ISSUE N°62
MARCH 2026

WEST COAST VETERINARIAN

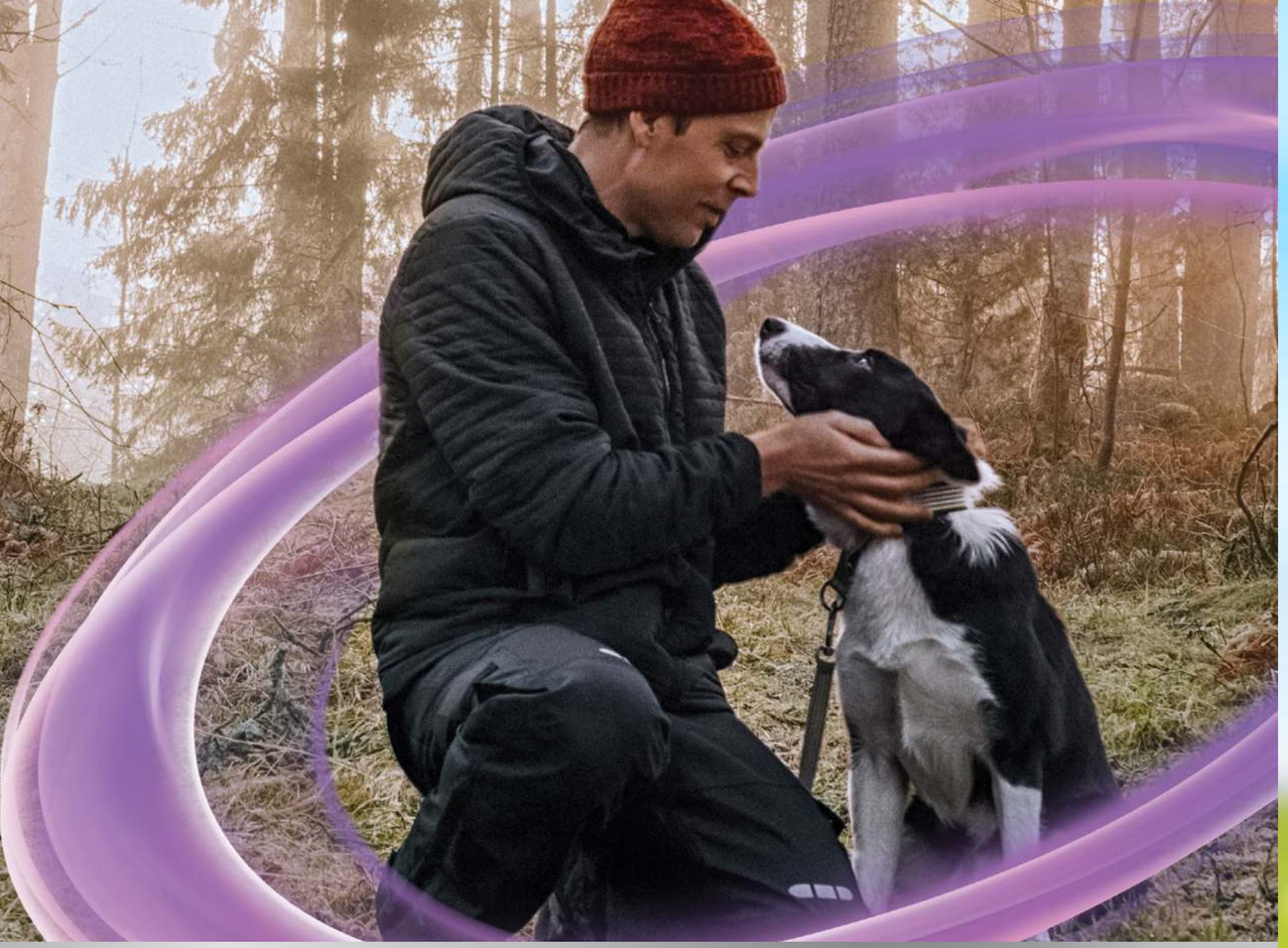
NEEDLE-SHYNESS IN HORSES

WORLD TRAVEL

AEROMONAS HYDROPHILA AND SEPTIC SHOCK IN A DOG

SBCV 2026 SPRING SUNDAY CE SESSIONS

SEE DETAILS ON PAGE 15



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References: 1. Perier N, et al. *Open J Vet Med.* 2020;10(9):155-163. **2.** Perier N, et al. *Open J Vet Med.* 2021;11:289-298. **3.** Current NexGard SPECTRA® Package Insert.

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FROM THE EDITOR

COREY VAN'T HAAFF
EDITOR

TO THE EDITOR

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

ON THE COVER

Electroacupuncture is performed with low-stress handling techniques. PHOTO SUPPLIED BY NATALIE YOGUEL.

There's no doubt it's been a tough several months for BC veterinarians. We've seen—and been directly involved with—a campaign to address what we see as challenges at the provincial regulator that were significantly impacting veterinarians and the public interest.

The SBCV got involved after receiving multiple complaints—calls and letters of concern—about how regulatory investigations/complaints, spending, and communications were being handled by the provincial regulator. We heard this from veterinarians, the public, media, and other key stakeholders. We tried to gather information for ourselves, and offered assistance and consultation, but were met with closed doors—a huge surprise, given our years-long collaborative relationship with previous regulatory councils and staff.

The SBCV Board discussed how we could best serve members. We closely reviewed the public documents made available by the regulator. We met with government representatives to seek input. We met off the record with individuals who acted as regulatory volunteers. We received extensive legal advice. Only then did we act, deciding on a path that offered the greatest hope for change with the least adversarial response. We chose to educate voters in the December-to-February election on who we believed would bring about the necessary change at the CVBC.

The SBCV is not a special interest group, and our views and activities should not be pigeonholed or dismissed. On the rare occasion we become involved in advocacy, it is always for the public good and definitely not an attempt to serve our own interests—as demonstrated when we successfully advocated for the doubling of BC students at the WCVM, and in our current efforts to increase knowledge and funding to assist internationally trained veterinarians in becoming credentialed in Canada and BC.

Every single SBCV member is regulated in their delivery of veterinary medicine to ensure the public and animals are served by a competent and ethical profession. We are united in that goal, and we support that goal in all our work. To say otherwise is simply inaccurate.

We thank the many veterinarians who have reached out and engaged with us. Your input guides us daily and we value our communications with you. WCV

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WCV

WEST COAST VETERINARIAN ISSUE 62

West Coast Veterinarian is the quarterly magazine of the Society of British Columbia Veterinarians (SBCV)

WEST COAST VETERINARIAN
SBCV CVMA-SBCV Chapter

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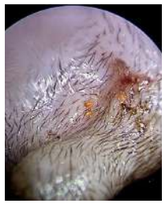
Please note, any visits are by appointment. Thank you for understanding.

As a provincial organization, the SBCV recognizes that its members occupy the traditional and unceded lands and territories of BC's Indigenous Peoples and asks its members to reflect on the places where they reside and work.

24
RETHINKING INTERVERTEBRAL DISC DISEASE MANAGEMENT: THE ROLE OF ACUPUNCTURE IN NEUROLOGICAL RECOVERY

MARCH



MAYA BODNAR, BSc Hons, is a PhD student in the Animal Welfare Program at the University of British Columbia (UBC). She completed a Bachelor of Science with Honours in Applied Animal Biology at UBC. Her research focuses on practical strategies to enhance the welfare of laboratory mice. Before starting her PhD, she conducted research on methods to improve laboratory mouse anesthesia and euthanasia procedures, particularly in settings with limited equipment. Her doctoral research focuses on improving routine handling procedures for laboratory mice, including the use of cage enrichment (e.g., mouse shelters) as handling devices.

TREVOR ENBERG, DVM, DACVECC, is a board-certified Veterinary Criticalist with 33 years of experience as a veterinarian, including 24 years in emergency and critical care. He earned his BSc in biology from the University of Saskatchewan and his DVM from the WCVM. After nine years in general practice, Dr. Enberg specialized in emergency and critical care, completing his residency in 2005. He has worked in both large multidisciplinary specialty hospitals in Vancouver and at a specialty hospital in Southern California. Now part of the Vancouver Animal Emergency & Referral Centre (VAERC), Dr. Enberg is dedicated to providing expert ICU care and collaborating closely with referring veterinarians. His clinical interests include sepsis, trauma, electrolyte imbalances, and complex endocrine emergencies.

LAUREN FRASER, MSc, FFCP, has worked professionally with horses facing behaviour challenges since 2006. She holds an MSc in clinical animal behaviour from the University of Edinburgh's Royal (Dick) School of Veterinary Studies, where her research examined forced "laying down" during horse training. Lauren provides online behaviour consultations, mentors behaviour professionals, and teaches continuing education courses, including one on needle-shyness for veterinary staff.

AMBER GREGG, RVT, is the Executive Director and past President of the BCVTA. She graduated from the Thompson Rivers University veterinary technology program in 2007 and spent eight years in mixed-animal practice before gaining experience in not-for-profit management. She joined the BCVTA board of directors as Vice President in 2020 and served a one-year term as President in 2021, before being appointed Executive Director in 2022. Amber is grateful for everyone who has helped make the BCVTA the strong and healthy organization it is today, and she is proud to work with the board of directors and BCVTA members to continue advancing the veterinary technology profession.

KYLA JOHNSON, BSc, DVM, HBORPT, is currently a small animal locum veterinarian practicing in BC and the Yukon. Upon graduating from the WCVM in 2016, she moved with her family to the beautiful North Okanagan Valley and worked for eight years at a mixed-animal practice. In what she calls her "past life before vet school," she was an outdoor guide (dog sledding, canoeing, hiking) and a musher in dog sled racing. These past experiences influence her current enjoyment of dog-powered sports, now from a veterinarian perspective.

SUE McTAGGART, BSc Hons, DVM, FAVD, attained her BSc in Honours Zoology from UBC and worked as a wildlife biologist on Vancouver Island for a year before acquiring her DVM degree from the WCVM. She attained her Academy of Veterinary Dentistry degree in 2011 and went on to operate a dental referral practice near Victoria International Airport on Vancouver Island. She has taught dental wet-labs and lectured throughout the country for the CVMA, the WCVM, the Veterinary Dental Forum, the European Veterinary Dental Conference as well as in her local area. Dr. McTaggart acquired the first veterinary cone beam computed tomography (CBCT) scanner in Canada in 2019 which has opened many new diagnostic and treatment doors. She has presented webinars and lectures over the past five years on the use of CBCT in dentistry as well as in ophthalmology, oncology and otology. Dr. McTaggart is also the copy editor for the *Journal of Veterinary Dentistry*.

NATALIE YOGUEL, DVM, CVA, CCRV, FFCP, discovered the health benefits of acupuncture and rehabilitation during her veterinary studies at the University of Florida. She later pursued this passion by obtaining an acupuncture certification and completing the canine rehabilitation program at Chi University, where she later taught. Dr. Yoguel's love for acupuncture and rehabilitation stems from the ability to strengthen the human-animal bond, allowing pets and their owners to continue enjoying their favourite activities together for as long as possible. She has a great deal of experience and a special interest in the rehabilitation of neurological cases. Outside of work, Dr. Yoguel loves staying active and spending time outdoors as much as possible, and she also enjoys travelling.

Dear Colleagues and Friends,

As the winter draws to a close, I extend springtime wishes of renewal to you and your family. This time of year offers us a rare and welcome opportunity—a moment to slow down, enjoy the sights, sounds, and smells of new life, and reflect with an eye toward the path ahead.

The past year has been one of continued challenge, growth, and resilience for our profession. Across British Columbia, veterinarians and veterinary teams have shown extraordinary dedication to animal welfare, public health, and the communities we serve. Whether in urban centres, rural practices, emergency clinics, academia, industry, or government, your commitment has not gone unnoticed. I am continually inspired by the compassion, professionalism, and perseverance that define our profession.

This season of reflection invites us to look inward—to consider not only what we have accomplished, but what we have learned. As a Society, we have continued to advocate for veterinarians, engage with regulators and partners, and support initiatives that promote wellness, sustainability, and the long-term strength of our profession. These efforts are only possible because of your engagement, your voices, and your willingness to stand together.

Looking to the year ahead, I am filled with optimism. While challenges remain, so too do opportunities—to strengthen our sense of community, to support one another more intentionally, and continue shaping a profession that is resilient, inclusive, and forward-looking. The SBCV remains committed to listening, advocating, and working on your behalf, and I am excited about what we can achieve together in the coming seasons.

As we enjoy the longer days of spring, I encourage each of you to take time for rest, reflection, and renewal. Our work is meaningful, but it is also demanding, and caring for ourselves and one another is essential to sustaining the care we provide to animals and society.

Thank you for the trust you place in the SBCV and for the important work you do every day. WCV

Fraser Davidson, BVSc, grew up in Vancouver and spent most of his childhood adventuring around the West Coast (mainly the Gulf Islands and Whistler). He is a dual citizen of both Canada and New Zealand, where he trained to become a veterinarian. He graduated in 2005 and spent five years working and travelling around Europe before moving back to Canada in 2010. He and his family moved to Squamish in 2017 and opened Sea to Sky Veterinary Clinic late in 2021. Dr. Davidson has two wonderful children, 11 animals, and an amazing, loving, and supportive wife.

As your CVMA President, it's my pleasure to update you on some of the CVMA's recent initiatives.

ADVOCATING FOR YOU ON PARLIAMENT HILL

Recently, the CVMA represented veterinarians on Parliament Hill to advocate for meaningful change. Over two days, 34 meetings were held with Members of Parliament (MPs) and senior officials from across Canada, including 16 meetings with representatives from the Liberal Party of Canada, 13 with the Conservative Party of Canada, one with the New Democratic Party of Canada, two with the Bloc Québécois, and three with non-partisan civil servants.

