed by radiographic evaluation but that it may be necessary to take radiographs of multiple limbs for comparison and to evaluate for the different rule-outs. Given Billy's anxiety and apprehension, it is likely that we will need to perform radiographs under sedation to achieve diagnostic-quality positioning.

As the clients are uncertain about whether their dog even has a problem, and given that radiographic evaluation of multiple limbs will likely be a moderate expense, they prefer to continue conservative management. As a way to evaluate whether Billy is in discomfort, I dispense two weeks' worth of NSAID medication and recommend that they change none of their routine including attempts to go jogging and to visit the dog park. My recommendation is that they assess Billy's overall attitude, stamina, and comfort while taking the pain medications compared to when she is not medicated. The clients return in two weeks and report that Billy is a completely different dog: she now seems very pleased to go for runs and to play

with other dogs at the park and has turned into a complete nuisance as she has started jumping up with no manners onto people and counters.

Given that she responded to pain treatment so dramatically, the clients are much more motivated to pursue diagnostics to determine what is causing the pain in their young dog. Radiographs are performed under sedation of Billy's pelvis, shoulders, elbows, and proximal hindlimbs. Unfortunately, several things are found to be abnormal, including mild bilateral hip dysplasia/incongruity with very early arthritic changes of her acetabulum and femoral neck. Radiographs of her elbows also show bilateral early degenerative changes.

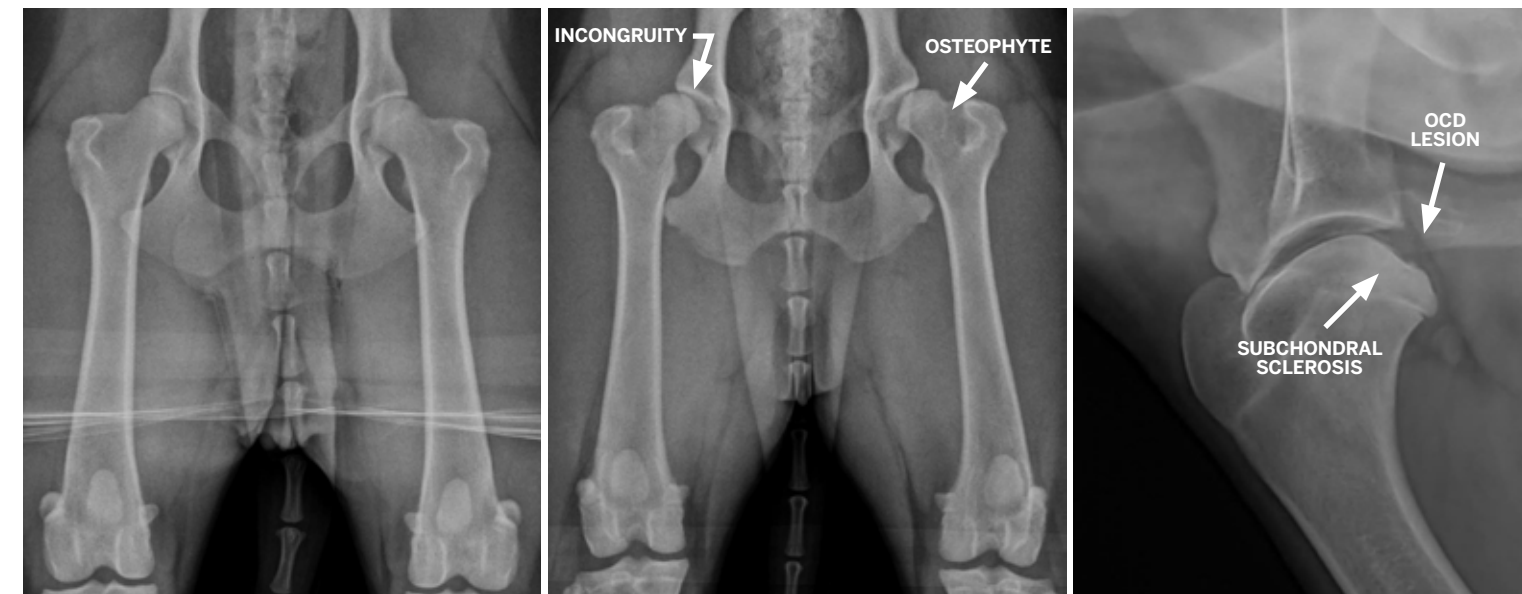
During the rapid growth phase of medium- to large-breed dogs that occurs between approximately 6 and 12 months of age, the most common causes of symmetrical orthopedic problems are associated with dysplasia of the hips and elbows, and with OCD (osteochondritis dissecans) lesions of the shoulder. Radiographic evaluation remains the ideal basic screening test to evaluate for these conditions. Radiographs are ideally done with comparison views of both limbs and using sedation to allow the best positioning and least discomfort for the patient.

Radiographic evaluation of the shoulder is usually quite sensitive for diagnosing caudal humeral head OCD lesions. Sensitivity can be improved by supinating the forelimb to roll the caudal humeral head into a greater silhouette and by positioning the humeral head over either the trachea or forward of the dog's sternum to reduce summation of tissues. OCD lesions are typified by a radiolucent defect on the silhouette of the caudal humeral head and by sclerosis of the underlying epiphyseal bone. Shoulder OCD usually responds well clinically to arthroscopic or open OCD flap removal and debridement of the subchondral bone to induce fibrocartilage healing of the OCD lesion.

Although radiographic evaluation of elbows can be challenging due to limited sensitivity in early cases or mildly affected patients, it remains the baseline screening test before further, more advanced diagnostics are pursued. Ideally three radiographic views are performed per elbow including a straight cranial-caudal view, an extended lateral view, and a flexed lateral view. Simple flexed lateral views can be performed as an economical first screening step, as many of the initial changes are evident on this view. Hallmarks of elbow dysplasia that are evident on the lateral views include blunting of the coronoid process, subchondral sclerosis of the ulnar notch, and osteophytes of the anconeal process. Radiographic changes on cranial-caudal views are almost exclusive to the ulna (with the radius usually having changes only in advanced

osteoarthritis), reflecting the observation that elbow dysplasia is almost entirely limited to the medial compartment. These changes include osteophytes of the silhouetted articular surface of the ulna. In cases where there is a high degree of suspicion for elbow medial compartment disease but radiographs are not definitive, diagnostic sensitivity can be vastly increased with CT scan as CT is more sensitive for subtle sclerotic changes and fissures of the coronoid region, and it eliminates summation of bony tissue overlying the diseased region.

Although open and arthroscopic fragmented coronoid process removal can improve the dog's near-term comfort, multiple publications and clinical observations indicate that there is usually ongoing progressive arthritis of the medial elbow compartment and associated progressive clinical signs of lameness. Elbow joint replacement remains in limited clinical use due to its complexity, morbidity, and high potential for complications. There have, however, been improved clinical outcomes associated with procedures that address the overload of the medial compartment due to conformationally narrow-based body shapes (the presumptive cause of medial-compartment disease/elbow dysplasia). These procedures shift loading of the elbow from the medial compartment to the lateral compartment. The first of these procedures, sliding humeral osteotomy (SHO) has been established for almost 20 years but has had limited clinical use due to its high morbidity and high complication potential. More recently, proximal ulnar osteotomy (PAUL) has been introduced to achieve similar shifts in loading of the elbow from the overloaded and degenerative medial compartment to the intact and healthy lateral compartment. The PAUL procedure has considerably reduced morbidity and complications compared to SHO with promising initial clinical results in medium- to long-term outcomes. Although it is ideal to use PAUL or SHO in younger patients early in the disease process, older patients with significant

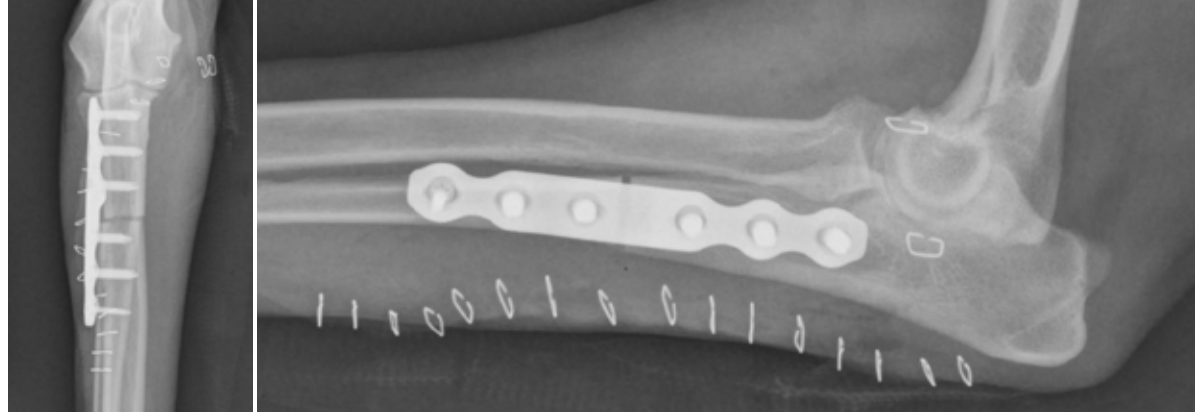


Normal hips.

Dysplastic hips.

Shoulder OCD.

PHOTOS COURTESY OF GEOFF HUTCHINSON, MS, DVM, Dipl. ACVS



LEFT: Elbow PAUL AP view. RIGHT: Elbow PAUL lateral view.

“ULTIMATELY, GIVEN THERE WAS ALREADY ARTHRITIS OF THE HIPS AND GIVEN THE PATIENT’S EXPECTED CONTINUED SKELETAL GROWTH, TREATMENT OF THE HIPS WAS DEFERRED UNTIL FOLLOWING SKELETAL MATURITY.”

osteoarthritis of the medial compartment may also benefit from these procedures, as they shift the load to the healthy lateral joint cartilage.

Radiographic evaluation of the pelvis to evaluate for hip dysplasia typically includes a ventral-dorsal view with legs extended, femurs parallel, and an attempt to centre the patella and the fabellas to assure appropriate limb alignment. Congruity of the hip joints is evaluated by assessing whether the femoral head is parallel to the medial acetabulum and assessing the degree of femoral head coverage over the acetabular rim. An assessment is also made for early arthritic/degenerative changes of the acetabulum and femoral head and neck. Given that the hips

may subluxate significantly or alternatively be well-reduced in the acetabulum at the time the radiograph is taken, the sensitivity of a ventral-dorsal radiograph is increased by performing a “distraction view” radiograph using a foam wedge between the limbs to push the femoral head out of the acetabulum. This technique has been well standardized by the PennHIP method, which is a more stringent test to evaluate for hip dysplasia in breeding animals. Treatment options for hip dysplasia will be discussed further in a subsequent year-in-the-life article.

For Billy, the treatment options were discussed at length with the clients. Ultimately, given there was already arthritis of the hips and given the patient’s expected continued skeletal growth, treatment of the hips was deferred until following skeletal maturity. Bilateral elbow arthroscopy was performed, with moderate coronoid fragments removed from both elbows. A PAUL procedure (which can be performed as early as nine months of age) was performed on the elbow with the greater degenerative changes. Evaluation and potential PAUL procedure of the less-affected elbow was deferred until after healing from the first PAUL procedure. **WCV**

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Initial approach to a vehicle to identify evidence.

FORENSIC INVESTIGATIONS

WHAT I LEARNED AT THE INTERNATIONAL VETERINARY FORENSIC SCIENCES ASSOCIATION CONFERENCE

BY HOLLY TILLOTSON, DVM

For decades, general practitioners have been asked to assist with animal cruelty cases—mostly neglect and abuse. Traditionally our input has been in the form of examining an animal (whether alive or deceased) and then writing a report or, less often, testifying in court, but now, veterinarians trained in forensics may be involved in the crime scene investigation itself. Veterinarians may help collect evidence by performing forensic necropsies and analyzing bloodstain patterns and bite marks. They are now using DNA evidence, toxicology, advanced imaging, and virtopsies (virtual autopsies) to provide a wealth of new information for the investigating authorities. The well-established link of animal abuse with child, spousal, and elder abuse has helped to push veterinary forensics forward as an established discipline.

Earlier this year, I was honoured with the Dr. Carol Morgan Memorial Award given by the Animal Welfare Foundation of Canada and so I used this award to attend the 12th annual International Veterinary

Forensic Sciences Association (IVFSA) conference held in St. Pete Beach, Florida. While veterinary forensics is still considered an emerging discipline, the IVFSA has been active for several years in providing opportunities for general practitioners like me to increase our knowledge and skills in forensic

investigations. As the knowledge base grows—which it seems to be doing exponentially right now—our ability to assist animal control agencies, the SPCA, and more recently law enforcement with their investigations has grown as well. Veterinarians have carved out

a distinct and unique role and have become essential to many investigations. In some cases, they have even taken on lead investigatory roles.

The IVFSA conference is held over three days, with a one-day pre-conference workshop that was on dog fighting this year. There were 102 attendees, including veterinarians, veterinary technicians, animal control and humane law enforcement staff, lawyers, and non-veterinary forensic professionals. Nine countries were represented, including China, South Korea, Colombia, Brazil, Canada, Australia, United Kingdom, Indonesia, and the US.

The conference's workshop on dog fighting was one of the best workshops that I have attended as a veterinarian. The day began with an introduction by a former New York City policeman who works for the ASPCA as an undercover investigator in the dog fighting world. He was involved in an eight-year investigation uncovering the largest clandestine dog fighting ring in the US at the

Examining dogs seized during a fight.



PHOTOS COURTESY OF HOLLY TILLOTSON, DVM

THIS PAGE LEFT: An assortment of drugs associated with dog fighting; many are smuggled in from Mexico. **RIGHT:** Identifying evidence typically found where dogs are housed and trained.



time: the 2007 case of Michael Vick. Over 50 dogs were seized, and Michael Vick was sentenced to 23 months in prison, which was precedent setting. As I understand it, dog fighting is much more of a problem in the US than it is in Canada; however, there is an ongoing investigation into a possible dog fighting ring in Ontario.

After the introduction to the day we were divided into groups and tasked with processing four separate crime scenes: a vehicle involved in a routine traffic stop that was suspected of transporting a dog from a fight, the home of the suspect driving the car, the area where the dogs were housed and trained to prepare for fighting, and finally a dog fight in progress. Each area was set up within the hotel and the hotel grounds. The scenes were staged to be as close as possible to the real thing, and all of us were impressed at the attention to detail. At each crime scene, we took far and near photographs of the scene and identified, photographed, collected, and logged evidence. As we processed each crime scene, it became clear that we needed to understand each of our roles, what sort of evidence we might come across, and how to maintain the proper chain of custody for the evidence at each crime scene. The long day ended with a debriefing by each of the groups for each of the crime scenes. This highlighted areas where our groups excelled and areas where we needed to pay more attention so that our evidence would be admissible in court. This workshop was invaluable in providing exposure to a world that does not lend itself to this level of discovery often.

The next three days offered a more traditional conference setting. Lectures covered a wide range of topics, such as forensic anthropology, comparing virtopsies to forensic necropsies, using DNA in cruelty cases, atypical gunshot wounds in the dog, determining the post mortem interval using immunohistochemistry, establishing forensic autopsy standards, wildlife crimes in Colombia, mortality in Florida panthers due to gunshots, developing veterinary forensics in Taiwan, identifying injuries from illegal trapping methods, the forensic pathology of hemorrhagic shock, officer safety, and animal abuse in Brazil. The range of topics at the conference captures the breadth of knowledge in veterinary forensics and where the discipline is heading.

One thing that became obvious to me very quickly was that the people working in veterinary forensics are all welcoming, down-to-earth folks who truly want to work together to help fight animal abuse and suffering. All of the people I talked with had a deep passion for the work that they do and were happy to share their knowledge and experience with anyone. This was a social group too. It was a small gathering, and everyone knew or was at least acquainted with everyone else, so discussions sprang up naturally. It took no time at all to find yourself in a discussion on using MRIs in forensics one minute and then suddenly on the latest cock fighting bust in southern California. The conference features a “bring your own slide” night where anyone can share a case with the group for any reason at all. They may need some help with a troublesome case, want to share something that is odd or unique about the case, or simply want to stimulate discussion and get input from the group. This is a relaxed event where no one is super prepared, nothing is polished, and people can feel comfortable asking for help, getting ideas, and listening to discussion in a collaborative atmosphere.

Another social aspect of the conference is the soiree where the signature drink for the conference is revealed. This year's concoction was the Ant on the Beach. Past drinks included the Embalminator, the Algor Mortis, the Vaccination, and the Hematoma. The soiree this year provided an opportunity for a local company that has developed an artificial dog that could potentially replace the use of live dogs during surgical exercises in veterinary school. The dog on display had an intestine with a foreign body, a bladder with stones, a spleen with a tumour, palpable femur pulses, and tissue that bled when cut. There was significant interest and excitement within the group with the possibility of making the use of live dogs obsolete.

The knowledge and contacts I took away from the IVFSA conference would have been impossible to get any other way, and this was an experience I will carry with me through the cases I have yet to work on. I want to thank the Animal Welfare Foundation of Canada again for this award. **WCV**

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IS THERE A VETERINARIAN SHORTAGE IN BC?

RECENT CHAPTER LABOUR MARKET STUDY PROVES A HUGE NEED FOR ADDITIONAL VETERINARIANS IN BC

BY VERONICA GVENTSADZE, MA, PhD, DVM

As of the time of publication of this issue, the final Sector Labour Market Partnership Report had not yet been approved for publication. The moment it is approved, it will appear on the Chapter website's news page, at this link: www.canadianveterinarians.net/sbcv/news.aspx.

BACKGROUND PHOTO BY K. THALHOFER/ISTOCKPHOTO.COM



“THEN I LOCUMED IN THE HEART OF VANCOUVER, AND A NEW CLIENT REMARKED THAT THEY’D HAD TO WAIT TWO WEEKS FOR A HEALTH CHECK APPOINTMENT FOR THEIR CAT.”

These findings are a call to take stock of our situation. There is no question that the veterinary profession lacks unity. Perhaps such unity is not even possible and does not need to be forced. The profession serves two very distinct priorities. Veterinary medicine originated as an agricultural profession, but currently most veterinarians (73 per cent) care for companion animals, which are a very recent concern in the history of our profession. When we consider the overall shortage of veterinarians, in the interests of fairness and perspective we can’t forget that provinces heavily subsidize the veterinary education of their residents. This practice reflects the agricultural and public-health roots of our profession, yet it continues in the present day when most graduates work in companion animal medicine—not that any of us are complaining about the subsidies. Moreover, graduates (such as me, one of the 14 per cent of BC veterinarians who graduated from OVC) are free to practise wherever they wish, whether or not their province of origin is experiencing veterinary shortages.

There is also likely to be some degree of brain drain from food animal medicine into small animal medicine. I think the reasons for this may include the grueling physical demands of food animal medicine, the pay, the on-call schedule, the length of the work day, and growing public scrutiny of intensive farming methods and veterinarians’ role in the process. Many veterinary students decide during their college years that they cannot or do not want to work in food animal medicine and switch their focus while in school. Many dedicated food animal veterinarians switch to companion animals due to physical limitations that accrue with age, the social isolation of a rural veterinarian’s life, and the brutal strain of being the only large animal vet in the area, especially during calving and lambing season.