Meetings with BC MPs included:

- MP Ernie Klassen (Liberal), South Surrey–White Rock
- MP Gord Johns (NDP), Courtenay–Alberni
- MP Taleeb Noormohamed (Liberal), Vancouver–Granville
- MP Wade Chang (Conservative), Burnaby Central
- MP Tamara Kronis (Conservative), Nanaimo–Ladysmith

During these discussions, CVMA representatives highlighted three critical challenges facing the veterinary profession:

- Severe shortages of essential veterinary medications
- A growing workforce gap among veterinarians and veterinary technicians and technologists
- Increasing mental health pressures across the profession

The messages were well received, with several MPs expressing interest in learning more. As a result, multiple follow-up conversations have already taken place. Many thanks to Marco Veenis, DVM, for representing BC in these meetings, together with members of the CVMA Council. The CVMA will continue strengthening relationships with MPs, ministers, and senior government officials to advance solutions to these important issues.

CVMA PHARMACEUTICAL ACCESS SERIES

A new monthly educational article series, titled "Let's Talk about Drugs in Veterinary Medicine," can now be found in *The Canadian Veterinary Journal*. The series explores key topics including prescribing and dispensing, drug approval, compounding, limited drug access, liability, patient and food safety, and antimicrobial stewardship. These articles will lead up to the CVMA National Issues Forum in June at the 2026 CVMA Convention in Charlottetown, PEI. Each article will be accompanied by a monthly webinar offering deeper insights into the topic. Webinar registration links are being shared by email each month.

THE WORKING MIND 2026 COURSES

Planning your continuing education for the year ahead? Registration is open for the "Working Mind Employee" and "Working Mind Manager" courses, which focus on mental health awareness, resilience, and reducing workplace stigma. Course sections are available on various dates from February through December. To learn more and register, visit the Veterinary Resources page on the CVMA website, www.CanadianVeterinarians.net.

MARCH IS NATIONAL TICK AWARENESS MONTH

National Tick Awareness Month reminds us that while the tick threat is unpredictable, protecting your patients doesn't have to be. For information and resources related to National Tick Awareness Month, visit the Veterinary Resources section of the CVMA website, www.CanadianVeterinarians.net. WCV

Tracy Fisher, DVM, graduated from the WCVM in 1997 and has practiced small animal and exotic medicine in Regina ever since. Dr. Fisher's special interests include avian and exotic animal medicine and soft tissue surgery. She also does small amounts of laboratory animal work for the University of Regina and wildlife rehabilitation work. Although she and her business partner recently sold their practice, Dr. Fisher continues to work there as an associate. Dr. Fisher has served on Saskatchewan Veterinary Medical Association (SVMA) committees and Council, as SVMA President (2004–2005), on the board of Prairie Diagnostic Services, and as President of the Regina Association of Small Animal Practitioners. She is the current SVMA representative for the University of Regina Senate and current Saskatchewan representative on the CVMA Council.

THE SHIFTING LANDSCAPE OF ANIMAL HEALTH IN BRITISH COLUMBIA

BY THERESA BURNS, MSc, PhD, DVM

As we navigate a changing ecological environment, the role of the veterinarians as frontline sentinels has never been more vital. In BC, the Office of the Chief Veterinarian (OCV) is mandated to respond to detections of provincially regulated diseases listed under the Reportable and Notifiable Disease Regulation. While the BC Animal Health Act establishes a legal obligation for all individuals to report these diseases upon suspicion, the province relies specifically on the clinical expertise of veterinary professionals to serve as the primary eyes and ears on the ground.

In this update, we highlight three diseases—Lyme disease, West Nile encephalitis, and leptospirosis—that have recently resurfaced or expanded their reach within our province. These are active examples of why our reporting protocols are essential to our collective ability to detect and manage pathogens that threaten the unique interface between BC's wildlife, livestock, and domestic pets.

LYME DISEASE

While *Ixodes pacificus* and *Ixodes angustus* are endemic tick species in BC, we have recently identified a shift in our provincial surveillance data. Through the BC Centre for Disease Control, an *Ixodes scapularis* (black-legged tick) infected with *Borrelia burgdorferi*, was identified on a dog in the Peace Region. This finding represents a meaningful change in our regional data because the Peace Region is not traditionally considered a Lyme risk area. While it is likely that this single tick was "dropped off" by a migrating bird, it also signals that populations could be emerging in the Northeast, a region previously thought to be outside the ecological niche for this invasive species.

The detection of *I. scapularis* is particularly concerning because its transmission dynamics differ from those of our native species. BC has maintained consistently low Lyme rates (roughly 0.1 per cent of ticks testing positive). One leading theory suggests that our native *I. pacificus* often feeds on lizards, whose blood has anti-borreliacidal properties that clear the infection. In contrast, *I. scapularis*, the primary driver of the Lyme epidemic in Eastern Canada, relies on mice, birds, and deer, which are highly efficient reservoirs. As *I. scapularis* moves westward through Manitoba and possibly Alberta, its potential arrival in BC warrants heightened vigilance.

Despite these vector changes, the diagnostic approach remains consistent, focusing on the high specificity of the C6 peptide using the C6 antibody test. Unlike older whole-cell assays, the C6 peptide is only expressed by the *Borrelia* bacteria during a natural infection. Because this protein is absent in all current Lyme vaccines, a positive result allows us to definitively differentiate a naturally infected dog from one that has simply been vaccinated. However, it is essential to remember that a single positive C6 result indicates lifetime exposure and infection, but not necessarily active clinical disease. A diagnosis of Lyme disease must always be supported by clinical signs such as arthritis or nephritis, and monitoring C6 levels over time can be part of evaluating response to treatment.

WEST NILE VIRUS

West Nile virus is a flavivirus primarily transmitted to wild birds by infected mosquitoes, which serve as the primary reservoir in the environment. These mosquitoes can then transmit the virus to humans, horses, and occasionally other animals. Horses are incidental hosts for West Nile virus, meaning they cannot pass the virus to other animals. While many infections in horses are asymptomatic, the virus can cause encephalitis. This significant risk makes early detection and reporting to the OCV at the time of first suspicion a critical responsibility for every equine practitioner.

In 2025, we identified one confirmed case of West Nile encephalitis in a BC horse, along with one high-likelihood suspect case. This represents the first detection of the virus in BC horses since 2019.

The key for ante-mortem diagnosis in acute neurological cases is the IgM capture ELISA. Because IgM antibodies are the first responders of the immune system, they typically appear within days of infection and remain detectable for only a few months. Their presence in a horse showing clinical signs such as ataxia, muscle fasciculations, or altered mentation provide a definitive diagnosis of an active infection. This distinction is vital because IgG antibodies are long-lived and are commonly induced by standard vaccines or previous exposure. The IgM ELISA allows us to identify a recent natural infection. Because clinical signs often emerge only after the period of high viremia has passed, this antibody-specific approach is often more reliable than PCR for confirming a diagnosis in the field.

LEPTOSPIROSIS

Unlike Lyme disease or West Nile virus, leptospirosis is not currently a provincially regulated disease in BC. However, because it can cause acute and serious disease in previously healthy pets and has zoonotic potential, it remains a high-interest disease. With our significant rainfall, temperate climate, and expanding wildlife–urban interface, *Leptospira interrogans* has become a year-round concern in both urban and rural BC.

PCR testing is the preferred method for detecting active infection because it identifies the organism directly and remains unaffected by vaccination history. For maximum sensitivity, veterinarians should submit blood and urine samples simultaneously. Blood is most effective during the first 7–10 days of infection, while urine becomes the primary diagnostic sample after the first week. However, a negative PCR result does not definitively rule out the disease if the diagnostic window was missed or if antibiotics were administered prior to sampling.

When PCR is inconclusive or unavailable, the microscopic agglutination test (MAT) is the standard approach for serological diagnosis. It provides specificity by identifying the infecting serovar, such as *Icterohaemorrhagiae* or *pomona*, though interpreting these results in vaccinated patients can be challenging. A single high titre is rarely diagnostic on its own. A definitive diagnosis requires demonstrating a four-fold increase in titres between acute and convalescent samples collected two to four weeks apart. This paired testing is essential to distinguish an active clinical infection from baseline titres or vaccine-induced interference.

The evolving distribution of pathogens in BC underscores the necessity of rigorous diagnostic protocols and proactive reporting. Whether we are identifying invasive tick species in the Peace Region or detecting the return of West Nile virus in our equine populations, the data collected in your veterinary practices form the basis of our provincial surveillance.

As a reminder of the modernized reporting process introduced in the last issue (*West Coast Veterinarian* issue 61, "Introducing the New Online Form"), all reports can be submitted through the online form on the OCV website by clicking the "Submit a Report" button. We greatly appreciate the time taken to complete these reports thoroughly, as high-quality data allow us to compile trends that help protect BC's animal populations. We look forward to sharing more trend data with you in the future. As always, any veterinarian with concerns about a case that may involve a regulated disease or syndrome is welcome to contact the OCV team at Chief.Veterinarian@gov.bc.ca for guidance and advice.

To save space, the references for this article are made available on the SBCV'S website at www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine. WCV

Theresa Burns, MSc, PhD, DVM, is the chief veterinarian of BC, and is the former director of CAHSS. She is a veterinary epidemiologist and has experience working as a practising veterinarian in mixed, equine, and small animal practices. She received DVM and MSc degrees from the Western College of Veterinary Medicine and a PhD in epidemiology from the University of Guelph. Over her career, Dr. Burns has had the opportunity to use methods from multiple disciplines to collaborate on complex issues at the interface of human, animal, and environmental health in Canada and in other countries. She is interested in understanding systems and stakeholder perspectives to develop real-world solutions to complex problems.

THE ROAD TO REGULATION: A "MADE IN BC" MODEL

BY AMANDA BARKER, RVT, CVPP

Across Canada, veterinary regulation continues to evolve. For registered veterinary technologists (RVTs) in BC, that evolution is long overdue. While most other provinces have modernized how RVTs are licensed, governed, and integrated into regulatory frameworks, BC continues to operate within a model that no longer reflects the realities of modern veterinary practice or team-based care.

The BCVTA has been working closely with government and veterinary stakeholders to change that. Our goal is clear: statutory regulation for RVTs that strengthens public protection, recognizes professional expertise, and supports sustainable veterinary care in this province. It's important to note that we are not proposing a one-size-fits-all solution. Rather, the BCVTA is exploring a "Made in BC" regulatory model that draws on proven approaches from other provinces while being intentionally tailored to BC's unique veterinary landscape.

LEARNING FROM OTHER PROVINCES

Ontario and Alberta offer well-established, but distinct, regulatory models.

Ontario's framework provides strong statutory recognition for RVTs, including protected titles, a defined scope of practice, and guaranteed representation within the regulatory body. It is considered a modern system that gives RVTs a clear voice and professional standing.

Alberta integrates RVTs within an existing veterinary regulator as a distinct class. This approach is pragmatic and cost-effective, avoiding the complexity of creating a standalone college while still ensuring oversight and accountability.

Both models offer valuable insight, but neither fully meet BC's needs.

A HYBRID APPROACH: DESIGNED FOR BC

The BCVTA's proposed model intentionally blends the strongest elements of both systems while introducing BC-specific safeguards.

At its core, the proposal envisions co-regulation within the College of Veterinarians of BC, with guaranteed statutory RVT representation on the Council and key committees. This ensures RVTs have a meaningful, legislated voice in decisions that affect their profession and the public.

Scope of practice would be clearly defined throughout an authorized activity list set in regulation, supported by a tiered supervision framework. Diagnosis, prescribing, and surgery would remain the responsibility of veterinarians, while RVTs would practice to their education and competencies within defined boundaries. Limited task initiation for low-risk activities, under protocols and training requirements, would support efficiency without compromising safety.

Public protection remains central. The model includes formal complaints and discipline processes, with RVT-specific expertise embedded in decision-making, alongside mandatory continuing education. Title protection for "Registered Veterinary Technologist," "RVT," and related professional titles would be clearly enforceable. This clarity would ensure that certain higher-risk clinical tasks are reserved for individuals with accredited education and regulated accountability, rather than being performed by uncredentialed, on-the-job-trained staff. In turn, this would strengthen consistency, oversight, and public trust in veterinary care.

WHY THIS MATTERS

Regulation is not about expanding or protecting scope just for the sake of expansion.

It is about clarity, accountability, and recognition, benefiting the public, veterinary teams, and the profession as a whole. A "Made in BC" model acknowledges the realities of practice in our province: diverse settings, workforce pressures, and the critical importance of collaboration within veterinary teams. It protects the public while allowing RVTs to contribute fully, appropriately, and transparently to patient care.

The road to regulation is complex, but the destination is clear. By learning from others and building something that truly fits BC, we can modernize veterinary regulation in a way that strengthens our profession and the care we provide, now and into the future. WCV

Amanda Barker, RVT, CVPP, BCVTA President (2025–2027), has spent 17 years in veterinary medicine, working her way from kennel assistant to RVT. She's experienced in general practice, wildlife rehabilitation, ECC, internal medicine, surgery, and anesthesia, and now co-owns and manages ORCA Orthopedic & Referral Centre on Vancouver Island. Certified in veterinary pain management, RECOVER CPR, and Fear Free, Amanda is passionate about mental health advocacy, spicy cats, and elevating care standards. She also runs a CPR training company and, outside of work, enjoys climbing, hiking, gym workouts, and life at home with her husband and three cats, Cougar, Hitch, and Moxie.

MAKING HUMANE EUTHANASIA MORE ACCESSIBLE FOR LABORATORY MICE

BY MAYA BODNAR, BSc

EDITOR'S NOTE:

The original story used the word "killing," which was then substituted with the word "euthanasia." There was considerable debate around what terminology to use in this article, with significant input from the Editorial Committee and experts in laboratory animal care, as well as the Canadian Council on Animal Care (CCAC) *Guidelines on: Euthanasia of Animals Used in Science*, including the soon to be released update. The CCAC is moving toward the use of "killing" as the general term and "euthanasia" as a type of killing. Euthanasia implies ending an animal's life to alleviate suffering; however, in laboratory settings it is often performed for other reasons (such as at the end of an experiment), and the methods used can still cause stress. In many cases, veterinarians do not like the term "killing," and the magazine wishes to be sensitive to readers while respecting accuracy and the author's voice. In the final analysis, the author chose to use "euthanasia," and the editor agreed.