While food animal veterinarians are becoming more scarce, the need for them grows, and their role is becoming more important. These veterinarians are at the forefront of defense against zoonotic and foodborne diseases. In the course of their daily operations, farmers often require antibiotics to treat their animals for abscesses, mastitis, and other infections not necessarily related to husbandry conditions. Under new Government of Canada regulations that came into effect in December 2018, antibiotics can only be obtained by prescription from a veterinarian who has examined the animals in question. Producers whose animals are ill and might require antibiotics are often in the impossible situation of having no one to call on. Farmers and horse owners even resort to culling animals who are sick or undergoing a very difficult birth to spare them from suffering in the absence of veterinary care.

Why are such shortages not better known and documented? The most recent issue of the *Canadian Veterinary Journal* classified ads lists a total of 32 ads for BC, with only four being for mixed practices, and none for strictly large animal. On the one hand, not all need for employment is reflected in posted ads. On the other, and just as importantly, one cannot advertise for a position that has ceased to exist following retirement or departure of a veterinarian. Many regions have no large animal veterinarians at all. The situation was so dire for one city that back in 2016, the City Council of Grand

Forks put out a hiring letter—essentially, a cry for help—to try to attract a large animal veterinarian to the area.

Unlike the US, Canada does not have a loan repayment program that would attract large animal veterinarians to fill urgently needed positions. In the US this program, which has been in place since 2013, requires that a veterinarian work at a given job for three years in return for forgiveness of US\$75,000 in student loans. The process of selecting veterinarians for these positions is quite competitive, which restores and upholds the high repute of a food animal veterinarian. This program goes hand-in-hand with identifying and mapping areas and practices experiencing the greatest need. BC does not have such a map or list. Establishing one would be a first step in showing the provincial and federal governments the extent and distribution of the need. Another measure applicable to the large animal sector, and one that was mentioned in the survey, is for the government to facilitate the hiring of experienced foreign-trained veterinarians. While most BC veterinarians graduated from WCVM (45 per cent), this number is closely followed by graduates of schools outside Canada (34 per cent).

Within companion animal medicine, the situation is more complex. Besides competition among employers for associates, the pressure of social media ensures that there is continued competition for status of best clinic in a given area. Urban practices compete with rural practices for associates if not for clients. As if all this was not already a sufficient source of stress, now there is the added stress over not being able to help animals who simply can’t get an appointment due to shortage of service hours. So while our work-life balance may have improved, it has been offset by new worries that signal the end of an era.

A generation of baby boomers is nearing retirement, or already selling their practices and retiring. Of the surveyed veterinarians, 22 per cent plan on retiring over the next five years; that is a very large proportion of the current workforce. Unwillingness of new graduates to become practice owners is somewhat offset by a decrease in the number of independently owned practices as a consequence of consolidation. Clinic owners who have taken years to build a practice that they are justifiably proud of often find themselves pressured to sell to a corporation that will introduce profound changes, or to an independent owner whose vision is entirely different and conflicts with their own.

Recently our friends in the village of Rosswood in northern BC took their new puppy to a veterinarian for his neuter surgery. They drove him 180 km one-way to a clinic in Prince Rupert because there were no appointments available at any of the clinics in nearby Terrace. But Terrace is the boonies, where a dearth of veterinary appointments has been a reality for a while. Then I locumed in the heart of Vancouver, and a new client remarked that they’d had to wait two weeks for a health check appointment for their cat. So, They’re Here: veterinarian shortages across BC, both in companion animal and food animal practice, have now been confirmed by a study that was commissioned by the CVMA-SBCV Chapter.

The survey attempted to reach 1,080 veterinarians of the 1,599 registered with the College of Veterinarians of British Columbia as of 2018. Besides individual veterinarians, the survey reached out to veterinary employers, 111 of whom responded (they make up just over one-fifth of all of BC’s veterinary employers). Two-thirds of responding employers indicated that they would hire additional veterinarians right now if those were available, and 71 per cent anticipate that it will be difficult to hire associates.

While employment in the veterinary sector is increasing in absolute terms (the number of veterinarians has been growing by 5.3 per cent per year over the past five years), it is lagging behind the growth in demand for veterinary services. It is estimated that the BC veterinary industry would need more than 100 new entrants each year to keep pace with growing demand. Besides stress over failing to provide services, or to provide them on time, veterinarian shortages are causing many practice owners (30 per cent) to project a slower rate of growth. In food animal medicine, veterinarian shortages can have national and even global health impact besides affecting the health and welfare of animals and the livelihood of farmers.

“AS IF ALL THIS WAS NOT ALREADY A SUFFICIENT SOURCE OF STRESS, NOW THERE IS THE ADDED STRESS OVER NOT BEING ABLE TO HELP ANIMALS WHO SIMPLY CAN’T GET AN APPOINTMENT DUE TO SHORTAGE OF SERVICE HOURS.”

Clients, especially the older generation, have come to expect continuity of care, and get thrown off balance when their pet gets seen by different doctors, no matter how attentive and competent. On many locum days, I find myself lightly booked because clients want to see their regular doctor and not a floater for non-urgent appointments. On such days it’s very hard to believe in the absolute shortage of veterinarians. It would be more accurate to say that there is shortage of a certain model of veterinary care; but such a model is no longer sustainable. It existed at the price of working every day without a holiday for years and sometimes even decades.

Retaining associates is often as difficult as hiring them in the first place. Half of the employers who responded to the survey indicated that they had experienced veterinarian turnover in the past two years. Observation will show that there is increasing fluidity in veterinary employment. Besides working fewer hours, veterinarians want more choices of where to work. They want freedom from on-call duty in more than one sense: they do not wish to be at the emotional beck and call of any one clinic’s clientele. It is increasingly common for veterinarians to work at different practices, simultaneously or consecutively, before deciding where to settle down—if they do. It is also common for veterinarians to combine part-time work as associates with freelance work as locums. The practice of hiring for permanent part-time positions is becoming more frequent. Lack of interest among students and new graduates in owning a practice has also been noted in the survey. Perhaps there is nothing surprising or lamentable about doctors not wishing to carry such a huge responsibility. On the one hand, the availability of independent practices for purchase is decreasing with increasing consolidation. On the other, students often have no way of knowing whether they might be cut out for ownership, since the veterinary curriculum devotes little to no time to the business aspect of veterinary medicine.

The survey found that the veterinary industry is in the early stages of consolidation, which means that corporations are expected to continue buying up clinics. The colleagues I know are ambivalent about this phenomenon. From personal experience, I can say that the highly regulated set-up of corporate medicine prevents veterinarians and nurses from being run off their feet and from systematically discounting or altogether giving away their services. This, of course, prevents them from helping as many animals as they might in an independently owned practice, a fact that could be a source

of regret and guilt. Corporate ownership of veterinary clinics does not translate into an advantage over independently owned clinics in terms of attracting and retaining employees: these clinics experience similar shortages.

Several measures have been suggested to address the shortage of veterinarians. Among them are increasing the number of seats for BC residents at WCVM, making it easier for foreign-trained veterinarians to become licensed in BC, and providing incentives on a municipal level for veterinarians to practice in rural areas. Quality is at least as important as quantity. Employers want not just any associates, but either experienced ones or, in the case of new graduates, ones who feel and project confidence.

Lack of confidence among new graduates was a consistent observation by respondents to the survey. Here is a number that is quite significant in this context: the 2017 Student Canadian Veterinary Medical Association survey for new graduates showed that 31 per cent of new graduates obtained internships after their DVM degree. That is an impressive percentage of graduates who either do not plan to enter general practice and instead wish to specialize (which is good—specialists are themselves at a premium), or who do not feel ready for general practice without additional training. The latter suggests that veterinary schools are not graduating doctors who are ready to hit the ground running. Many schools are going through curriculum revisions, and now is the time to tell them what knowledge and skills new graduates need to make them confident. Areas of deficiency identified by respondents include dental training, surgical training, client communication skills, work-life balance management, epidemiology, food production systems, and aquaculture.

In the new reality where doctors rotate frequently, we need to communicate with colleagues often and clearly about shared cases and to keep detailed and clear records. Pet owners, especially the younger generation, want to be educated, and they will consult the internet with or without our guidance. We need to stop railing against the non-existent Dr. Google and learn to delegate much of our clients’ education to sound and reliable online resources. We need to make sure our technicians are working in tandem with us and conveying the same message to clients, thereby reinforcing it. At the same time, there is much that veterinarians, especially new graduates, can learn from technicians, many of whom historically have more experience in dentistry than veterinarians themselves, and who often inspire their employers to take on a new area of practice such as exotics medicine.

We don’t know whether the shortages we are experiencing will ultimately shape the future of pet ownership, whether there will be fewer pets overall due to fewer available service hours, and whether veterinary medicine will become stratified to cater to owners with different expectations and different financial means. Many factors are outside our control, but the new reality puts us in a strong position to reclaim our status as doctors and scientists who care for animals, rather than customer service representatives whose work is often taken for granted. **WCV**

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1. Emerging risk: *Echinococcus multilocularis* in Ontario Infographic, 2019 update. Ontario Animal Health Network. Available at: <https://oahn.ca/wp-content/uploads/2019/03/OAHN-Echino-multi-Update-FINAL-20190304.pdf>

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CANINE CUTANEOUS MAST CELL NEOPLASIA

BY CHAMISA HERRERA, DVM, Dipl. ACVIM

Normal mast cells are a type of granulocyte that is found in all vascular tissue in the body except the retina and central nervous system. These cells are often positioned at the junction between the host external and internal environment (skin, mucous membranes, gastrointestinal tract). When functioning normally, they play several important roles in the body, including parasite elimination, angiogenesis, wound healing, and bone growth and remodelling. Most of these functions are carried out through cytokines released from the cell, the most important of which include histamine, heparin, proteases, and tumour necrosis factor.

BACKGROUND PHOTO: CYTOLOGY OF A MAST CELL TUMOUR FROM AN LABRADOR RETRIEVER.
PHOTO BY JOEL MILLS [CC BY-SA 3.0 (HTTP://CREATIVECOMMONS.ORG/LICENSES/BY-SA/3.0/)].

FIGURE 1: GRADING SCHEMES FOR MAST CELL TUMOURS.

PATNAIK		KIUPEL	
GRADE	DESCRIPTION	GRADE	DESCRIPTION
I	<ul style="list-style-type: none"> • Low grade • Typically don't metastasize • Can be cured with wide excision 	LOW	EXCISION CAN BE CURATIVE → > 4 YEARS
II	<ul style="list-style-type: none"> • Intermediate grade • Unpredictable—some act low grade, some act high grade • If mitotic index > 5, treat like a high-grade tumour 	HIGH	TREAT WITH SURGERY AND CHEMOTHERAPY → < 4 MONTHS
III	<ul style="list-style-type: none"> • High grade • High rate of metastasis: lymph nodes → liver/spleen • Usually best treated with wide excision and chemotherapy (prognosis < 1 year) 		

“THE ONLY STAGING TEST REQUIRED FOR ALL MAST CELL TUMOURS BEFORE EXCISION IS ASPIRATION OF THE DRAINING LYMPH NODE.”

MAST CELL NEOPLASIA

When mast cells misbehave, this manifests as overreactive mast cells (hypersensitivity/allergic reactions) or the more sinister mast cell neoplasia. Mast cell tumours (MCTs) are one of the most common skin tumours, accounting for 7–21 per cent of all cutaneous tumours. Mixed-breed dogs are most commonly affected; however, there are some purebred dogs at increased risk. Dogs of bulldog descent (Boxers, Boston Terriers, Bulldogs, Pugs) tend to have lower-grade tumours. Other commonly affected breeds include Labrador Retrievers, Staffordshire Terriers, Beagles, Cocker Spaniels, Schnauzers, Rhodesian Ridgebacks, Weimaraners, and Shar-Peis.

There are likely many genetic and environmental factors to development of mast cell neoplasia. One of the biggest contributors to tumour development and progression is mutation of the c-KIT cell surface receptor found on all mast cells. In normal function, a ligand (stem cell growth factor) binds to c-KIT on the surface of mast cells to drive cellular proliferation and differentiation. In many high-grade mast cell tumours, there is a mutation in c-KIT that results in the receptor being activated in the absence of ligand binding. This is like an “on switch” being activated without an operator, and it results in unregulated cell proliferation within MCTs. This receptor can be targeted with drugs such as Palladia, as discussed under “Chemotherapy” below.

MAST CELL TUMOUR GRADING

Mast cell tumours are a heterogeneous group of cancers, whose behaviour is best predicted by tumour grade and completeness of excision. All MCTs should be considered locally aggressive, and this must be accounted for in your surgical approach for removal (discussed below). The risk of metastasis is generally best predicted by tumour grade. Cutaneous mast cell tumours are typically graded on one of two systems: the Patnaik 3-tier system or the Kiupel 2-tier system (Figure 1). While the Patnaik system allows for greater differentiation of tumours, most tumours are designated grade II, and this can make predicting prognosis difficult. Some grade II tumours can be cured with excision, while others develop rapid recurrence and/or metastasis. Generally, grade II tumours with a mitotic index below 5 can be considered low grade. If the mitotic index is greater than 5, the tumour has potential for aggressive behaviour. Due to the unpredictability of grade II tumours in the Patnaik system, the Kiupel system was proposed in 2011. In this system, patients with low-grade tumours had a median survival of more than four years with adequate excision alone. Tumours designated as high grade in the Kiupel system had a median survival of less than four months. While this system certainly allows one to differentiate tumours as clearly benign or aggressive, in practice we know that many dogs with mast cell tumours live more than four months but less than four years. In any event, a high-grade designation on the Kiupel system is an indication of aggressive tumour behaviour and drives a recommendation to pursue chemotherapy.

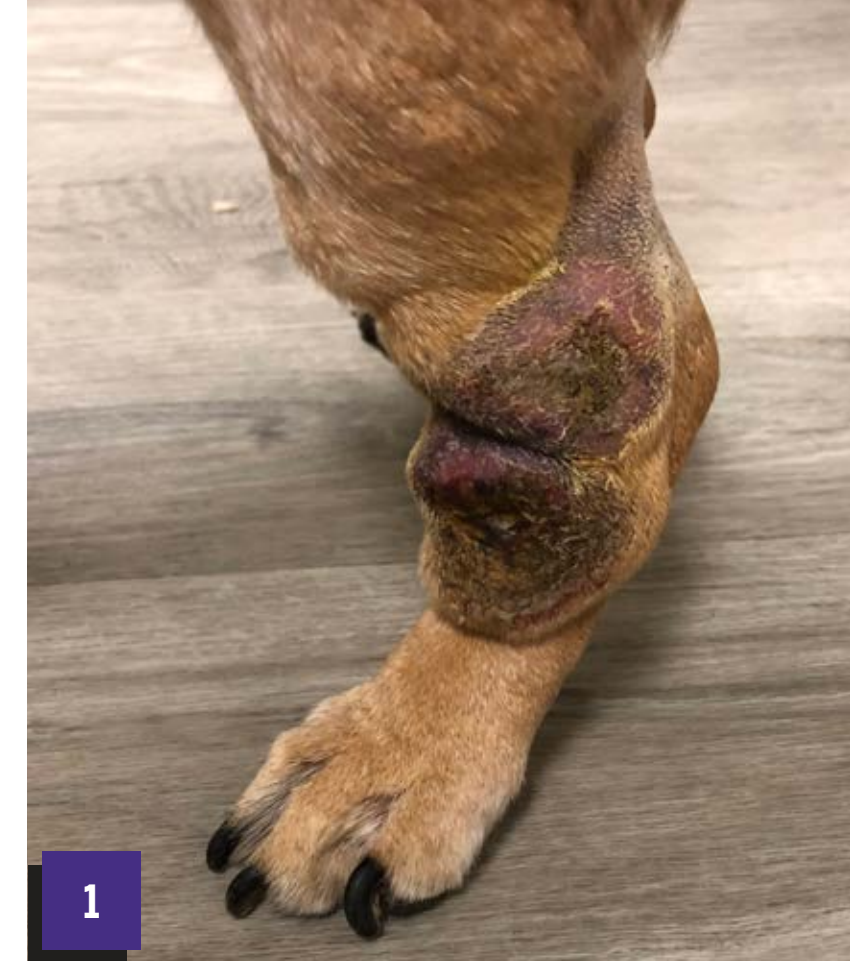
To summarize, low-grade tumours with no evidence of metastasis generally have an excellent prognosis with adequate local control. High-grade tumours have a poor (less than one year) long-term prognosis, and chemotherapy is often recommended in addition to aggressive local control.

OTHER PROGNOSTIC FACTORS

Although tumour grade is the most useful for prognosis, there are a variety of other factors that can help predict the behaviour of a mast cell tumour. Any tumour that is rapidly growing, ulcerated, large, inflamed (Photo 1), or is causing systemic illness (anorexia, melena, vomiting) should be considered potentially aggressive. On the opposite end of the spectrum, small, slow-growing, solitary tumours are often lower grade.

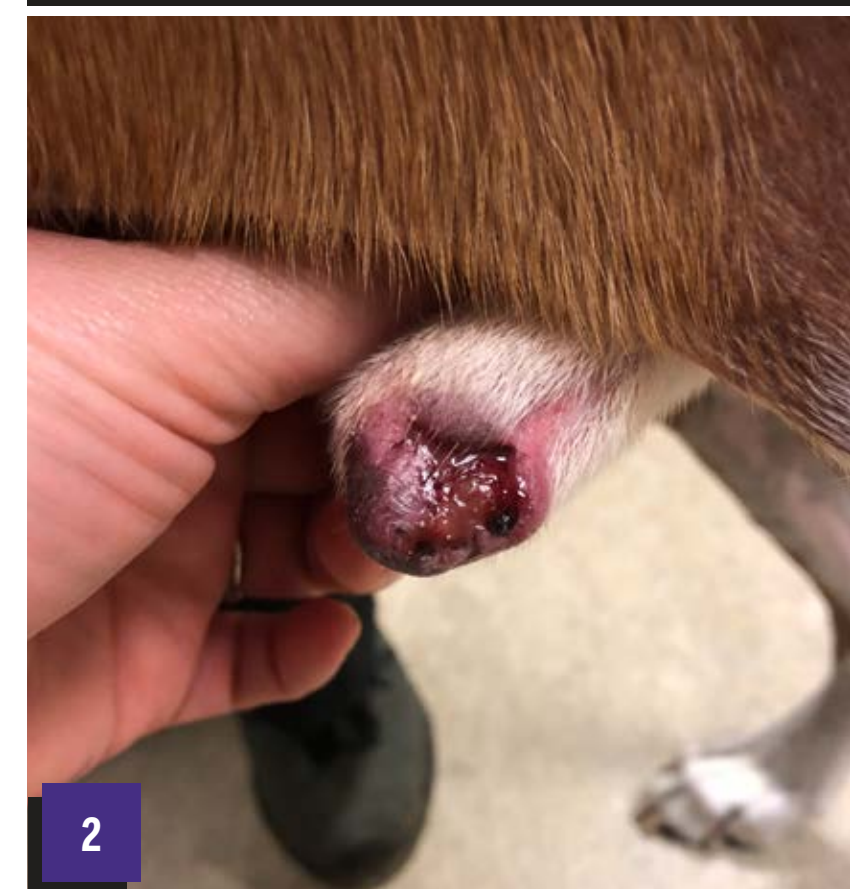
Location can also be prognostic: tumours in prepuce or inguinal, mucocutaneous, and subungual locations often behave aggressively (Photos 2–4), even if the histologic grade would suggest otherwise. For tumours in these locations, I often recommend chemotherapy after local control, regardless of histologic grade, given the known high propensity of these tumours for metastasis. Subcutaneous mast cell tumours tend to have a low incidence of metastasis (4 per cent) and recurrence (8 per cent). The median survival time for dogs with subcutaneous mast cell tumours treated with excision alone was not reached, with an 86 per cent chance of survival to five years. There is no grading system for subcutaneous mast cell tumours. Indices that are most prognostic for aggressive behaviour for subcutaneous tumours are incomplete excision, mitotic index greater than 4, infiltrative growth pattern, and presence of multinucleation. For subcutaneous tumours with these criteria, consider consulting an oncologist to determine whether adjuvant treatment is warranted. Mast cell tumours of the muzzle are unique in that they are associated with a high rate (50–60 per cent) of local lymph node metastasis but can still have a reasonable prognosis when metastasis is present (14 months).