"…EUTHANASIA IS AN ALMOST CERTAIN FATE FOR LABORATORY ANIMALS AND IS USUALLY CARRIED OUT FOR REASONS UNRELATED TO THE HEALTH OR QUALITY OF LIFE…"

Deciding to end an animal's life is one of the most challenging responsibilities in animal care. Animal care professionals must often make end-of-life decisions and perform euthanasia—a practice intended to provide a "good death." For companion animals, euthanasia is often carried out for humane reasons, such as alleviating suffering associated with illness. In contrast, euthanasia is an almost certain fate for laboratory animals and is usually carried out for reasons unrelated to the health or quality of life of the animal. For example, virtually all mice involved in scientific research are euthanized at the end of an experiment.

Canadian guidelines state that laboratory mouse euthanasia should minimize distress, be painless, and induce death quickly. In practice, animal care staff consider the impact on the animal, the needs of the experiment, and human safety. The most common method of euthanasia for laboratory mice is exposure to carbon dioxide (CO_2), as it is affordable, widely available, and does not require highly specialized training. However, CO_2 exposure is highly distressing for mice. For this reason, it is recommended that animals be anesthetized with isoflurane before exposure to CO_2. Isoflurane is usually delivered using a vaporizer, but not all facilities have access to this equipment, limiting their ability to induce anesthesia before euthanasia.

A practical alternative for administering isoflurane is the "drop" method, which involves delivering liquid anesthetic directly into the chamber by dispensing it onto a cotton ball or pad. This method is commonly used to anesthetize wildlife in field settings, but it can also be used for laboratory mice. Previous work from the Animal Welfare Program has shown that high chamber concentrations of isoflurane (7.5 per cent) can be reached very quickly; however, these concentrations also appear to be aversive (i.e., unpleasant) to mice, as indicated by attempts to avoid isoflurane when administered using the drop method. Therefore, we recently assessed whether mice can be anesthetized using lower isoflurane concentrations delivered via the drop method and identified which concentrations within this range minimize aversion.

IMPROVING MOUSE ISOFLURANE ANESTHESIA USING THE DROP METHOD

In our first study, mice were anesthetized using the drop method with a lower range of isoflurane concentrations (2.6–5.6 per cent) and monitored for progression of anesthetic depth. All mice achieved a surgical plane of anesthesia, although this occurred more quickly at higher concentrations. In a follow-up study, we assessed mouse aversion to these concentrations. Using a box with a light and dark chamber, aversion was measured by pairing isoflurane exposure with the dark chamber, which mice naturally prefer, and then measuring whether mice later avoided the dark chamber after repeated exposure. We found that aversion increased with isoflurane concentration, such that lower concentrations (2.6–4.1 per cent) are least aversive.

KEY TAKEAWAYS AND THE ROLE OF VETERINARIANS

Overall, our results demonstrate that the drop method is effective at anesthetizing mice at concentrations as low as 2.6 per cent, and that concentrations between 2.6 and 4.1 per cent can be used for more humane laboratory mouse anesthesia. Ultimately, this work highlights that even facilities without specialized equipment can move toward more humane euthanasia. Facility veterinarians are well positioned to help laboratories navigate challenges that may arise in the following three key areas of implementation.

SUPPORTING MOUSE WELFARE: Facility veterinarians can collaborate with users to ensure that the drop method is performed in a manner that minimizes potential negative effects (such as contact with liquid isoflurane, aversion to high concentrations or repeated exposures, or inadequate anesthetic depth) on the mouse. Considerations include induction chamber design (e.g., preventing mice from coming into direct contact with liquid isoflurane), accurate dosing, and monitoring anesthetic depth. Veterinarians can also help identify and manage unexpected responses during induction, such as mice who are unable to reach a surgical plane of anesthesia.

PROTECTING THE SAFETY OF PERSONNEL: Veterinary expertise can help identify potential safety concerns by assessing whether the induction setup follows institutional or facility guidelines and whether users have access to waste gas scavenging and appropriate personal protective equipment.

GUIDING METHOD SELECTION: The drop method may not be suitable for all facilities or procedures, and veterinarians can play an important role in determining when the drop method is appropriate and when more specialized equipment is needed. For example, the drop method does not provide precise control over anesthetic depth and, therefore, it is better suited for brief, non-survival procedures.

In all euthanasia contexts, it is our responsibility to ensure a humane death for the animals in our care.

The author wishes to thank her co-authors for their valuable contributions: Joanna Makowska, Anna Ratuski, Courtney Boyd, Cathy Schuppli, and Dan Weary. WCV

THE FACES OF THE SBCV

BY LUANA ALVES, BCom, PgD, MSc, MBA

Do you remember being a little child and having adults ask, "What do you want to be when you grow up?" I always answered loudly: "Veterinarian!" Yes, I have always loved animals.

Time passes, we grow up, and our dreams change. In my case, caring for animals gave way to working for organizations and coordinating events. Life happened, and many (many, many) years later—after moving to Canada and finishing my MBA—I saw a job posting that asked, "Do you have a love for animals? Want to work with the professionals responsible for animal health and welfare?" My childhood dream and my current passion in the same job—I didn't think twice, and I applied. Soon after, I had a job offer in hand and lots of enthusiasm to start this new chapter at the SBCV.

"…EACH OF US FROM A DIFFERENT COUNTRY, EACH WITH A UNIQUE JOURNEY, AND ALL SHARING A LOVE FOR PETS, COFFEE, CHOCOLATE, AND MANGOS."

What I hadn't realized was that my childhood dream had been influencing who I would become and had led me here, to a team that dedicates its time to those whose lives are spent caring for animals. We are a small and multicultural team of four, each of us from a different country, each with a unique journey, and all sharing a love for pets, coffee, chocolate, and mangos.

Our differences make the SBCV special. They shape how we communicate, collaborate, and support each other—bringing different perspectives to problem-solving, creativity to planning, and empathy to supporting our members.

Working together in such a diverse office is a daily exercise in respect and learning. We learn from each other's culture, experiences, and ways of thinking—a typical afternoon in our office is like travelling the world in just a few hours. We've learned that someone from South Africa can cheer for the Brazilian soccer team, spicy food can always be spicier, and it's okay to eat someone else's salad if they don't like it. Our small team achieves big things, driven by our multicultural experiences, making us the voices behind the voice of BC veterinarians.

Now, looking back at that little child who dreamed of being a veterinarian, I realize that my desire to care never left—it simply found a different path. Now, instead of caring for the animals, I support the veterinarians who dedicate their lives to them. WCV

Luana Alves, BCom, PgD, MSc, MBA, is the SBCV Office Coordinator. She likes people and animals, speaks a lot, enjoys hearing stories, and loves seeing people achieve their dreams. Luana holds a bachelor's degree in communication and public relations, a postgraduate degree in the Portuguese language, and a master's in the science of language and culture, all from Brazilian universities. After 14 years working in a university as an events coordinator, she moved to Canada in 2023 to pursue an MBA. She now lives in the Lower Mainland of BC with her husband, son, two grumpy Brazilian cats, and a sassy Mexican Chihuahua.

FROM AGSAFE

PPE— THE FINAL LAYER OF DEFENCE IN MINIMIZING INJURIES FROM DOG BITES

BY STEPHANIE SWAIN

Veterinary professionals face a unique combination of physical, biological, and behavioural hazards every day. Among the most common and potentially serious risks are dog bites, which can occur during examinations, restraint, treatment, or emergency care. While the most effective bite-prevention strategies focus on understanding animal behaviour, improving handling techniques, and designing safer work environments, personal protective equipment (PPE) remains an essential final layer of defence.

WHY DOG BITE PROTECTION MATTERS IN VETERINARY WORK

WorkSafeBC notes that animals can "kick and bite… causing serious—and sometimes fatal—injuries" and emphasizes that PPE should be used alongside other controls to reduce risk.

Anyone working with or around animals needs a solid understanding of animal behaviour. Employers should develop a comprehensive health and safety plan that includes orientation, education, and hands-on training in safe work practices. Ongoing supervision is also essential to protect workers and reinforce safe procedures. Employers must continually assess and control the hazards their teams may encounter.

When choosing risk controls, start by considering the following measures, listed in order of effectiveness:

- Substitution: The most effective control. This involves eliminating a hazard by replacing it with a safer automated or mechanical process.
- Engineering controls: Physical modifications to equipment, facilities, or processes that reduce exposure to hazards. For example, animal enclosures should be designed to reduce the risk of injury to workers and/or provide workers with adequate space to escape in an emergency.
- Administrative controls: Policies and written safe work procedures that minimize exposure to hazards, such as worker training, supervision, and limiting the amount of time workers are exposed to hazards.
- Personal protective equipment: Equipment worn by workers to reduce the impact of hazards when other controls cannot fully eliminate the risk.

PPE AS THE FINAL LAYER

For veterinary teams, PPE is the final layer in a comprehensive safety strategy. PPE reduces injury severity when all other controls fail—exactly when veterinary workers need protection most. Cut-resistant gloves, protective arm sleeves, bite-resistant jackets, and other standard PPE can help prevent or reduce dog bite injuries.

Cut-resistant gloves made from materials such as HPPE (high-performance polyethylene), Kevlar, or stainless-steel mesh can protect hands from shallow to moderate bite pressure, lacerations from teeth, and scratches during restraint. While they may reduce dexterity, modern designs offer improved flexibility and grip.

Veterinary-specific protective sleeves are designed to cover the forearm, helping prevent scratches and bite-related damage. For higher-risk scenarios—such as aggressive dogs, emergency medicine, or animal control—bite-resistant jackets can provide extended coverage of arms and torso. While these are not everyday clinic wear, they are invaluable when the risk is elevated.

While general PPE, such as long-sleeve lab coats and scrubs made from thicker fabrics, is not bite-proof, it can reduce vulnerability. Non-slip footwear helps maintain balance during restraint, and face shields or goggles can protect against bites directed toward the face.

HOW PPE FITS INTO A COMPREHENSIVE BITE-PREVENTION STRATEGY

WorkSafeBC emphasizes that PPE is the least effective control and must be combined with other strategies such as engineering controls, training, and safe work procedures. In veterinary settings, dog bites are a persistent hazard. PPE—such as cut-resistant gloves, protective sleeves, and reinforced clothing—plays an important role in reducing injury severity and keeping veterinary teams safe. When combined with strong training, thoughtful spatial design, and behaviour-based handling, PPE helps create a safer, more confident workplace for everyone.

AgSafe's Certificate of Recognition (COR) program encourages workplaces to assess risks before injuries happen. COR is a formal acknowledgment of health and safety management systems that meet industry standards. For more information about AgSafe, visit www.AgSafeBC.ca. WCV

PHOTO SUPPLIED BY STEPHANIE SWAIN

Stephanie Swain is the Certificate of Recognition (COR) Program Manager at AgSafe BC. She grew up in the Fraser Valley, surrounded by the diverse agriculture of the area. Stephanie has a background in Marketing and Hospitality Management from Douglas College, which led her to Conference Service Management. Over the years, she coordinated numerous health and safety conferences and events, which made her familiar with various associations like AgSafe BC. In 2015, Stephanie joined the team at AgSafe BC as the COR Program Administrator. While maintaining and helping to develop the COR Program, she has really enjoyed the interaction with all the different sectors of the agricultural industry and learns something new about health and safety every day.

HEARING TESTS FOR DOGS... REALLY?

BY SUE MCTAGGART, BSc, DVM, FAVD

Since the story of a young dog receiving major surgery for an ear polyp inspired the recent formation of a Veterinary Ear Nose Throat group (ENTvets), as well as the past issue's "Rethinking Ear Disease" article (*West Coast Veterinarian* issue 61), more innovations to gently help dogs with hearing loss have come to light.

The story of a Staffordshire Bull Terrier, whom we will call "Pittie," opened the door for me to the idea that hearing tests can benefit dogs and that there can be treatment once the affected location in the hearing pathway is identified. Pittie had developed a phobia of certain sounds, such as squeaking shoes, and was having uncontrollable panic attacks—a condition known as hyperacusis. She had visited several veterinarians and specialists who tried a number of treatments, all of which were to no avail. Her owners, on the verge of euthanasia, tried one last desperate visit to a veterinarian in California who had spent countless hours learning about hearing from human ENT specialists and had equipped his operatory with camera magnification equipment and endoscopes to properly examine the ear.

Dr. Munir Kureshi noticed that Pittie's eardrum looked abnormal, and a cone beam computed tomography (CBCT) scan revealed a cholesteatoma in the middle ear. After surgery to gently remove the growth through the tympanic membrane, Pittie returned to a happy, normal life, with no further panic triggered by sound.

Proper equipment with magnification can greatly increase diagnostic accuracy and improve the ability to treat ear disease. Tiny parasites such as "chigger" mites, as seen in Image 1, can be identified as the cause of frantic ear scratching in dogs and cats. A pyogenic granuloma in a cat's ear, shown in Image 2, can be properly identified and treated using magnification and delicate endoscopes. The CBCT image of this cat's tympanic bullae (Image 3) shows the bony changes associated with one-sided pyogenic granuloma.

According to Dr. Kureshi, a proper ear exam should start from the external meatus, noting structures every centimeter along the way to the tympanic membrane. The eardrum itself is transparent, so clinicians can often see into the middle ear and detect abnormalities. Hearing loss can occur anywhere along the pathway—from the eardrum to the ossicular chain, the oval window, the cochlea with its fluids and sensory hairs, through to the nerve and, finally, the brain. It is therefore important to determine where in this chain the hearing loss has occurred. For example, the eardrum may be plugged with wax, infection, or a growth, preventing it from vibrating normally.