Stage is highly prognostic for mast cell tumours (Figure 2), but it must be considered in light of the tumour grade. For example, dogs with grade II, stage II mast cell tumours (defined as local lymph node metastasis only) can have prolonged survival (more than three years) with aggressive therapy including local control (removal of tumour and lymph node) and systemic chemotherapy. Dogs with grade III mast cell tumours have a more guarded prognosis due to the highly metastatic nature of these tumours, with survival times of less than one year even with aggressive treatment. If there is visceral metastasis (stage IV), the prognosis is grave (less than three months).



1

PHOTO 1: A rapidly growing, large, ulcerated mast cell tumour. This should be considered likely high grade based on exam findings alone. Poor prognostic factors: tumour location. PHOTO 2: A preputial mast cell tumour in a Boxer.



2

PHOTOS COURTESY OF CHAMISA HERRERA, DVM, Dipl. ACVIM

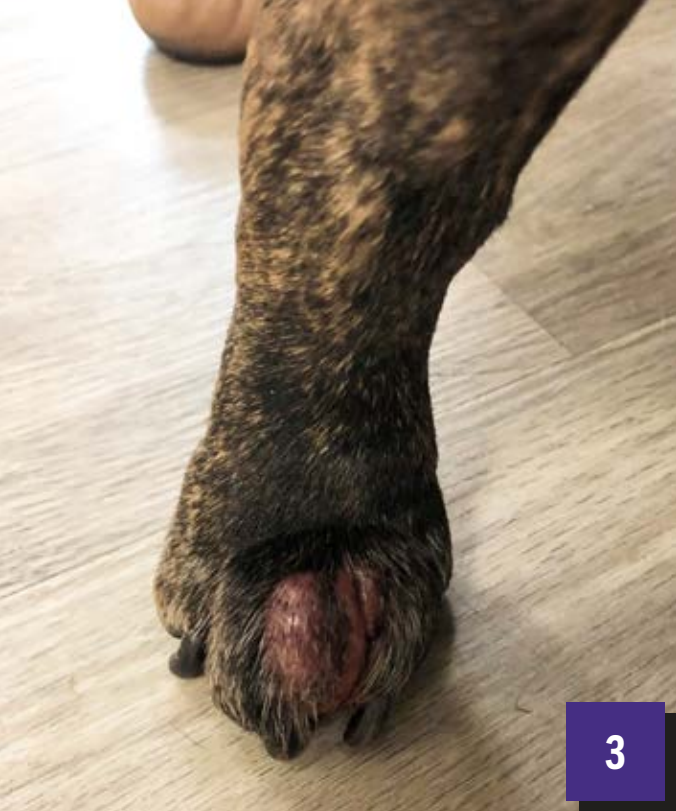


PHOTO 3: A subungual mast cell tumour in a mixed-breed dog.
PHOTO 4: An oral mast cell tumour in a Pug.

STAGING

While complete bloodwork and urinalysis are unlikely to help determine stage, these are recommended before anesthesia and may hint at visceral involvement. The only staging test required for all mast cell tumours before excision is aspiration of the draining lymph node. If the lymph node is negative, there are no other negative prognostic factors, and the tumour is excisable with adequate margins (see below), it is appropriate to proceed with removal. Following excision, tumour grade and completeness of excision can help determine long-term prognosis and need for adjuvant therapy.

If the draining lymph node is positive, there are other negative prognostic factors, or the tumour is not excisable with adequate margins, then complete staging is warranted. Aside from aspiration of the draining lymph node, complete staging includes abdominal ultrasound possibly

Thoracic radiographs are not a routine staging tool for mast cell tumours. Unlike most other neoplasias, mast cell tumours very rarely cause pulmonary parenchymal changes (nodules, etc.). Thoracic radiographs are still reasonable before surgery in any patient to screen for other metastatic disease and as a general screening tool for cardiopulmonary disease. I do perform thoracic radiographs as part of staging for mast cell tumours for which drainage into an intrathoracic lymph node is considered likely. A buffy coat smear is not necessary for mast cell tumour staging in the dog, as circulating mast cells have been documented in other forms of illness and often in higher proportion than in dogs with MCTs.

SURGICAL APPROACH TO MAST CELL TUMOURS

Excision should only be pursued after the local lymph node has been screened for metastasis and only if the tumour can be resected with adequate margins. For mast cell tumours, there are two approaches for recommended surgical margins. A general rule is that MCTs should be removed with 1–2 cm lateral surgical margins and a depth of one fascial plane. Alternatively, a study in 2013 suggested that a proportional approach could be used reliably to achieve local control, with surgical margins planned as lateral margins equivalent to the widest measured diameter of the tumour and a minimum of one fascial plane deep to the tumour. The results of this study suggest that for small tumours (less than 1 cm) a 1–2 cm margin may not be necessary, but also suggest that for large tumours (more than 2 cm), even wider surgical margins may be needed to achieve local control. Our surgery/oncology department tends to take an individual approach to planning

FIGURE 2: MAST CELL TUMOUR STAGING.

I	One tumour confined to the dermis without lymph node involvement
II	One tumour confined to the dermis with regional lymph node involvement
III	Multiple dermal tumours; large, infiltrating tumours with or without regional lymph node involvement
IV	Any tumour with distant metastasis

with liver and spleen aspirates. Opinions among oncologists vary on the need to aspirate the liver and spleen if they appear normal on ultrasound. I tend to aspirate the liver and spleen even if they appear normal if the lymph node was positive, the tumour is known or suspected to be high grade, liver enzymes are elevated, or the location is a poor prognostic factor. Additionally, any concerning ultrasonographic changes in the liver and spleen warrant fine-needle aspiration for cytology.

“IT IS IMPORTANT TO OUTLINE THE TUMOUR IN PERMANENT MARKER BEFORE PREDNISONE TREATMENT, AS COMPLETE TUMOUR REMISSION IS POSSIBLE.”

margins, trying to marry the above sets of recommendations with the location and suspected tumour grade to give us the best chance of clean histologic margins. There is a high degree of variability in the literature for what an adequate histologic margin is following excision. I tend to consider at least 3 mm lateral margins and a quality facial plane deep adequate for most MCTs, though high-grade tumours can recur even with wide histologic margins.

If a positive lymph node is documented before excision, complete staging should be pursued. As dogs with low-grade stage II tumours can still have an excellent prognosis with adequate local control plus chemotherapy, it is reasonable to proceed with surgery after other staging tests have been completed. If the tumour can be excised with the gross margins outlined above, then surgery should be pursued to include the positive lymph node. Lymph node excision does not require wide excision, but a simple lymphadenectomy. Removal of the lymph node is also recommended if cytology is questionable, or if the lymph node is enlarged (even if cytology did not show metastasis).

If the tumour cannot be excised with the gross margins as outlined above, then complete staging is warranted. Following complete staging, a variety of options can be considered to downstage the tumour to achieve local control. These options include prednisone, chemotherapy, and radiation therapy. A study of neoadjuvant prednisone found a 70 per cent objective response rate, with an 80.6 per cent reduction in tumour volume. When using prednisone to downstage a tumour before surgery, I recommend prednisone at 1 mg/kg for 7–10 days, then reassessment. It is important to outline the tumour in permanent marker before prednisone treatment, as complete tumour remission is possible. If the tumour shrinks, you can plan gross margins from the new tumour margin. If the tumour disappears, you can use the permanent marker outline as your surgical margin. If prednisone does not result in enough

tumour shrinkage to achieve intended surgical margins, consider consulting an oncologist to discuss chemotherapy and/or radiation therapy to further downstage the tumour.

RADIATION THERAPY

Radiation therapy is not a routine part of mast cell tumour treatment, though there are specific indications for its use. Radiation therapy is best reserved for tumours for which local control was not achieved with surgical excision (histologic margins are very narrow, that is, less than 3 mm, or histologic margins are dirty). Radiation is also occasionally used to downstage tumours before excision. The need for radiation therapy in mast cell tumour patients can be minimized with careful surgical planning or with use of neo-adjuvant prednisone or chemotherapy. If your pre-surgical assessment suggests that a patient is likely to need radiation (i.e., wide margins are not likely to be achieved), consider doing a complete staging and consulting with an oncologist before excision.

CHEMOTHERAPY

Chemotherapy is generally reserved for high-grade tumours following complete excision or for tumours of any grade with documented metastasis. Chemotherapy can also be used to downstage tumours to facilitate wider surgical margins. Common chemotherapy agents used include vinblastine, lomustine, Palladia, and chlorambucil. A specific discussion of chemotherapy protocols is beyond the scope of this article as there is significant variability among practising oncologists, but Palladia is worth discussing specifically. This is an oral tyrosine kinase inhibitor that targets c-KIT. Palladia binds to the mutated receptor, halting uncontrolled cellular proliferation. In studies of mast cell tumours, tumours with mutated c-KIT had a 69 per cent response rate to treatment with Palladia.