The ossicular chain consists of three tiny bones—the malleus, incus, and stapes—that are linked by two microscopic joints. The joint between malleus and incus is called the incudomalleolar joint. The joint between the incus (anvil) and the stapes (stirrup), which is the smallest synovial joint in the body, is called the incudostapedial joint. This ball-and-socket joint transfers sound vibrations between the two ossicles in the middle ear. The incus has a small knob-like projection that articulates with the head of the stapes. Together, the three tiny bones of the ossicular chain and their two joints link the eardrum to the inner ear's oval window.

IMAGE 1: Chiggers (or scrub-itch mites) in the ear canal of a dog. Watch the video at www.canadianveterinarians.net/media/ie5hcdjr/dr-sue-mctaggart-s-article-video-of-chiggers.mp4.

PHOTOS AND VIDEO SUPPLIED BY MUNIR KURESHI

"HER OWNERS, ON THE VERGE OF EUTHANASIA, TRIED ONE LAST DESPERATE VISIT TO A VETERINARIAN..."

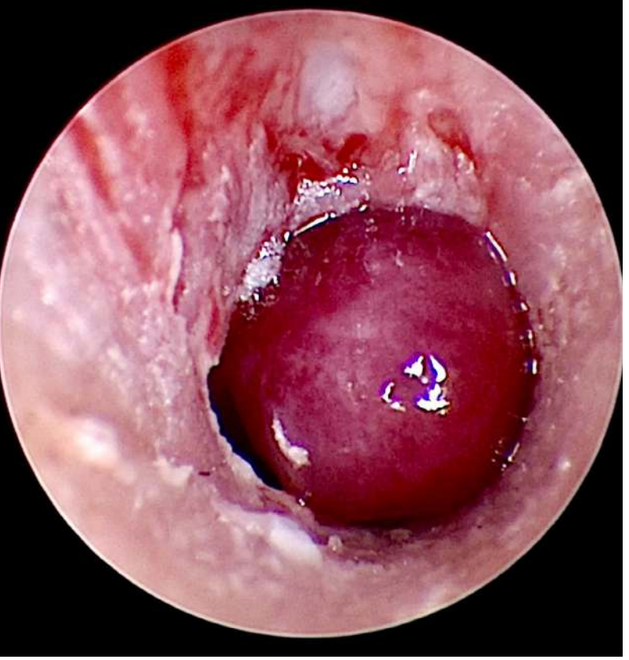


IMAGE 2: Pyogenic granuloma in the external ear canal of a cat.

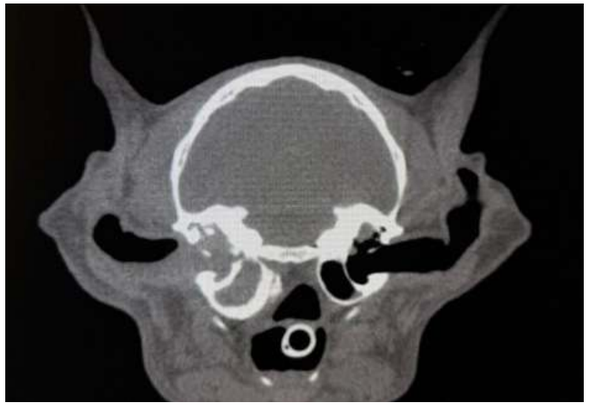


IMAGE 3: CBCT image of the tympanic bullas in a cat with pyogenic granuloma.

detect bone-conducted sound. If the test shows that the brain can detect this, there are several ways a dog can be helped. The following devices are not yet commercially available due to limited demand, but have been developed:

- A magnetized device that can be implanted under the skin against the skull. An external sensor is secured in place by the magnet and can be reattached if the dog scratches it off.
- A device housed in the dog's collar that vibrates in response to sound waves created by spoken words. Dogs can be taught to "sit" or "stay" when those words are spoken.
- A ThunderShirt-type vest that vibrates with voice commands.
- A whistle with a louder sound than the human voice (which typically emits at 50–60 decibels) can be used if the BAER test shows that the dog can hear at higher volumes.

There is considerable start-up cost to become capable of diagnosing and treating ear disease. Dermatologists are generally consulted when ear disease becomes apparent, but not all have the equipment or training to deal with complex ear conditions. An endoscope can cost $10,000, and proper training to use it requires an additional $40,000.

The field of veterinary medicine has long faced a gap in knowledge and competence when it comes to diagnosing and treating ear disease in animals. Only a handful of dedicated and passionate colleagues have invested the time and considerable expense required to develop expertise in this area. We are fortunate that there is now an opportunity to learn from them.

This is where the new ENTvets group comes in. Its first meeting will be held at the University of Victoria on June 13 and 14, 2026, and Dr. Kureshi, among others, will be there to share his considerable knowledge and experience. The program will include a full day of lectures at a reasonable cost, designed to help raise the standard of ear diagnosis and treatment. A limited number of hands-on training sessions will also be available for those who wish to go further. Information about the June ENTvets seminar is available on the Dean Park Pet Hospital website, www.deanparkpet.com/seminars/general-seminars. WCV

"BELIEVE IT OR NOT, THESE JOINTS HAVE THE SAME COMPONENTS AS THE KNEE JOINT AND CAN DEVELOP ARTHRITIS IN THE SAME WAY."

Believe it or not, these joints have the same components as the knee joint and can develop arthritis in the same way. An ossicular chain rendered motionless by arthritis cannot be surgically corrected; in humans, the incus and stapes are removed and replaced with a prosthesis. An ossicular chain joint immobilized by granulation tissue, however, can be treated. After examining the CBCT scan of the middle ear, a skilled and trained clinician can remove granulation tissue from around the joint to restore movement and, consequently, hearing. With imaging and magnification, interference from fluids or tumours can also be identified.

There is now a hearing test for dogs that can identify whether hearing loss is limited to one ear, so the owners can know to protect the other ear. This brainstem auditory evoked response (BAER) hearing test checks whether the brain can

RETHINKING INTERVERTEBRAL DISC DISEASE MANAGEMENT: THE ROLE OF ACUPUNCTURE IN NEUROLOGICAL RECOVERY

BY NATALIE YOGUEL, DVM, CVA, CCRV, FFCP

It's a scenario familiar to many small-animal practitioners: a client rushes in with a dog—often a chondrodystrophic breed—that was ambulatory that morning but is now dragging its hind limbs. When the diagnosis, whether presumptive or confirmed, is intervertebral disc disease (IVDD), pet parents are understandably frightened and immediately focused on quality of life and long-term prognosis.

The clinical presentation of IVDD spans a wide spectrum, from spinal hyperesthesia to complete paraplegia, requiring timely and appropriate intervention. Surgical decompression remains the treatment of choice for many acute, severe disc extrusions, while conservative management with restricted activity and medical therapy is commonly used for less severe cases. Despite appropriate treatment, however, many patients experience incomplete neurologic recovery, recurrent episodes, chronic pain, or persistent functional deficits.

These realities may encourage clinicians to consider evidence-based integrative therapies that support neurologic recovery, improve comfort, and enhance overall quality of life. One modality increasingly discussed, but still underutilized, is acupuncture.

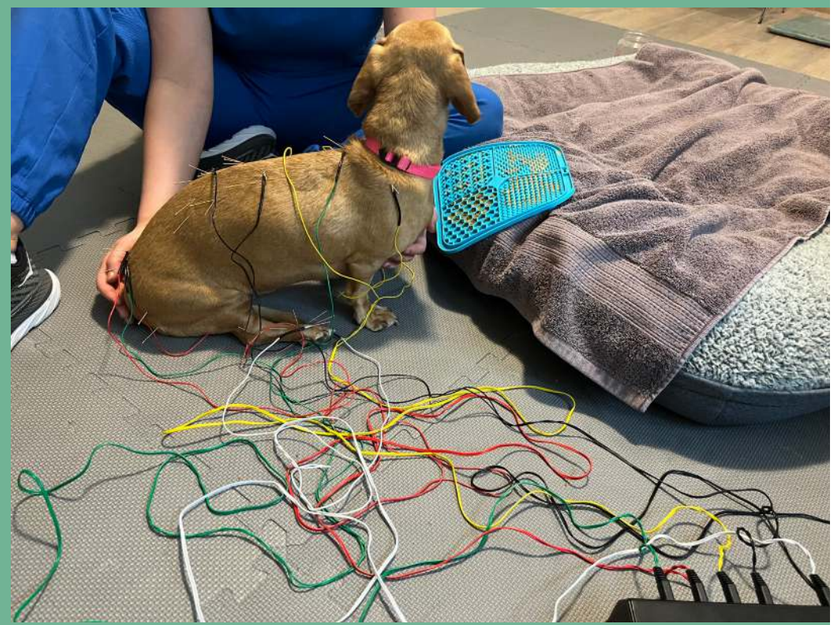
For many veterinarians in North America, acupuncture has historically been viewed with skepticism. Yet contemporary research has increasingly reframed acupuncture not as a mystical or purely traditional practice, but as a neuromodulatory intervention grounded in neurophysiology. This article explores what the current evidence tells us about acupuncture in neurologic disease—particularly IVDD—examines proposed mechanisms of action through a modern scientific lens, and offers a practical, evidence-aligned framework for its clinical integration.

PHOTOS AND VIDEOS SUPPLIED BY NATALIE YOGUEL

Dry needle (acupuncture with needles only) is performed with low-stress handling techniques.

A patient receiving acupuncture treatment.

“...ACUPUNCTURE IS ASSOCIATED WITH A LOW INCIDENCE OF ADVERSE EFFECTS.”



The patient, Vienna from the clinical illustration, receiving electroacupuncture with low-stress handling techniques.

ACUPUNCTURE AND EVIDENCE-BASED MEDICINE

Evidence-based medicine integrates the best available research with clinical expertise and patient (or client) values. Acupuncture’s acceptance into Western evidence-based medicine has been slow and, at times, contentious—not necessarily due to lack of biologic plausibility, but because of historical, cultural, and methodological challenges.

Originating more than 2,000 years ago, acupuncture was first described using the medical language and observational frameworks of its time. Concepts such as Qi and meridians represented early attempts to explain physiologic processes, but these ideas do not translate easily into Western biomedical paradigms. In veterinary medicine, persistent barriers—including limited research funding, smaller patient populations, ethical constraints, and difficulty standardizing neurologic outcome measures—have further complicated rigorous study design. These challenges are particularly relevant in conditions like IVDD, where recovery is often gradual, variable, and influenced by multiple concurrent therapies. Importantly, these limitations reflect the complexity of studying acupuncture, not an absence of biologic effect.

Over the last several decades, the scientific landscape has evolved considerably:

- **1997:** A landmark NIH Consensus Statement concluded that there was compelling evidence for acupuncture’s efficacy in certain pain conditions and acknowledged its capacity to modulate neurologic, immune, and neuroendocrine function.
- **2006:** A systematic review in the Journal of Veterinary Internal Medicine described "encouraging data" for several conditions but emphasized the need for more rigorous trials before firm clinical recommendations could be made.
- **2017–2022:** The volume and quality of acupuncture research increased substantially. A 2022 overview of meta-analyses encompassing 862 studies across 184 conditions identified strong evidence for benefit in chronic pain, low-back pain, and osteoarthritis, with potential benefit in dozens of additional conditions.

While this body of work does not eliminate the need for skepticism or careful interpretation, it does make it increasingly difficult to dismiss acupuncture outright as clinically irrelevant.

WHAT DOES THE EVIDENCE SAY ABOUT ACUPUNCTURE AND IVDD?

When evaluated through a strict evidence-based medicine lens, the evidence for acupuncture in IVDD is best described as moderate and adjunctive. High-quality randomized, blinded, placebo-controlled trials in veterinary neurology remain limited. However, several controlled studies and recent critical evidence summaries suggest that acupuncture—particularly electroacupuncture—may improve functional recovery when used alongside conventional medical or surgical management, especially in dogs with thoracolumbar IVDD who retain deep pain perception.

A 2024 knowledge summary published in Veterinary Evidence critically appraised the available literature and concluded that there is moderate evidence that acupuncture, when used as an adjunct to standard medical management, can increase the likelihood of ambulation and may shorten time to functional recovery in select IVDD cases. Importantly, the same review emphasized that current evidence does not support acupuncture as a standalone therapy, nor does it support its efficacy across all neurologic grades, particularly in dogs lacking deep pain sensation.

Retrospective controlled studies and prospective rehabilitation trials similarly suggest improved outcomes when acupuncture is incorporated into multimodal treatment plans, though these studies are limited by sample size, heterogeneity of protocols, and inherent challenges of blinding and placebo control in physical interventions.

HOW ACUPUNCTURE WORKS: A NEUROPHYSIOLOGIC PERSPECTIVE

From a modern biomedical standpoint, acupuncture can be understood as a controlled peripheral stimulus that initiates a cascade of neurophysiologic responses at local, spinal, and central levels.

PAIN MODULATION AT MULTIPLE LEVELS

- **Local (transduction):** Needle insertion influences local inflammatory mediators, including prostaglandins and cytokines, and stimulates the release of adenosine, a molecule with well-documented anti-nociceptive properties.
- **Peripheral and spinal (transmission):** Preferential activation of non-nociceptive A-beta fibers can inhibit pain transmission at the dorsal horn via gate-control mechanisms.
- **Central (modulation):** Acupuncture has been shown to stimulate the release of endogenous opioids (β-endorphins, enkephalins), serotonin, and norepinephrine, enhancing descending inhibitory pathways.
- **Cortical (perception):** Functional imaging studies demonstrate altered activity in pain-processing regions such as the periaqueductal gray, hypothalamus, and limbic system, reflecting both sensory and affective modulation of pain.

BEYOND ANALGESIA

In addition to pain control, acupuncture may influence muscle tone, regional blood flow, autonomic balance, and systemic stress responses via effects on the hypothalamic-pituitary-adrenal axis. These mechanisms are particularly relevant in IVDD, where paraspinal muscle spasm, neuroinflammation, and stress-related physiologic changes may impede recovery.