SUMMARY

Mast cell tumours are common and can be unpredictable. Having knowledge of tumour grade and the most common negative prognostic factors can help you prioritize for which patients complete staging is indicated. For all patients, aspiration of the draining lymph node is warranted before surgery. Most mast cell tumours will not have lymph node metastasis, and for these tumours, wide excision is indicated. For tumours with positive lymph nodes or for which adequate surgical margins are not achievable, further workup or consultation with an oncologist may be advisable. **WCV**



VOLUNTOURISM AT WILDLIFE SOS INDIA

OPEN HEART, OPEN MIND

BY SARA DUBOIS, PhD, RPBIO

PAGE 34 AND 35 LEFT TO RIGHT: Sara Dubois on an afternoon elephant walk. Dr. Khadpekar, Wildlife SOS's senior wildlife veterinary officer, applying a turmeric paste to an ailing elephant's feet. Nocturnal sloth bears snoozing in the daytime heat.

Travelling abroad to experience new cultures and view unique wildlife is my favourite way to spend a vacation. However, for many of us who work in the animal welfare and veterinary sectors, travelling to new countries that have different standards of care and values toward animals can remind us that our animal superpowers at home are limited when we are guests in other worlds. I travel to refill my wildlife and adventure batteries, but carrying as much compassion as we do can definitely add extra weight to the heart and mind.

Making a difference while travelling is possible. The range of volunteer opportunities for tourists has increased. Navigating the international choices to find ethical and humane voluntourism opportunities is another matter. Too often, well-intentioned animal-loving travellers are duped into paying for experiences that make them feel like they are helping, when in the shadows, animals suffer exploitation. Having managed a wildlife rehabilitation centre, I thought I knew how to make the right choice. Yet in 2007, after extensive online research and professional-sounding correspondence, a colleague and I travelled with a bag of medical supplies to a wildlife centre in Costa Rica only to find that this “member facility” of an international organization was a total scam. We left on day two of our two-week mission and took our medical supplies with us. No one there knew how to use them, and we were not allowed to.

Wildlife voluntourism's dark side and the ever-increasing social media currency of wildlife selfies have blinded many travellers to the reality of animal suffering abroad. Investigations have revealed entire industries where tourists pay big money to bottle-feed lion cubs who are later used in canned hunts; “sanctuaries” where tourists scrub bathing elephants who are too exhausted to work that day in the elephant-riding industry; and

“rehabilitation” facilities where rescued animals are fed, hugged, and posed for photos, but never given a chance of a wild life.

Thankfully, professional wildlife rescue facilities exist, and promoting their work is critical to exposing the others. I am honoured to share the incredible work of Wildlife SOS India (wildlifesos.org) and the opportunity for veterinary professionals and others to contribute to their important mission.

I had always wanted to travel to India, not just to try every local cuisine, but also to experience its history and culture while gaining a better understanding of the lives of its people in a modernizing world. It took many years though to find the right moment and right purpose to go, as I had to prepare myself for the sights I couldn't unsee and the animals I couldn't help. The feeling of helplessness while on vacation is too familiar from having found many injured animals on past trips, and so now I research local rescue and veterinary contacts in advance.

Planning is important, but knowing when I can help and when I cannot is even more important. There are an estimated 35 million street dogs in India, and I met several hundred of them, some friendly and curious, others scared and sick, and many parasite ridden. A few packs at the sanctuary locations were even sterilized, vaccinated, and ear-tipped thanks to Wildlife SOS's sister

organization Friendicoes SECA (friendicoes.org). Tender moments between dogs and “their people,” whether villagers, kids, or a shopkeeper who feeds them at the end of the day, were heart-warming but rare compared to the sight of dogs eating garbage, running between vehicles, limping, licking wounds, begging, and just trying to survive. Although I'm current on my rabies vaccinations, a close veterinarian friend strongly reminded me, “no touching!” when I shared pictures of the dogs that welcome guests at the Taj Mahal. Every year more than 20,000 people in India die of rabies (36 per cent of rabies deaths worldwide). A shocking statistic, but when you are there, it is easy to see how this happens. Outside the major cities, basic services like water, sanitation, electricity, and health care are still daily struggles.

In the cities and villages, roving packs of dogs, cows, goats, pigs, working equines, and even roadside camels live among the organized chaos of bustling streets of semi-trucks, cars, tuk-tuks, motorbikes, rickshaws, and bikes in a sea of people, choreographed to the sound of honking all day and night. However, just like with our big cities, escaping to the sounds of nature helped to balance the experience with rare bird viewing at Keoladeo National Park, searching for elusive Ganges river dolphins in the National Chambal Sanctuary, and fulfilling childhood dreams seeing Bengal tigers on safari in Ranthambore National Park.

PHOTOS COURTESY OF SARA DUBOIS, PH.D., RPBIO

“TOO OFTEN, WELL-INTENTIONED ANIMAL-LOVING TRAVELLERS ARE DUPED INTO PAYING FOR EXPERIENCES THAT MAKE THEM FEEL LIKE THEY ARE HELPING, WHEN IN THE SHADOWS, ANIMALS SUFFER EXPLOITATION.”

Having met Wildlife SOS founders Geeta Seshamani and Kartick Satyanarayan at several conferences in Canada over the years, I knew of their groundbreaking work to end the cruel dancing bear industry while creating alternative livelihoods for the nomadic communities that depended on the exploitation of the sloth bears. They founded Wildlife SOS in 1995 to care for wildlife in distress and have since become one of the largest organizations in south Asia, with multiple facilities across the country providing rescue, rehabilitation, and sanctuary to hundreds of animals annually. Recent work has focused on rescuing working elephants, anti-poaching operations, conservation workshops, and campaigning against exploitative animal tourism, while engaging with local communities to make them part of the solution. Wildlife SOS staff are dedicated and experienced professionals and include several wildlife veterinary officers who lead animal care teams in rescue events and provide daily care oversight and medical treatments to both permanent sanctuary and temporary rehabilitation patients.

International veterinary and animal care professionals, students, and members of the public are welcome to volunteer with Wildlife SOS Agra Bear Rescue Facility and the Elephant Conservation and Care Centre located at different sites between the cities of Mathura and Agra in the state of Uttar Pradesh. The international volunteer program to participate in daily animal husbandry provides guest housing, food, and local transportation at a reasonable weekly fee that goes directly to support the organization's work. Placement options vary based on volunteer expertise, with opportunities for international veterinarians to work alongside local veterinary officers. The Agra Bear Rescue Facility located in a government forest sanctuary near Keetham Lake houses about 200 sloth bears in enclosure habitats on two sides of the Yamuna River, with outdoor kitchens for food prep, a small surgical suite, staff living areas, and education space. A 15-minute drive to the Elephant Conservation and Care Centre ends near a small village where shipping containers have been converted into kitchens, offices, an education space, and a café for day visitors. Habitats with pools and shade are home for the dozens of elephants who are taken out with caretakers and visitors for multiple daytime walks in the adjacent fields.

In November 2018, Wildlife SOS opened a state-of-the-art elephant hospital, the first in India. It has wireless digital radiological capabilities, ultrasound, laser therapy, an X-ray machine, an in-house pathology lab, and a medical hoist for comfortably lifting disabled elephants and moving them around the treatment area. There is also a digital weighing scale, a protected-contact elephant restraining device, a hydrotherapy pool, quarantine enclosures, and infrared cameras. All of this will enable regular check-ups as well as out-of-routine treatments, and it will enable Wildlife SOS to be a world leader in the field of elephant veterinary care and management. The veterinary team here is eager to have students and practising veterinarian professionals join them as they break new ground in elephant care and treatment protocols. This is a very specialized area that requires a unique approach. The team has much to share and is open to new ideas for developing standards of care.

If you have been waiting for the right time and a meaningful purpose to travel to India and help animals and local communities with an open heart and open mind, contact Wildlife SOS (volunteer@wildlifesos.org) for an incredible experience. This organization has an opportunity for every skill set. **WCV**

OUTDOOR ACCESS FOR DAIRY COWS

BY MARINA VON KEYSERLINGK, PhD

The sustainability of food-animal production systems is becoming the focus of intense public debate by social critics, animal advocates, and others. More specifically, it appears that some practices common on modern dairy farms are out of step with societal perceptions of what constitutes good animal welfare. Specific concerns of course include that animals are healthy and well nourished, but recent interest in farm animal welfare stems more from concerns about pain or distress and concerns that animals are kept under “unnatural” conditions, with limited space and a limited ability to engage in social interactions and other natural behaviours.

When asked to envision an ideal dairy farm, US citizens unaffiliated with the dairy industry commonly responded that cows should be provided with space to “roam.” There was consensus among many respondents that this roaming space should be outside; as one participant stated: “on pasture where the cow could be free.” Another study found similar results with citizens placing great emphasis on pasture access and freedom of movement. Providing access to more natural living conditions, including pasture, was viewed as important for the large majority of participants, including those affiliated with the dairy industry. Other studies have found similar results, with participant comments showing that the perceived value of pasture access for dairy cattle went beyond the benefits of eating grass; citizens cited benefits such as exposure to fresh air, ability to move freely, ability to live in social groups, improved health, and healthier milk products. To accommodate the challenges of allowing pasture access on farms, some participants argued in favor of hybrid systems that provide a mixture of indoor housing and grazing.

This desire by citizens that dairy cattle be given access to pasture is at odds with current practice on the majority of farms. For example, in the United States less than 5 per cent of lactating dairy cows have routine access to pasture. There is no data on how many lactating cows in Canada have routine access to pasture, but the numbers here are likely similar to those in the United States.

Despite the public indicating that access to pasture is important, the 2009 Canadian Code of Practice for the Care and Handling of Dairy Cattle (Dairy Code) is largely silent on this issue, recommending only “for bedded-pack or composted-pack barns, provide access to pasture or an exercise yard to decrease labor and bedding requirements.” The Dairy Code is currently under review, so it remains to be seen how Canada’s dairy industry moves forward on the issue of pasture access. In Sweden, farmers are required to provide dairy cows with access to pasture during summer months.