CLINICAL INTEGRATION: IVDD IN PRACTICE SAFETY CONSIDERATIONS

When performed by appropriately trained veterinarians, acupuncture is associated with a low incidence of adverse effects. Contraindications and precautions include avoidance of needling through infected tissue or directly over neoplastic lesions; cautious use of electroacupuncture in patients with seizure disorders or implanted electrical devices (e.g., cardiac pacemakers); and adherence to pregnancy-specific point restrictions.

CLINICAL ILLUSTRATION

Vienna, a six-year-old spayed female Dachshund, presented with non-ambulatory paraparesis consistent with a T3-L3 myelopathy. Despite appropriate medical management and strict confinement, she experienced neurologic deterioration and increasing pain.

A multimodal rehabilitation plan was instituted, incorporating acupuncture alongside physical rehabilitation and pharmacologic management. At her recheck visit five days later, Vienna had regained ambulation, and over the following weeks, she continued to improve, ultimately returning to normal function.

While a single case cannot establish efficacy, cases like Vienna’s are consistent with published findings suggesting that acupuncture may support neurologic recovery when integrated into comprehensive care, and they highlight why many clinicians choose to refer IVDD patients for adjunctive acupuncture.

Watch Vienna’s rehabilitation in the following videos:

1. **Initial presentation with non-ambulatory paraparesis:** www.canadianveterinarians.net/media/v0ghdqvp/non-ambulatory-paraparesis-presentation.mp4
2. **At follow-up, just five days later:** www.canadianveterinarians.net/media/ngvp5tna/non-ambulatory-paraparesis-5days-later.mp4
3. **Approximately three months after the start of therapy with acupuncture and rehabilitation:** www.canadianveterinarians.net/media/hdihcltu/non-ambulatory-paraparesis-3months-later.mp4

CONCLUSION

A growing body of veterinary and translational research supports acupuncture as a safe, biologically plausible, and clinically relevant adjunctive therapy for IVDD, with particular benefit for pain control and functional recovery when integrated into multimodal management.

For general practitioners managing IVDD, incorporating acupuncture, either through referral or personal training, represents an opportunity to expand multimodal care options in a way that aligns with evidence-based medicine rather than opposing it.

To save space, the references for this article are made available on the SBCV’s website at www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine. WCV

AEROMONAS HYDROPHILA AND SEPTIC SHOCK IN A DOG: A CASE REPORT

BY TREVOR ENBERG, DVM, DACVECC

Phenway, a two-year-old intact female Husky mix, presented to the emergency service at VCA Vancouver Animal Emergency & Referral Centre in July 2025. Prior to presentation at our hospital, she had been seen by her primary care veterinarian on July 24 for a 24-hour history of anorexia, vomiting, and diarrhea. She was treated with subcutaneous fluids and maropitant, and sent home with metronidazole, Cerenia tablets, and a probiotic. She remained lethargic, and some bruising was noted on her abdomen.

She was first evaluated by our emergency service on July 26. She was noted to have what appeared to be ecchymoses on the right side of her ventral caudal abdomen. Vital signs were unremarkable, and she seemed comfortable. The attending emergency room veterinarian was concerned about possible thrombocytopenia or a coagulopathy. A complete blood count (CBC) showed mild lymphopenia with adequate platelets. Chemistry showed a slight decrease in total proteins at 51 g/L (normal 55–76 g/L). Prothrombin time (PT) was insignificantly prolonged at 20.2 seconds (normal 14–19 seconds), and activated partial thromboplastin time (aPTT) was also considered to have an insignificant prolongation at 116.4 seconds (normal 75–105 seconds). A SNAP 4DX test was negative for Lyme disease (*Borrelia*), heartworm disease (*Dirofilaria immitis*), *Ehrlichia*, and *Anaplasma*.

An unknown trauma was considered a possibility. She was treated with gabapentin and Yunnan Baiyao. Her history included playing with another dog at an off-leash park on July 24, but no specific trauma was reported. On the same day, she had also been swimming in the Fraser River at Fraser River Park in Vancouver. Prior to the onset of clinical signs, she was a healthy dog and was not receiving any medications.

On July 28, she presented with worsened bruising on the ventral abdomen. She was found to be dull and dehydrated. The area on the ventral abdomen had developed some eschar formation, which had spread from the ventral abdomen to the medial hind legs, especially the right hind leg. She was very painful on palpation. From the site of the eschar, there was a scant purulent discharge with a foul odour, which was obtained for culture and sensitivity. Her blood pressure was low (hypotension) and she had a fever, with a mildly increased respiratory rate and effort and pale mucous membranes. Her heart rate was elevated. Venous blood gas showed a metabolic acidosis and slightly low sodium. Other electrolytes, renal parameters, lactate, and glucose were normal. Phenway was considered to be in decompensated septic shock.

She received intravenous crystalloid fluid boluses and was then started on norepinephrine as a pressor, which improved her hypotension. She was given maropitant, ampicillin, and clindamycin intravenously, and started on a continuous infusion of fentanyl. The affected skin was shaved and cleansed with a dilute chlorhexidine solution, and a urinary catheter was placed because she was recumbent.

Full blood work was submitted to a reference laboratory. The CBC showed a stress lymphopenia with a normal neutrophil count but increased band neutrophils (1.19 x 109/L, 12 per cent), indicating acute inflammation with a left shift. Toxic change was noticed on slide review. Platelets were slightly low on the automated count but were adequate on slide review. Chemistry confirmed mild hyponatremia, as well as mild hypoalbuminemia and elevated ALP and ALT enzymes.

Overnight, pressor support was weaned while maintaining normal blood pressure. Phenway's respiratory rate and effort improved, serial blood sugar monitoring was normal, and her temperature improved, then normalized. She was able to walk. The cutaneous lesions showed declaration of necrotic skin. Her comfort improved on the fentanyl infusion after adding ketamine and lidocaine. The metabolic acidosis and hyponatremia resolved.

Diagnostic considerations at that time included necrotizing fasciitis (caused by β-hemolytic Group G *Streptococcus canis*), infection of an unidentified bite wound, an insect bite reaction (e.g., brown recluse spider, black widow spider), or cutaneous vasculitis secondary to metronidazole. A repeat CBC was performed the afternoon of July 29. Results showed that a left shift remained, with moderate toxic change and a normal neutrophil count; however, her band neutrophils had decreased to 7 per cent (from 1.19 x 109/L to 0.73 x 109/L). Automated platelet count was decreased, and there were no significant clumps, which suggested a moderate thrombocytopenia.

Over the next two days, we weaned intravenous support and transitioned to Clavamox and clindamycin. A fentanyl patch was placed, and Phenway was weaned from intravenous fentanyl with the addition of amantadine and gabapentin. Plans were made to discharge her to home care with daily wound evaluation and future surgical debridement and closure.

PHOTOS SUPPLIED BY TREVOR ENBERG

IMAGE 1: Sweet Phenway was so tolerant of her management.

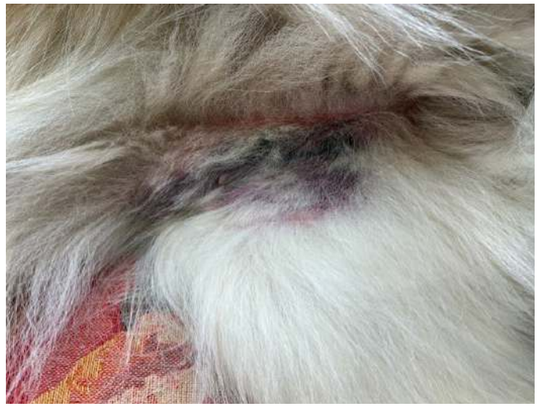


IMAGE 2: Presentation on July 26.

IMAGE 3: Presentation on July 28.

During Phenway's discharge appointment on July 30, we received her culture results. Gram stain revealed gram-negative rods, and the culture was a heavy growth of *Aeromonas hydrophila/punctata* (*caviae*). It was resistant to amoxicillin/clavulanic acid; clindamycin was not included in the sensitivity panel. Anaerobic culture showed no growth. The bacteria showed sensitivity to enrofloxacin, so she was started on oral Baytril after an intravenous injection of enrofloxacin.

Over the following six weeks, she was managed by the surgical service for outpatient wound-management, with frequent bandage changes. Her wounds healed completely by second intention with no surgery, only intermittent debridement.

Terrestrial bacteria of the genus *Aeromonas* are ubiquitous and known to cause infections in fish and other cold-blooded animals. The bacteria tend to target immunocompromised animals and humans, resulting in wound infections, cellulitis, septicemia, and urinary tract infections. Species of this genus are commonly found in water (both polluted and unpolluted), particularly during warmer seasons. It is suspected that Phenway was exposed to this organism while playing in the water. She may have been predisposed by potentially having a wound from rough play with the other dog at the off-leash park. There was no history to suggest that she was immunocompromised.

A review of veterinary literature reveals only three reported cases of *Aeromonas* infections in dogs. One was similar to Phenway's case, with *Aeromonas* causing a severe, acute cellulitis and sepsis in a dog receiving immunosuppressive therapy. Another described a fatal disease mimicking leptospirosis caused by *Aeromonas hydrophila*. An older report from 1973 documented *A. hydrophila* septicemia in a dog. An additional article examined the role of *A. hydrophila* in cutaneous and renal glomerular vasculopathy, also known as "Alabama rot," in dogs.

Various sets of systemic inflammatory response syndrome (SIRS) criteria have been established in the past. According to every set, Phenway met at least two criteria, including elevated temperature, elevated heart rate, elevated respiratory rate, and more than 3 per cent band neutrophils. Although there is no prognostic value in SIRS criteria, patients who meet these criteria and have an identified source of infection are considered septic.

The quick sequential organ failure assessment score (qSOFA), adapted from the human SOFA score, uses criteria that include mental status, respiratory rate, and blood pressure as criteria. Patients with a qSOFA of 2 or greater are more likely to die or be euthanized, and survivor and non-survivor qSOFA scores differ significantly across all categories. Phenway easily scored 3, with a qSOFA evaluation suggesting severe illness and increased likelihood of morbidity and mortality.

In 2016, septic shock in human medicine was re-categorized as a subset of sepsis characterized by persistent hypotension requiring vasopressors to maintain a mean arterial pressure (MAP) greater than 65 mmHg. Clinically, septic shock is recognized by the need for vasopressors to maintain normotension or by a serum lactate greater than 2 mmol/L in patients without hypovolemia. Phenway clearly met the criteria for septic shock.

A "bundle of care" refers to a group of therapies for managing septic patients that, when implemented together, results in better outcomes than if each therapy had been implemented individually. In human medicine, bundles have proven efficacious in reducing sepsis mortality. The five bundle directives that should be performed within one hour of presentation to the emergency department are:

1. Measure serum lactate levels.
2. Obtain appropriate cultures prior to antibiotic administration
3. Administer broad-spectrum antibiotic therapy
4. Treat hypotension and/or elevated lactate with fluids
5. Administer vasopressors for hypotension that does not respond to initial fluid resuscitation, to maintain MAP > 65 mmHg.

Norepinephrine is considered the preferred first treatment for hypotension associated with sepsis in human patients. A recent study comparing norepinephrine and dopamine in dogs with naturally occurring vasodilatory shock found no difference between norepinephrine and dopamine groups in achieving normotension. The norepinephrine group initially demonstrated higher systolic blood pressure than the dopamine group, but this difference did not hold across subsequent time points. The study recommended future lines of inquiry for evaluating the ideal first-choice vasopressor for treating hypotension in dogs with vasoplegic shock. However, because it was a pilot study and a small sample size, I will continue using norepinephrine as my first choice in septic patients, based on evidence in the human field.

IMAGE 4: Demarcation of wound margins about five days after initial presentation.

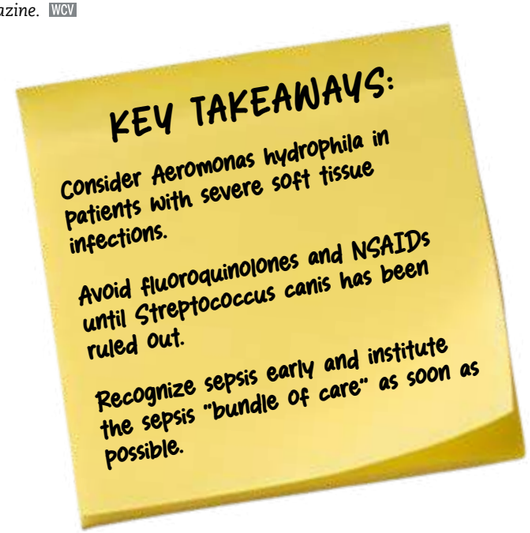
IMAGE 5: After wound debridement showing development of healthy granulation tissue.

When necrotizing fasciitis caused by *Streptococcus canis* infections is suspected, fluoroquinolones should be avoided. In the early 2000s, the emergence of canine streptococcal toxic shock syndrome was partially attributed to the use of fluoroquinolones to treat *S. canis* infections in dogs. It is thought that fluoroquinolones increase the virulence of *S. canis* by activating bacteriophages—viruses within the bacteria—that can carry a gene that acts like a superantigen. When released into the patient's bloodstream, these superantigens trigger the release of high levels of inflammatory cytokines from lymphocytes (T cells), causing further tissue injury. This concern was the reason we avoided initial use of enrofloxacin for an obviously septic patient.

It has been documented that administration of non-steroidal anti-inflammatory drugs (NSAIDs) may induce or accelerate necrotizing fasciitis in soft tissue infections with Group G *Streptococcus* species. Proposed mechanisms include masking of early clinical signs, leading to delayed diagnosis, and impairment of the immune system by inhibiting adherence, activation, and phagocytic activity of granulocytes. For this reason, we did not use an NSAID early in the course of Phenway's illness, because we were concerned about possible necrotizing fasciitis. Robenacoxib was started one week after discharge when Phenway was doing well at home.