Research suggests that cattle are highly motivated to access pasture; in recent work, we found that cattle are willing to push comparable amounts of weight to access pasture and fresh feed. This motivation to access pasture is greatest during the early evening hours. The motivation to obtain



“THIS DESIRE BY CITIZENS THAT DAIRY CATTLE BE GIVEN ACCESS TO PASTURE IS AT ODDS WITH CURRENT PRACTICE ON THE MAJORITY OF FARMS.”

fresh feed after milking represents a gold standard for strong demand; the fact that the motivation of cattle to access pasture matches, if not exceeds, this motivation to access feed indicates that people are right to believe that pasture is important to dairy cows. However, it is important to understand that the importance of pasture varies with time of day, season, and weather. A number of studies have shown that when cows are given the choice between going out on pasture or staying inside a well-designed and well-managed barn, they spend most of the day inside the barn but the majority of the night outside on pasture, particularly during warm summer nights.

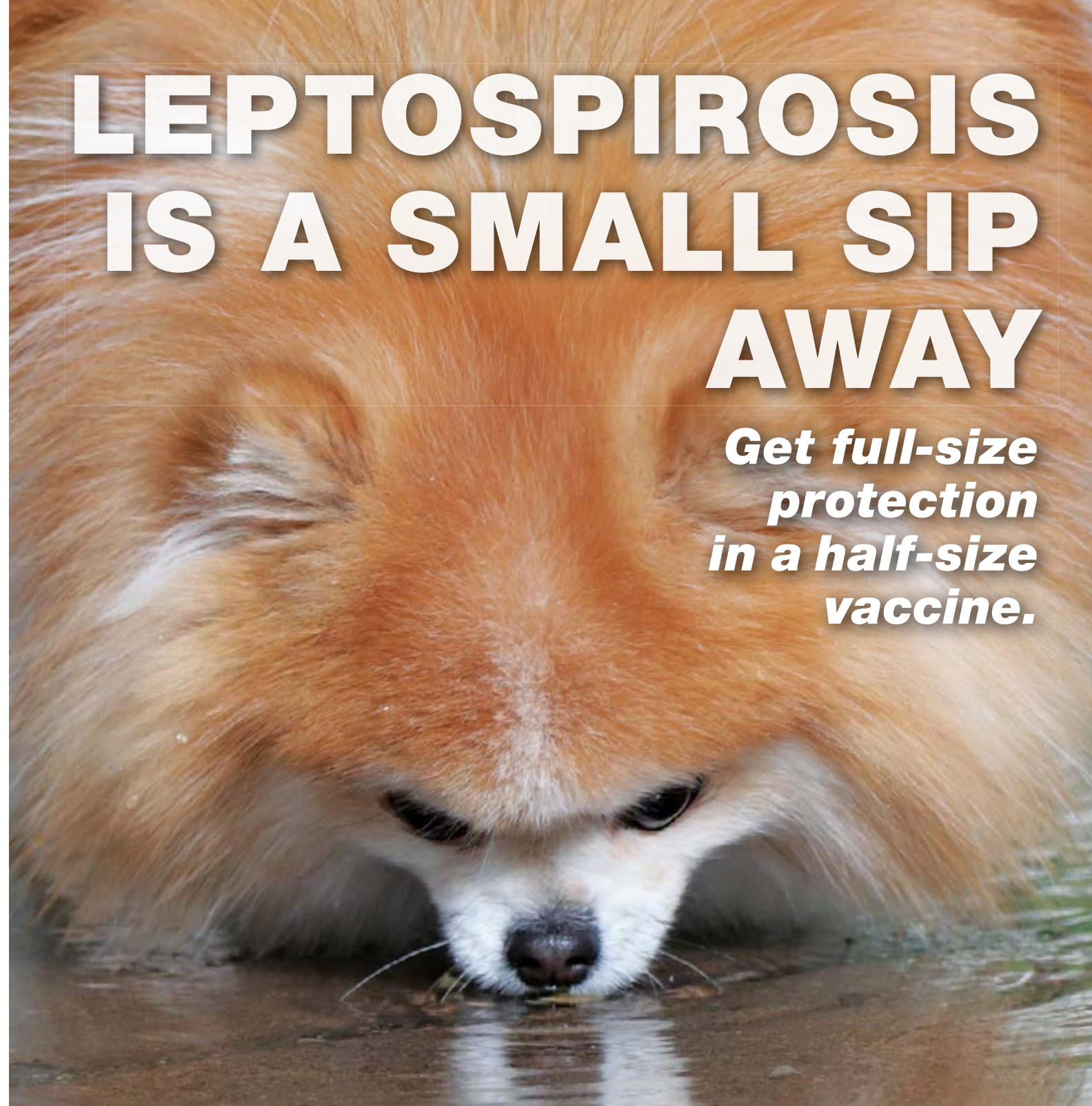
Pasture access is difficult to implement on some farms due to the barn layout and space availability. Also, in regions like the Pacific Northwest, wet winter conditions can result in damage to pastures from cow traffic. Thus dairy farms may also benefit from alternative outdoor areas, such as sand or wood chip paddocks that can be made available at times of the year when pasture access is not feasible. Research at UBC has shown that cows will also take advantage of these alternative forms of outdoor access, although they are less preferred than pasture. One recent study has shown that farmers can also benefit from providing these alternative forms of outdoor access, as cows are more likely to show “heats,” making it easier to identify cows that are ready for breeding.

It seems clear that some form of outdoor access, ideally pasture, is increasingly expected of dairy farms, and that cows can benefit from this access. It is also clear that the way that both indoor and outdoor systems are designed and managed is important and will affect cow preferences. Our work at UBC supports the use of hybrid systems that allow cows access to a comfortable indoor facility as well as suitable outdoor areas. [WCV](#)

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HUMANE CANADA'S NATIONAL ANIMAL WELFARE CONFERENCE

BY CECILY GRANT, DVM



Bonjour, je m'appelle Cecily et je ne parle pas français. And so began my journey to Montreal and Humane Canada's annual National Animal Welfare Conference. Little did I know I was about to learn a new language, but French was not it!

Humane Canada, also known as the Canadian Federation of Humane Societies, is an umbrella organization of the SPCAs, humane societies, and many other animal welfare groups in Canada, making it Canada's largest animal welfare organization. They provide support and professional development for their member organizations, public education on animal welfare issues, and advocacy for improving Canada's animal protection laws and policies. They have an ex officio seat on the CVMA Animal Welfare Committee, and it was with the generous support of the CVMA-SBCV Chapter that I attended the conference as a representative of the Chapter's Animal Welfare Committee.

This very well-organized, professional conference had a wide variety of excellent speakers and a really engaging group of exhibitors. Leading veterinarians involved in animal welfare were there, including Canada's own Drs. Alice Crook, Hugh Chisholm, Margaret Doyle, and Ian Duncan, as well as Dr. Jennifer Conrad, founder of the Paw Project. I was pleased to see veterinarians from across the country in attendance, engaged in the conversations that have been so important for us here in BC.

Veterinarians made up a relatively small proportion of the presenters and attendees at this conference, yet there was plenty of interest to all. Nick Jukes from InterNICHE, a British company that provides alternatives to animal use in education, demonstrated a canine model that can be used by veterinary students to practise intravenous, intubation, and even surgical techniques; representatives from VCA Canada, Royal Canin, and PetSmart spoke of their programs and support for shelters and rescue groups; staff of the International Fund for Animal Welfare provided teaching resources for educators of First Nations people living with dogs; Élise Desaulniers, executive director of the Montreal SPCA,

announced that largely as a result of their work, horse-drawn carriages will be banned at the end of this year, and the SPCA will offer to buy the horses.

I admit to being somewhat star-struck by the keynote speaker, Jackson Galaxy, best known for his TV series *My Cat from Hell*, who spoke at the awards breakfast. Far from his Hollywood persona, he spoke eloquently of the shift toward empathy in the way we view animals: a "rescued" pet is now a status symbol. He emphasized the need to do much more than simply provide the basics of care to animals in shelters and homes. We need to help them "become their best selves." For shelters, a well-adjusted animal is more likely to be adopted. For veterinarians, this could mean providing education and resources for owners on environmental enrichment, nail trims, and litter box preferences for cats, all of which help prevent the most common reasons for surrender of cats to shelters.

Two of the award recipients stood out: Dr. Charu Chandrasekera received the Women for a Humane Canada Award for her work to drastically reduce the numbers of animals used in research. She founded the Canadian Centre for Alternatives to Animal Methods at the University of Windsor, which recently received a grant for \$1 million for its work. Dr. Ian Duncan received the Frederic A. McGrand Lifetime Achievement Award for his work with chicken behaviour. His work on battery cages in the 1970s finally resulted in their abolishment, many years later. His message, delivered in a measured Scottish brogue: be patient and don't give up. Incidentally, past award winners of this award include Dr. David Suzuki and BC's own Dr. Carol Morgan.

The presentations during the conference ranged from interesting to mind blowing. From the status of animals allowed in women's shelters in Ontario (practically none) to horrifying statistics on exotic animals in Canada (70 per cent die within six weeks of import at the wholesaler; 90 per cent of reptiles carry salmonella) to the sentient world of fishes, almost all species were included.

A well-attended session on ending declawing in North America presented the current situation in Canada (six provinces with bans so far), new statistics (no increase in relinquishments one year after the ban was passed in Nova Scotia), and some seriously disturbing slides of Dr. Conrad's, whose primary duty is to surgically repair the paws of declawed large cats in southern California. This generated lively discussion throughout the rest of the conference on how and when (not if) the rest of North America will follow suit. We should be proud to be one of the first provinces to impose a ban.

The DC Cat Count is an ongoing multimillion-dollar scientific study on the outdoor cats of Washington, DC. They are working to provide much-needed validated studies on such contentious issues as how to measure outdoor cat populations, the effectiveness of trap-neuter-release

"IT COULD BE EXPLAINED TO, FOR EXAMPLE, NURSING HOMES, WOMEN'S SHELTERS, AND POLICY-MAKERS WHAT THE 'NO PETS' POLICY IS COSTING."

programs, and how much outdoor cats really affect the wild bird population. Spoiler alert: so far the science is not supporting the idea that cats are killing all the songbirds!