This case is important for several reasons. It underscores the importance of considering *A. hydrophila* as a differential in patients with severe soft tissue infections. Phenway's case was unusual because she had no historical or obvious evidence of being immunocompromised. Her case highlights several potential pitfalls in the management of cases where necrotizing fasciitis is a concern. Successful management of this case was supported by adherence to current and emerging information in the management of veterinary septic patients, with supervision by a board-certified veterinary critical care specialist and input and wound management provided by a board-certified veterinary surgical specialist.

To save space, the references for this article are made available on the SBCV's website at www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine. WCV



WORLD TRAVEL **WITH THE FAMILY**

BY KYLA JOHNSON, BSc, DVM, HBORPT

A year off from work that doesn't involve caring for a new baby? To some, this concept seems insurmountable; to others, second nature—and for mid-career clinical veterinarians, even frightening. I'm here to tell you that it is possible.

HOW DO YOU AFFORD IT?

When our home was Whitehorse, Yukon, with its disproportionate population of adventurers, it wasn't uncommon for families to spend a year travelling the world or living overseas. The high percentage of government employees allows for the "four over five" salary layaway plan. Put differently, four years of salary is spread over five years. In other words, you receive 80 per cent of your salary for five years, but in the fifth year you don't work.

We now live in the North Okanagan, where a year abroad is less common but still very possible. My husband, a teacher, signed up for the above salary plan four years before our projected travel year. I, an associate veterinarian in a private practice, consulted with a financial planner and opened a specialized RRSP—more similar to an RESP—that could be later converted to a monthly payout. By the time of travel, I had accumulated three years of automatic monthly transfers plus conservative investment growth. I divided the total by 12 and that amount now flows back into our bank account monthly during our travel year. Since our travel started mid-year, the payments are split across two tax years, providing some tax savings.

WHAT ABOUT YOUR KID'S EDUCATION?

The other influence on our timing was our child's education and age. His elementary school culminates in Grade 7, a year of special "graduation" trips and activities that he would have been disappointed to miss. So we planned to world-school him for Grade 6. We also kept in mind the advice from other travelling parents about "the golden years": ages 7 to 12. At that stage, kids are old enough to handle the stress of travel—and remember it—but not so old that they don't want to hang out with you all day every day.

Canada is fairly flexible about school requirements for home schoolers. We purchased some Canadian curriculum workbooks and received recommendations for books and websites from Grade 6 teachers. When our son returns to school, there will likely be gaps in specific knowledge and skills that need catching up. Still, we strongly believe the education he will receive through world-schooling will far exceed what a traditional classroom can offer.

WHAT ABOUT YOUR HOME?

Finding tenants for our home also required advance planning. Two years before leaving, we joined Home Exchange (www.homeexchange.com). The cost is minimal, but the emotional commitment is bigger—you are offering your home to strangers. We joined early to earn points by hosting other home exchangers before our trip. Those points can later be used when staying in homes around the world.

A friendly cloud lemur in Madagascar.

"... SETTLE IN ONE PLACE AND LIVE THE LIFE OF A LOCAL WHILE OUR SON EXPERIENCES SCHOOL IN ANOTHER CULTURE AND LANGUAGE, OR TAKE THE BACKPACKING APPROACH AND VISIT MULTIPLE CULTURES AND LOCATIONS."

We were lucky to connect on Home Exchange with a family from Quebec who wanted to live in our town for the full school year. Since we were interested in Quebec, but did not want to spend 10 months there, we arranged a reciprocal exchange for the month of September before heading overseas. After that, the arrangement transitioned into a standard rental.

With finances in place and our house and cat cared for (my parents thankfully took our dog and other cat), the remaining puzzle piece was where to go.

WHERE WILL YOU GO?

We debated two main approaches: settle in one place and live the life of a local while our son experiences school in another culture and language, or take the backpacking approach and visit multiple cultures and locations. We chose the latter for no particular reason, but as we schemed, our list of "must-see" destinations kept growing. Our son also had a strong voice in choosing where we would go. To narrow the list, we applied one prerequisite: every destination must be somewhere we had never visited.

After months of talking it through—and asking advice from family, friends, and clients (some of my veterinary room consults definitely ran long once I learned they had travelled recently!)—we settled on 11 countries to visit in 11 months. A good friend joked, "There's your book title: *11 Countries in 11 Months with an 11-Year-Old!*"

We planned roughly three or four countries per continent—Africa, Europe, and Asia. For the first two months we were still in Canada, in Ontario and Quebec. As I write this, we have spent 11 weeks in Africa and are at the beginning of our European leg, with flights booked from London to Japan in April.

BUT WHAT ABOUT YOUR CAREER?

I had worked as a general veterinary practitioner for nine years before attempting this. I believe that time was necessary to build both the finances and the confidence that I could leave for a year and return with only a minimally diminished skill set (but a greatly diminished financial set).

In anticipation of leaving, I transitioned in 2023 to work as a locum veterinarian. This gave me the flexibility to stop taking contracts at a specific point and to resume quickly upon my return. As part of our travel is interprovincial, it also allows me to apply for a temporary license to work in another province.

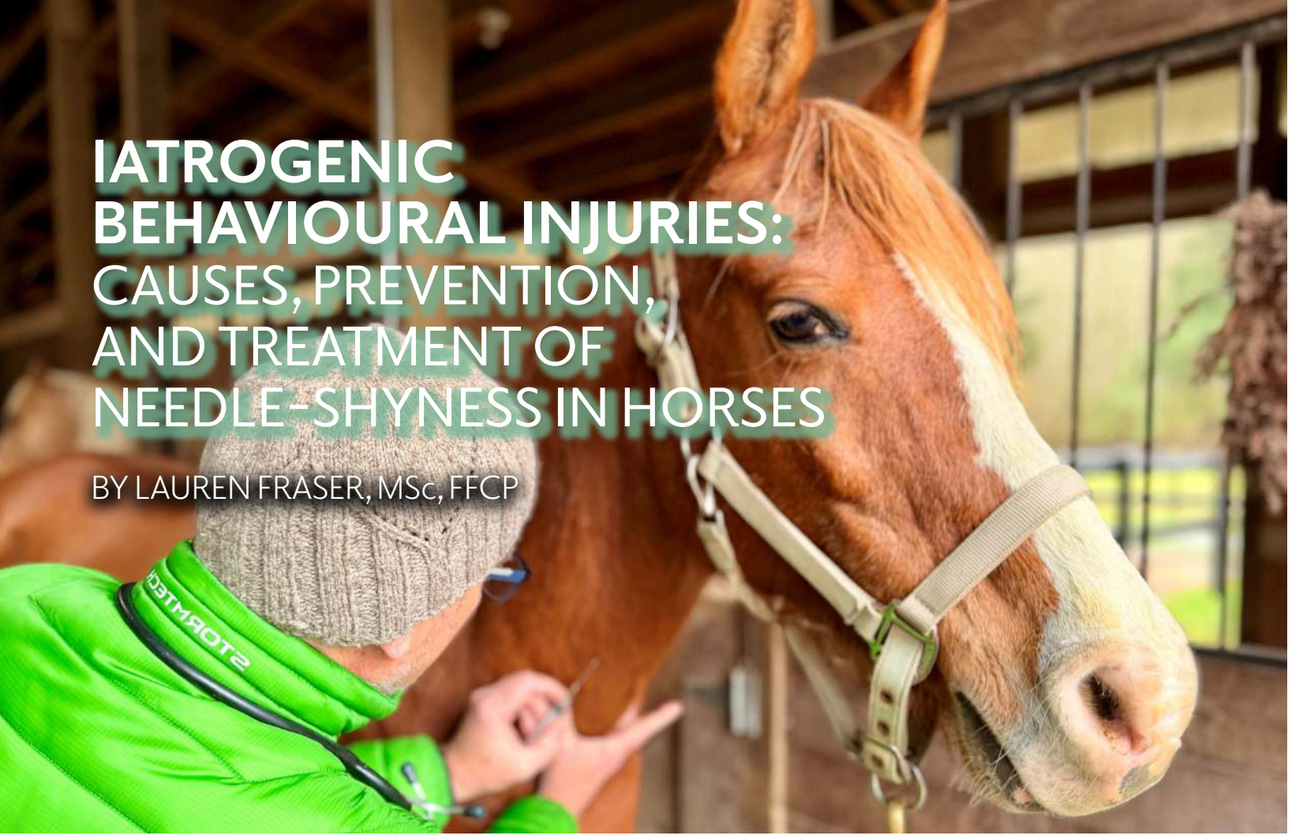
Another benefit of locum work is that I am now a business owner. I am responsible for all business expenses, including my continuing education, which means I can claim expenses from conferences. This is a small but nevertheless helpful way to reduce travel costs when planned carefully. International conferences in high-population areas such as Europe and Japan are plentiful and can offer interesting medical information and perspectives that differ from North American events.

Early in my locum career, I signed on with a veterinary telemedicine company as a backup in case locum work was slow (which, in the end, it was not). I also assumed I could continue this type of work while travelling. In retrospect, this was not well thought out. Time zone differences can have benefits—working Canadian night shifts while it is daytime abroad—but finding a quiet, secure location to work proved difficult. In addition, transitioning from travel mode to work mode is difficult when you're constantly on the move. Even finding a quiet time and space to write this article has been a challenge!

To keep some skills sharp, I am excited to have the opportunity to volunteer at a two-week stage dogsled race in the French Alps, La Grande Odyssée. I also plan to volunteer during our Asian leg and continue my veterinary education through reading and online courses. Veterinarians these days are lucky to have a plethora of learning opportunities at our fingertips—provided we have a good internet connection.

Stay tuned for updates from our travels, including a report on volunteering at La Grande Odyssée. Please check out our family travel blog at www.substack.com/@thepjfamily. WCV

PHOTO BY GORDON PUDDISTER



IATROGENIC BEHAVIOURAL INJURIES: CAUSES, PREVENTION, AND TREATMENT OF NEEDLE-SHYNESS IN HORSES

BY LAUREN FRASER, MSc, FFCP

Iatrogenesis, derived from the Greek words for "healer" and "origin," refers to harm caused to a patient by a medical practitioner during diagnosis or treatment. It is not necessarily synonymous with negligence or fault on the part of the medical practitioner. Iatrogenesis can occur despite best intentions, and even to practitioners with years of hands-on experience.

Iatrogenic harm is most often thought of being done to the physical body. But an iatrogenic behavioural injury (IBI) can also occur, resulting in lasting behavioural, psychological, and physiological changes that affect the animal long after the injurious event has passed.

Needle-shyness in horses is one such IBI that occurs in veterinary medicine. "Needle phobic," "injection-shy," or "needle-shy" are terms used to describe horses that make strong attempts to avoid or escape being injected. They may barge over handlers, pull away or bolt, rear, or even display aggressive behaviours such as kicking or striking. Some horses display these behaviours with only certain types of injections, such as injections in the jugular vein. Others may have generalized the response to all injection types and body locations.

Needle-shyness makes veterinary work more dangerous. It can also delay critical medical treatment, wreak havoc on a veterinary team's daily schedule, and create extra expense for both the client and the practice.

Needle-shyness usually worsens without deliberate, targeted intervention. Left untreated, additional problems can develop. For example, horses may form negative associations with previously neutral stimuli present during injection attempts, such as general restraint, the smell of disinfectant, or even veterinary staff themselves. This can lead to the horse showing strong avoidance or escape behaviours when those stimuli are presented in contexts where injections are not occurring. Alternatively, strong avoidance or escape behaviours may begin to occur earlier in the injection process, such as when the horse detects the veterinarian's truck pulling into the driveway.

IATROGENIC BEHAVIOURAL INJURIES: CAUSES

Horses develop IBI needle-shyness as a direct result of feeling undue pain or stress when receiving injections. When animals perceive pain or stress, fear can be triggered, leading to activation of the sympathetic nervous system (SNS). This involves rapid, involuntary neurological and physiological responses that prompt the animal to escape a perceived threat to their well-being. During SNS activation, the animal's brain also firmly stamps memories of these experiences onto their neural circuits, making fear more likely, and faster, to be triggered the next time they are exposed to the same stimuli.

Fear and SNS activation trigger predictable responses, colloquially called "fight or flight," as frightened animals try to fight or flee their way to safety. However, frightened animals may also engage in two other "f" responses: freezing and fidgeting. Freezing is beneficial when the animal's stillness and lack of movement cause a perceived threat to move away on its own. Fidgeting is often just a lower-level flight response that is thwarted by restraint.

By its nature, existence is not always an easy path through safe woods. All animals experience events that involve pain, stress, and fear. When these events allow a degree of controllability and predictability, animals are generally able to recover mentally without lasting harm.

PHOTOS SUPPLIED BY LAUREN FRASER

For example, a horse is able to land several hard kicks on an aggressive neighborhood dog who entered its pasture, causing the dog to quickly retreat. However, when an animal is exposed to unpredictable, stressful situations where they perceive they have little to no control, they may struggle to cope with or process the experience. It's this struggle to cope and process the experience that results in IBIs and long-term changes to the animal's nervous system. Not all animals will develop IBIs after exposure to the same event; factors such as genetics, life experience, and the animal's current mental and physical state all influence risk.

IBIs can be solely context-specific, meaning the horse displays extreme fear only when again faced with stimuli similar to those that initially triggered the injury. Or IBIs may be chronic or complex, negatively affecting the horse's mental well-being in regular daily life outside the original triggering situation. Horses with chronic or complex behavioural injuries show increased daily hypervigilance and anxiety, changes to memory formation and integration, a reduced ability to regulate emotions and responses to stimuli, and alterations to the feedback loops between regions of the brain, particularly those involved in emotional processing. In my consulting experience, most needle-shy horses fall into the first category. However, it is impossible to predict what type of IBI a horse may develop if an injection procedure leaves them unable to cope with or process the experience. Therefore, veterinary staff should prioritize taking steps to prevent IBIs in their patients.

PREVENTION

Learning to recognize and respond to signs of fear, anxiety, and stress (FAS) in patients is the best thing veterinary staff can do to prevent IBIs. Resources such as Fear Free's "Spectrum of Equine Fear, Anxiety, and Stress" handout are a useful starting point. Before a horse displays overt signs of FAS, such as barging over handlers, striking, or kicking, more discrete, subtle indicators can be seen. Veterinary staff should strive to keep patients at the lowest FAS scores possible. This keeps staff safer, increases patient compliance, and minimizes the risk of developing IBIs.

Low-stress handling should be used when performing injections. This primarily involves showing the horse that your behaviour is trustworthy and predictable, allowing the horse a sense of choice and control, and using well-timed positive consequences for desired behaviour during the encounter. This "considerate care trifecta" can act as a powerful safeguard against the development of IBIs.

BE TRUSTWORTHY AND PREDICTABLE

We cannot make horses trust us; we can only show ourselves to be trustworthy. Horses must be able to decide for themselves, through repeated, positive, and predictable experiences, that we are worth trusting. During handling for injection procedures, this can be achieved through systematic desensitization, which is a process that respects FAS thresholds while gradually building toward the injection itself. For example, allowing the horse to sniff the back of your hand, then stepping back; stroking the shoulder, then stepping back; stroking the shoulder, then the neck, then stepping back; and so on. This process does not necessarily add extra time to the procedure, particularly when you consider how much time it saves by keeping the horse calm and compliant.

Tricking the horse or hiding what is happening is not trustworthy behaviour and should be avoided. These approaches usually work only once. While they may be beneficial in true emergencies, they carry the risk of creating an IBI. The same can be said for harsh handling or corrections of fear-based behaviour. Such approaches cause pain and stress, increase FAS scores, and increase the risk of IBI creation.

AFFORD FEELINGS OF CHOICE AND CONTROL

Having a feeling of choice and control, particularly during aversive experiences, is well-understood to both protect against the development of behavioural injuries and increase animal resilience. One way to support this is by recognizing a horse's increasing FAS levels during a procedure and pausing to adjust your approach.

It's natural to want to firmly control a horse who is trying to escape. However, hindering the horse's ability to move or escape is perceived as another threat, further elevating FAS levels. Restraint when handling horses should be the minimum amount needed to keep staff safe while getting the procedure done.

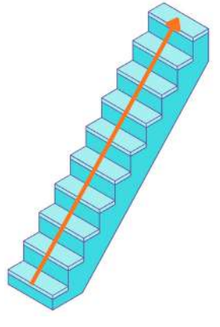
If a horse is struggling with a procedure, it is vital to determine if that procedure is a "need" or a "want" that day. Needs include time-sensitive, emergency or life-saving treatments and procedures. Wants are less urgent and can be delayed or postponed if proceeding is likely to cause an IBI.

USE WELL-TIMED, POSITIVE CONSEQUENCES

The judicious use of food can be helpful during injections to create involuntary positive associations and to reinforce desirable, voluntary behaviours that the horse performs during the procedure.

Classical conditioning, a powerful tool in the IBI-prevention toolbox, allows practitioners to create involuntary positive emotional responses to procedures such as injections. When combined with desensitization, it can quickly build long-term compliance in injection-naïve or only mildly stressed horses. "Open bar/closed bar" is a useful classical conditioning method that is easily learned by both staff and owners. Essentially, the "bar is open" when the steps in the injection process start, and "the bar is closed" when the process stops.

For example, after initial desensitization work to build up to this stage, the veterinarian approaches the injection-naïve horse and strokes their shoulder (opening the bar, meaning the handler begins continuous trickle-feeding), then occludes the jugular, raises the syringe to the neck, and punctures the jugular. When the veterinarian stops the injection process, the assistant stops feeding. Two things are critical for this process to work. First, the veterinarian's actions begin very briefly before the bar opens and treats start. Second, the stopping of the veterinarian's actions causes the bar to close, ending treat delivery. When done in this order, the horse forms an association that "the



10. **END GOAL:** OJ, raise syringe hand, inject horse
9. OJ, raise syringe hand to jugular, lightly poke with finger
8. OJ, raise syringe hand to jugular
7. OJ, raise syringe hand to 15 cm away from jugular
6. OJ, raise syringe hand to 30 cm away from jugular
5. Occlude jugular (OJ)
4. Stroke jugular
3. Raise occluding hand towards jugular
2. Scratch horse's neck
1. **FIRST STEP:** Approach horse's shoulder

FIGURE 1: A sample shaping plan for use during operant conditioning training to teach injection compliance.

injection process predicts treats." Without this order of events, the horse may quickly learn that "treats predict injection process," which usually results in a non-compliant horse who is now skeptical of veterinary staff and treats.

Operant conditioning occurs when horses learn that their voluntary behaviour results in desirable consequences, such as food delivery or the veterinary staff stopping a procedure. These desirable consequences are technically called "reinforcers," as they reinforce or make it more likely that a target behaviour will happen again in the future in the same context. FAS scores still need to be kept low during operant conditioning, as SNS activation hampers the horse's ability to learn.

A process called "shaping" should be used with operant conditioning. Similar to desensitization, shaping is a stepwise process: an end-goal behaviour, like standing calmly for an injection, is broken into small, achievable steps that can be reinforced (see Figure 1). A reinforcer is given to the horse after each step is successfully completed. If the practitioner's timing is good, unstressed horses quickly learn that calm, voluntary behaviour results in pleasant consequences.

TREATMENT

I often compare IBIs like needle-shyness to physical injuries such as bowed tendons. A seriously injured tendon requires considerable time and a dedicated, evidence-based treatment plan to heal so the horse can return to pre-injury activities. But the repaired tendon never returns to the original resiliency, leaving it at greater risk of future re-injury compared to a tendon that was never injured. In some cases, bowed tendons can even render the horse unable to live a full and healthy life. The same is true for IBIs. Therefore, prevention should be a priority for both horse owners and veterinary staff.

In my clinical experience, under the guidance of a qualified and experienced professional, most horses who develop needle-shyness can be successfully rehabilitated to the point where they can safely receive injections again. However, a small percentage of cases may never be able to be safely injected without the use of anxiolytic pre-visit pharmaceuticals given before the injection. Much like with bowed tendons, results depend in part on adherence to treatment recommendations and management.

Whether "cured" or not, the risk of relapse of a conditioned fear always remains for horses who incur IBIs. Horses can develop IBI needle-shyness from just one negative experience, and even a single frightening memory cannot be erased by behaviour modification work. Processes such as spontaneous recovery, renewal, reinstatement, or rapid reacquisition can be responsible for relapse. Practitioners must be aware of relapse risks when considering both preventing and treating IBIs.

SUMMARY

Despite best efforts and intentions, IBIs like needle-shyness can occur quickly in equine practice. These injuries make medical care harder for both veterinary staff and equine patients. As IBIs are challenging to overcome and prone to relapse, preventative care should be emphasized when handling equine patients for procedures involving injections. WCV

PERMANENT IDENTIFICATION, REAL OUTCOMES:

HOW THE BC PET REGISTRY SUPPORTS VETERINARY PRACTICES AND REUNITES PETS

BY PRISCILLA CHEUNG

For more than 130 years, the BC SPCA has played a key role in protecting and advocating for animals throughout B.C. That commitment extends beyond sheltering and enforcement to prevention—reducing the number of animals that need to enter shelters in the first place. One of the most effective prevention tools is permanent identification, and since 2015, the BC Pet Registry is the only provincial database for permanent pet identification.

As veterinary professionals recognize, identification is only as effective as the information behind it. Microchips are widely accepted as the gold standard for permanent identification, yet a growing body of evidence shows that registration gaps continue to undermine their effectiveness. Addressing those gaps is where collaboration between veterinary practices, registries, and animal welfare organizations becomes critical.

HUGE GAPS IN REGISTRATION

Statistics indicate that one in three pets will go missing at some point during their lifetime. While collars and tags offer quick visual identification, they are also easily lost. Microchips remain with the animal for life, but only function as intended when the chip number is linked to accurate, up-to-date owner information.

Community outreach events hosted by the BC Pet Registry reveal a consistent trend: approximately 20 per cent of animals scanned—one in five—had microchips that were never registered. These pets had undergone implantation, yet the final and most critical step was incomplete. For veterinary teams and shelters alike, an unregistered microchip represents a missed opportunity for rapid reunification and a preventable strain on animal welfare resources.

Guiding this work is the BC SPCA Strategic Plan 2025–2030, which promotes a vision of animals and people thriving together. Central to the plan is a focus on prevention—addressing the root causes of animal suffering. Ensuring pets are protected with permanent identification that is properly registered helps interrupt cycles of distress before they begin. When lost animals are quickly reunited with their guardians, fewer pets enter shelters, outcomes improve for families and practices alike, and pressures and costs on animal centres are reduced. In this context, effective microchip registration is not just an administrative step, but a meaningful animal welfare intervention.

THE BC PET REGISTRY: A PROVINCIAL APPROACH

The BC Pet Registry marked its 10-year anniversary in 2025. To date, more than 260,000 animals have been registered in the database. The program is provincially supported by 30 local BC SPCA locations, offering localized support, shared time zones, and a 24/7 call centre familiar with BC-specific animal welfare pathways.

The registry is essential when stray animals come to BC SPCA centres or are scanned at veterinary practices. Authorized veterinary partners have direct access to the database, allowing staff to quickly find owner details and reduce administrative delays in urgent situations.

DESIGNED WITH VETERINARY PRACTICES AND CLIENTS IN MIND

Veterinary practices support the BC Pet Registry by purchasing microchips either directly or through distributors such as AVP and WDDC. Each microchip is packaged with six barcode stickers and bundled with lifetime registration, which simplifies workflows and record-keeping in veterinary practices.

The BC Pet Registry does not upsell premium subscriptions. A single, one-time registration provides lifetime access, including unlimited updates, additional forms of identification, photo uploads, medical record attachments, co-owner information, and fee-free ownership transfers if a pet is rehomed. This streamlined approach reduces confusion for pet owners and minimizes follow-up questions for veterinary staff, particularly when owners encounter unexpected limitations with other registries.

Veterinary practices that choose BC SPCA microchips also demonstrate tangible support for a non-profit program that reinvests directly into animal welfare. Proceeds help fund life-saving BC SPCA initiatives across the province, and eligible partners may apply to the BC Pet Registry Grant Program, which supports community-based projects. To date, the BC Pet Registry has donated more than 10,000 microchips to rescue organizations across BC—an initiative we are proud to lead as the only pet registry in Canada providing permanent identification at this scale—to support underserved communities and reduce barriers to reunification.

STABILITY, PRIVACY, AND LONG-TERM ACCESS

Beyond reunification, registry stability and data stewardship are increasingly important considerations for both veterinary practices and pet owners. In early 2025, Save This Life, a Texas-based pet microchip company, abruptly ceased operations, and half a million pet owners lost their pet records. Events like this highlight a broader concern within the identification landscape: a microchip is only as reliable as the database behind it and the organization running it.

The BC Pet Registry operates as a provincially embedded, non-profit program with a long-term mandate to serve BC communities. Its provincial scope and institutional backing help ensure continuity, accessibility, and accountability—factors that are critically important when pets are lost years after implantation.

TAKING PRIVACY SERIOUSLY

Privacy protection is important. Some registries allow pet owners' information to be publicly displayed online, which may unintentionally expose them to risks such as data scraping, unsolicited contact, or misuse of personal information. The BC Pet Registry takes a privacy-first approach. Owner information is never publicly displayed and is not released to members of the general public. All data handling strictly complies with BC's Personal Information Protection Act (PIPA). This model protects pet owners from potential scams and data misuse while still allowing authorized professionals—such as veterinary practices and animal shelters—to access the information they need to facilitate reunification.

BEYOND MICROCHIPS: TATTOOS AND MULTIPLE IDS

While microchips are the preferred form of permanent identification, tattoos remain an important part of BC's identification landscape. In 2017, the BC Pet Registry assumed administration of the Provincial Tattoo Identification Program from the CVBC. Established in 1987, the program continues to support veterinarians and shelters in tracing tattooed animals.

Veterinary practices and shelters across the province have access to the BC Pet Registry Tattoo Identification Guide, an essential resource for interpreting both historical and current tattoo codes. A persistent issue is outdated or paper-based tattoo records, especially when practices change ownership or files become lost. Digitally registering tattoo codes through the BC Pet Registry ensures ongoing continuity, easy access, and long-term traceability. Various forms of identification—including microchips, tattoos, and municipal licenses—can be stored on a single pet profile at no extra cost, enhancing the chances of reunification when pets are found.

WHEN REGISTRATION IS MISSING: GEORGIA'S STORY

The impact of unregistered microchips is not theoretical. Georgia, a young grey-and-white domestic medium-hair cat, was found wandering alone in downtown Vancouver. Neutered, healthy, and clearly well cared for, he did not appear to be a stray. A Good Samaritan brought him to the Vancouver BC SPCA, where staff scanned for a microchip.

The scan confirmed the presence of a chip, but it was not registered. Further tracing revealed that the microchip originated from a company based in Ontario and linked only to a local veterinary practice—not to an owner. Without registration, there was no way to reunite Georgia with his family. This case also underscores another reality: when a registry is inaccessible, incomplete, or no longer operational, even the presence of permanent identification may not be enough to bring a pet home.

Shelter staff and volunteers extended his holding period beyond the required timeframe and shared his story widely, hoping someone would recognize him. No one came forward. Georgia was ultimately adopted into a loving home, but his original family may still be searching, unaware that he's safe now.

Expanding access to microchipping through a BC SPCA clinic serving underserved communities.

A SHARED RESPONSIBILITY

Veterinary practices play a pivotal role in closing the registration gap. Whether registration is completed by staff or delegated to the pet owner, ensuring that this step (and the importance of updating registration after a move or re-homing) is clearly communicated can make the difference between a brief detour home and a permanent separation.