The same speaker, Dr. Roger Haston of PetSmart Charities, gave what was to be the most fascinating presentation of the conference: "Social Capital—A New Framework for Animal Welfare." He spoke of the traditional approach in which like-minded people tend to be "do-ers," and the inherent shortcomings of this top-down, interventionist approach. Instead, we will be far more effective as facilitators, building bridges between stakeholders.

Clinicians know only too well that without collaboration and cooperation with owners, their patients cannot be helped, but the idea goes beyond that. For example, in the DC Cat Count, researchers enlisted the help of people in low-income neighbourhoods to count cats. As a result, not only did the scientists gain valuable data, but people became much more aware of the cats living among them and began to value them more. Trust between these disparate groups was built, and the cats benefited.

Dr. Haston also suggests that there is a cost to breaking the human-animal bond, and that it should be quantifiable, so that it could be explained to, for example, nursing homes, women's shelters, and policy-makers what the "no pets" policy is costing. Taking a "one health" approach is an idea that veterinarians definitely understand. Going further, quantifiable measures can be understood by investors and those in government. Imagine the links that can be created when one speaks in this common language!

Finally, I was invited to participate in a workshop. The CEO of Humane Canada, Barbara Cartwright, facilitated "Developing Collaborative Relationships for Healthy, Safe and Wanted Cats in our Communities." The purpose was to create a reference document to advance collaborative cat welfare programming—yes, in one day! A group of 39, including six veterinarians, worked like demons all day, and the resulting document will be distilled from our contributions. It will be gratifying to see this used to help the huge problem of cat overpopulation in Canada. Think we don't have a problem? Check out Humane Canada's *Cats in Canada 2017* report here: www.humanecanada.ca/cats_in_canada_2017.

Et voilà! I was on my way home, with a new language and a fresh approach to animal welfare. And to top it off, I brushed up on that other language: *poutine, crêpes, sirop d'érable* . . . **WCV**

PHOTOS COURTESY OF CECILY GRANT, DVM

RABIES IN BC WHAT VETERINARIANS NEED TO KNOW

BY ERIN FRASER, BSc, MSc, DVM

With the recent human rabies case on Vancouver Island, the number of inquiries about rabies and reports of potential exposures have dramatically increased across the province. In BC, rabies is one of the animal diseases that is reportable to the Chief Veterinary Officer under the Reportable and Notifiable Disease Regulation, pursuant to the BC Animal Health Act (2014). BC veterinarians fulfill their reporting requirements by submitting samples from a suspect animal to the CFIA laboratory for rabies testing.

Any veterinarian who suspects rabies in an animal (dead or alive) should inform the BC Centre for Disease Control (BCCDC) Public Health Veterinarian at 778.677.7790 to obtain assistance with risk assessment and management. Detailed guidelines for veterinarians can be found on BCCDC's website at: www.bccdc.ca/health-info/diseases-conditions/rabies.

These guidelines were developed by an expert panel of BC veterinarians and public health practitioners using evidence, expert opinion, and consensus.

When a veterinarian becomes aware that a human has been exposed to a potentially rabid animal (domestic or wild) they should:

1. explain that rabies is a zoonotic disease;
2. encourage the person to consult their physician or local public health authority for further guidance; and
3. report the potential human rabies exposure to the health authority where the exposed person lives.

In BC, veterinarians and animal health technicians are considered to be at medium risk for exposure to the rabies virus. Serological testing of veterinary workers is recommended every two years to assess antibody levels. A booster immunization is recommended when the antibody level is less than 0.5 IU/ml.

PHOTO COURTESY OF CHRISTINA CARRIÈRES / BCBATS.CA

CANINE LEPTOSPIROSIS SURVEILLANCE IN BC

BY BRIAN RADKE, PhD, DVM, and ERIN FRASER, BSc, MSc, DVM

Over the last few years, there has been increased interest in the prevalence and distribution of leptospirosis in BC from both veterinarians and dog owners. The diagnosis of canine leptospirosis in BC is not reportable or notifiable, so it has been difficult to get a complete picture of the disease in the province. To help fill this information gap, the BC Ministry of Agriculture's Animal Health Centre Laboratory, in cooperation with True North Veterinary Diagnostics and IDEXX Laboratories, is generating surveillance data on suspected and laboratory-confirmed cases of canine leptospirosis in BC. As data become available, they are being posted on the Animal Health Centre's website (Reportable and Notifiable Diseases section).¹

The surveillance data include canine cases of leptospirosis diagnosed at one of the three labs in BC. Confirmed laboratory cases are defined as having a positive PCR or having a four-fold or greater increase in MAT (microscopic agglutination test) antibody titre between acute and convalescent serum samples. Suspect cases have a single elevated MAT titre (>1:800). These case definitions are commonly used in canine leptospirosis surveillance systems, but it is recognized that these definitions may underestimate the true number of cases. One measure of disease incidence is the rate of positive cases among those that are tested. Unfortunately, the number of dogs tested for leptospirosis by the cooperating laboratories is unknown. The AHC typically tests approximately 40 dogs a year and detects one PCR positive each year.

The BC canine leptospirosis surveillance data includes the date of the laboratory diagnosis and all laboratory leptospirosis-specific diagnostic testing including the sample(s) tested and the results. The location of the veterinary practice which submitted the samples for laboratory testing is noted. Caution is needed in interpreting location data: it reflects the location of the submitting veterinarian, which may not be where the case was infected. Where available, signalment information (i.e., age, gender, and breed) about the case is included.

BC's canine leptospirosis surveillance report includes cases diagnosed since January 1, 2018. All six cases diagnosed in 2018 were confirmed cases based on positive PCR test results. One case was from Victoria, and five were from the lower mainland—with two cases

“ONE CASE WAS FROM SAANICH, TWO FROM VANCOUVER, AND ONE FROM SURREY.”

from Surrey and one case each from Boundary Bay, Langley, and Vancouver. Cases spanned from February to November, with the majority occurring in the fall.

As of June 30, 2019, four canine cases have been diagnosed. All are confirmed cases, three based on PCR positive results and one with a greater than four-fold increase in MAT. One case was from Saanich, two from Vancouver, and one from Surrey. Eight dogs had blood and urine PCR results, but only two were positive on both specimens. The remaining six dogs were PCR positive on one specimen and PCR negative on the other. The breed of six of the dogs was identified; none were small breeds.

Human leptospirosis cases in BC must be reported by laboratories, and case data are posted at the BC Centre for Disease Control's communicable disease dashboard.² Since 2007, there have been 21 human cases of leptospirosis reported in the province with zero to six cases reported per year. Travel history is unknown in many of these cases; therefore, the prevalence of locally acquired human cases in BC remains unknown. However, human infections from exposures in BC are believed to be very rare. The most common routes of transmission to people are from direct exposure to urine of infected animals or by drinking or coming into contact with water infected with *Leptospira spp.* Transmission can also occur when people: 1) with cuts or abraded skin come into contact with infected water or soil; 2) have direct contact with birthing fluids of infected animals; 3) inhale aerosols containing *Leptospira spp.*; or 4) have direct contact of their eyes or nose with infected water or fluids. The risk of transmission of leptospirosis from infected animals to people is highest in populations that work outdoors and work with animals. Although the transmission rate from dogs to people is usually low, veterinary staff should maintain effective infection control strategies to prevent leptospirosis as well as other zoonoses.^{3,4}

BC veterinarians who become aware of a case of canine leptospirosis that meets the laboratory surveillance case definition and is not included in the surveillance data are encouraged to contact Dr. Brian Radke, Public Health Veterinarian, BC Ministry of Agriculture (brian.radke@gov.bc.ca or 604.556.3066) to share case findings to add to the surveillance data. [WCV](#)



Erin Fraser, BSc, MSc, DVM, is the BC Centre for Disease Control's public health veterinarian. She received her BSc in 1993, DVM in 1998, and MSc in 1999, all from the University of Guelph. She has over 20 years of experience as an epidemiologist, public health veterinarian, researcher, and executive director. Dr. Fraser's professional interests include animal health, public health, zoonotic diseases, antimicrobial use and resistance surveillance, and food security. She co-founded Veterinarians without Borders-Canada, and has worked with interdisciplinary and multicultural teams to develop programs and projects that address public and animal health issues.



Brian Radke, PhD, DVM, is a public health veterinarian at the BC Ministry of Agriculture's Animal Health Centre in Abbotsford. Following graduation from WCV in 1989, Brian spent five years in private veterinary practice in Ontario and the Fraser Valley with a focus on dairy herd health. Following a PhD in agricultural economics from Michigan State University, he was employed by Alberta Agriculture as a dairy cattle research veterinarian and a research economist. Dr. Radke was a public health veterinarian at the BC Centre for Disease Control for five years before joining the Ministry of Agriculture in 2011.

¹ BC Ministry of Agriculture Animal Health Centre Laboratory, Reportable and Notifiable Diseases, www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/animal-health/reportable-notifiable-diseases.

² BC Centre for Disease Control, Reportable Diseases Data Dashboard, www.bccdc.ca/health-professionals/data-reports/reportable-diseases-data-dashboard.

³ S. A. J. Guagliardo et al., "Despite High Risk Exposures, No Evidence of Zoonotic Transmission During a Canine Outbreak of Leptospirosis," *Zoonoses and Public Health* 66, no. 2 (2019): 223–231.

⁴ *Compendium of Veterinary Standard Precautions for Zoonotic Disease Prevention in Veterinary Personnel*, National Association of State Public Health Veterinarians Veterinary Infection Control Committee, 2015, nasphv.org/Documents/VeterinaryStandardPrecautions.pdf.

⁵ J. E. Sykes et al., "2010 ACVIM Small Animal Consensus Statement on Leptospirosis: Diagnosis, Epidemiology, Treatment, and Prevention," *Journal of Veterinary Internal Medicine* 25, no. 1 (2011): 1–13.



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