The BC Pet Registry continues to work alongside veterinary professionals, rescue groups, and community partners to improve registration rates and expand access to permanent identification. Through partnerships with non-profit organizations, the registry also helps provide free microchips to guardians who might otherwise be unable to afford them—supporting social change and community resilience across BC.

Permanent identification works best when every link in the chain is intact. By strengthening collaboration between veterinary practices, registries, and animal welfare organizations, more lost pets can be returned safely and efficiently, ensuring that the system fulfills its intended purpose: reuniting pets with their families. WCV

PHOTO SUPPLIED BY PRISCILLA CHEUNG

Priscilla Cheung leads the BC Pet Registry program at the BC SPCA, where she has worked since 2021 after a 25 year career in marketing and long-standing commitment to the non profit sector. Originally from Hong Kong and a University of Calgary graduate, she has built her life and career in Vancouver. She is dedicated to expanding the registry across the province by engaging more veterinarians and strengthening community connections, especially for underserved groups. A lifelong cat advocate, Priscilla has supported cat rescue organizations for years and now volunteers at the BC SPCA Vancouver Centre. Outside of work, she enjoys barre workouts and hiking, and after recently losing her beloved dog of 15 years, Bailey, she is now preparing to become a cat foster-mom.

A REVIEW OF DR. JAMES SUDHOFF'S SBCV FALL CONFERENCE PRESENTATION

BY AMBER GREGG, RVT

At the start of his presentation at the SBCV Fall Conference, Dr. James Sudhoff, Associate Teaching Professor at Thompson Rivers University, warned attendees that he would "take us on a rough ride." But what followed was anything but rough. Instead, Dr. Sudhoff guided participants with clarity and insight through the complex landscape of legislation and bylaws that currently govern veterinary medicine in BC—legislation that, as he demonstrated, makes it difficult for veterinarians to understand what procedures or treatments they can legally and responsibly delegate "to an employee or another person who is not a registrant" as stated in Division 4.7 of the CVBC Bylaws. Currently, regardless of whether an individual is a graduate of a veterinary technologist program, registered or not, or any other support staff in daily practice, the delegation of tasks lumps all "non-registrants" together into the same pool for consideration.

The central purpose of the session was straightforward: to examine the delegation of tasks to veterinary technologists so that veterinary teams can broaden their capabilities, engage all professionals to the extent of their training, and ultimately elevate the level of patient care. Using examples of successful models from provinces that are legislatively further ahead than our own, Dr. Sudhoff encouraged attendees to consider not only what the law currently allows, but what is possible when veterinary technologists are regulated, have a defined scope of practice, and are appropriately supported to fully use their skills.

EDITOR'S NOTE:

The promoted title of this continuing education session at the SBCV Fall Conference was "Delegation of Care to Animal Health Technologists." The session looked at ways veterinarians could delegate veterinary tasks and explored the differences between graduates of animal/veterinary health technology programs and registered veterinary technologists (RVTs). The SBCV recognizes that graduates of such programs may or may not become registered. There is confusion and uncertainty created by titles—or the absence of titles. We've heard about this confusion from veterinarians and have experienced it ourselves at the SBCV. We offered this educational session to clarify what can be delegated and how, as well as to explore the RVT designation and what the future holds should RVTs become regulated.

THE IMPORTANCE OF LANGUAGE

Dr. Sudhoff began by contextualizing the discussion with a point that may seem simple but carries significant weight: terminology matters. Dr. Sudhoff explained that "Registered Veterinary Technologist" is a legally protected title in BC and only describes veterinary technologists who are registered with the BCVTA. Precise language is critical, he said, because communication is only effective when the message received is the same as the message intended. As is common across our current veterinary landscape, misusing professional titles—including using RVT-adjacent labels for support staff—creates misunderstanding not only within the profession, but also among clients and the public.

All hospital roles are valued and essential. The RVT title, however, is protected under the BC Societies Act (SBC 2015, c 18, s 204[1]). A person who is not a member of a registered occupational title society must not use, in connection with an occupation or profession they practice that is similar to the occupation or profession the society represents, the name of that society or its designated words or initials in a way that identifies them as a member of that society. This is not an adversarial debate; it is an issue of clarity, transparency, and public trust.

In practice, the use of RVT-implied terminology is commonly applied to staff who either have not completed formal education or do not belong to the professional association responsible for approving the use of that title (including non-registered graduates of veterinary technology programs). A common question that arises is: what should graduates be called if they have completed a veterinary technology program but are not registered? This inconsistency contributes to confusion, dilutes public understanding of the profession, and undermines the integrity of a legally protected title.

UNDERSTANDING VETERINARY TECHNOLOGIST EDUCATION AND COMPETENCY

To provide clarity, Dr. Sudhoff reviewed how RVTs are trained in BC. He discussed the two accredited veterinary technology programs, highlighted components of the challenging curriculum, and discussed practicum particulars. Second-year students often demonstrate sophisticated capabilities during practicums—skills that many practitioners may not realize RVTs possess, especially prior to graduation.

From small animal anesthesia to large animal care, the spectrum of essential skills that RVT students are exposed to in school is broad, sparks individual passions, and helps shape career goals early.

Becoming an RVT in BC is more than just finishing school. After graduation, students are eligible to write the Veterinary Technician National Exam. Upon successful completion, they are then eligible for BCVTA membership and are legally permitted to use the protected "RVT" designation.

Understanding RVT education is essential to understanding what they can safely, competently, and legally perform as they enter the profession. And like other professionals, as they gain experience, competence, and continue to develop their knowledge base and skills, they can be entrusted to perform tasks with increasing complexity.

DELEGATION, SUPERVISION, AND ACCOUNTABILITY

Dr. Sudhoff reviewed several key sections of the CVBC bylaws and the delegation of care provisions (CVBC Bylaws, Division 4.2, 4.3, 4.7) in detail, including:

- Unauthorized practice
- The veterinarian-client-patient relationship
- Delegation and supervision
- Informed consent
- Medical record-keeping

He explained that current bylaws require veterinarians to ensure an employee or non-registrant entrusted with a task is competent. But comfort with a competent team, he cautioned, does not protect against mistakes. True protection for patients, professionals, and the public comes from regulation that holds every individual accountable for the tasks they perform.

Dr. Sudhoff also compared BC's system with that of Manitoba and Ontario. While both take different approaches, each provides much clearer and more realistic guidance for a mobilized, team-based model of veterinary care. Manitoba, for example, defines liability for both civil and professional matters and clearly outlines delegation frameworks. Ontario's updated Veterinary Professionals Act is built around the concept of "one profession, two professionals," a model that empowers RVTs while maintaining collaborative relationships with veterinarians.

The Manitoba Veterinary Medical Association is responsible for regulating both DVMs and RVTs. Their website provides clear information on expectations for each, such as ensuring RVT competency before delegating (for DVMs) and accepting tasks only when feeling competent (for RVTs). The legislation holds both professionals accountable for their individual decisions and actions.

THE QUESTIONS BEHIND THE QUESTIONS

Throughout the presentation, numerous attendees asked for specifics: which tasks RVTs can perform, under what level of supervision, and in what circumstances. These questions, while important, often reflected the confusion and inconsistency of the current legislation. Rather than focusing on what could be possible, many questions attempted to navigate the gray areas of BC's existing bylaws.

Dr. Sudhoff remained patient and consistent, referring attendees back to the legislation, acknowledging ambiguity, and using each question to demonstrate why clearer legislation is both necessary and desired by RVTs.

At the end of the session, Dr. Sudhoff guided attendees through specific clinical examples to demonstrate how procedures are performed with fully mobilized RVTs, such as dental procedures or small animal anesthetic monitoring. He pointed out contradictions in the guiding documents—such as practice standards that cannot impose requirements contrary to the bylaws, and bylaws that remain silent on critical delegation issues. This contradiction and confusion further highlight the need for regulatory reform.

HOW DO WE GET THERE?

In the final portion of his presentation, Dr. Sudhoff shifted from diagnosis to treatment. How, he asked, do we get to a place where RVTs are allowed to practice to their full potential? He outlined foundational steps:

- Have a plan
- Adopt a shared team mindset
- Engage in clear and proactive communication with the entire team
- Reimagine the workflow
- Commit to building competency and trust

"You wouldn't make a Red Seal chef only prep potatoes every day," he said—a memorable reminder that when people feel fulfilled, engaged, and appreciated, morale rises along with employee retention rates.

Building RVTs into the team approach is simple—engage them. Ask them about their professional goals and provide support to help them reach those goals. This may include time, funds, or other resources to pursue necessary continuing education, or opportunities for them to gain hands-on experience. Include RVTs in decision-making when appropriate, and seek their input, especially when changes to protocols, procedures, or equipment will affect their day-to-day responsibilities.

THE NEED (AND DESIRE) FOR CHANGE

"You have to want change to really pursue it," Dr. Sudhoff emphasized. He added that fully utilizing your team members' skills leads to better medical outcomes and greater job satisfaction for the whole team. Meaningful change requires intention, planning, and an honest assessment of the barriers that keep the profession from evolving.

WHY CHANGE FEELS DIFFICULT

Dr. Sudhoff acknowledged the many reasons individuals and practices may resist change. Common concerns include perceived legal risks, fear of competition between RVTs and DVMs as roles expand, worries about client dissatisfaction, fear of losing one's license, lack of staff buy-in, or the belief that meaningful improvement requires too much money or effort.

He then weighed these concerns against the substantial benefits of fully utilizing RVT skills:

- Better patient care
- Increased clinical efficiencies
- Improved client communication
- The ability to do more for more patients
- Greater job satisfaction for the entire team

These benefits are not hypothetical. They are documented outcomes in jurisdictions and practices where RVTs are empowered to practice to the top of their training.

LEGISLATIVE CONFUSION AND THE NEED FOR REFORM

After clarifying the RVT title, veterinary technology education, and what may be possible for RVTs in the future, Dr. Sudhoff turned to the legislation that currently governs veterinary practice in BC. He described it as complex and, at times, contradictory, and referenced the Harry Cayton report, which emphasizes modern regulatory reform and clear, accountable frameworks for all health professionals.

An attendee asked why RVTs could not simply be regulated through the CVBC under the current Veterinarians Act, since "certified technicians" are already mentioned in the legislation. Dr. Sudhoff spoke respectfully and firmly on behalf of his RVT colleagues: "Regulation can't be something that is done to RVTs. RVTs need to have a seat at the table and be part of the conversation."

He explained that regulation under the current Act would not recognize RVTs as independent health professionals. Instead, it would allow veterinarians to introduce regulatory rules through bylaws without requiring meaningful RVT participation or representation. That model, he argued, is inconsistent with modern regulatory standards and is not what the BCVTA is seeking.

This led to discussion about autonomy, authority, and a principle of modern regulatory frameworks: "Nothing about us, without us." Dr. Sudhoff summed up what many in the room were already feeling: "What I'm hearing is a lot of confusion, misunderstanding, and inconsistency." Opening the Act, he argued, would allow us to correct these issues and design a system that supports what is possible, not just what is currently permitted.

Regulatory reform is often slow and frustrating, he acknowledged. But when done well, it creates clarity, transparency, and consistency—qualities the current framework clearly lacks.

A PATH TOWARD EMPOWERMENT

Throughout the session, Dr. Sudhoff demonstrated what leadership in the profession can look like. He consistently elevated the role of RVTs—not by diminishing the role of veterinarians, but by showing how both professions are strengthened when RVTs lead their own profession, practice to the full extent of their training, and share responsibility for patient care.

Dr. Sudhoff's presentation made it clear that the profession must now take the next steps: clarifying legislation, modernizing regulation, and ensuring that RVTs are active participants—not passive subjects—in shaping the future of veterinary medicine in BC.

Changing culture does not happen by accident. WCV

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FROM A LAWYER

EMERGING LEGAL FRONTIERS FOR BC VETERINARIANS, PART 2: FROM CLINIC TO CLOUD

BY SCOTT NICOLL, BA, MA, LLB, AND JOEL FRIESEN, BA, LLB, LLM

Veterinary medicine has always evolved alongside technology. From digital X-rays to electronic billing systems, veterinary practices have steadily incorporated tools designed to make practice more efficient and care more consistent. The most recent shift—to artificial intelligence (AI)—is quieter, and potentially more consequential, than many realize.

Increasingly, veterinary practices are turning to AI-based documentation tools to generate medical records. These systems often rely on continuous audio recording of exam-room conversations, whether through dedicated microphones, tablets, or even veterinarians' mobile phones. The recordings are transmitted to remote servers, processed using speech-to-text and natural-language models, and returned to the practice in the form of polished clinical notes.

From a workflow perspective, the appeal is obvious. Documentation is time-consuming, emotionally draining, and frequently cited as a contributor to burnout within the profession. AI-generated records promise to reduce charting time, allow veterinarians to focus more fully on their patients and clients, and produce more complete and standardized records. In many practices, these tools are framed not as surveillance technologies, but as digital scribes—assistants working quietly in the background.

What is less apparent is how profoundly these systems alter the legal character of the exam room. Conversations that were once ephemeral—spoken, heard, and then distilled into handwritten or typed notes—are now captured in full, preserved as raw data, and transmitted well beyond the physical confines of the practice. Information that was previously under the immediate control of the veterinarian is now routed through third-party vendors, cloud infrastructure, and in many cases, servers located outside Canada.

This shift does not merely change how records are created; it changes where information lives, who may access it, and which legal regimes may assert authority over it. The transition has occurred incrementally, driven more by convenience than controversy, and often without a corresponding reassessment of consent practices, privacy disclosures, or professional obligations.

The result is a growing gap between technological capability and legal awareness. Veterinary practices may be fully compliant with longstanding record-keeping norms while simultaneously exposing themselves—and their clients—to novel privacy and jurisdictional risks that existing practices were never designed to address.

VETERINARY RECORDS

In British Columbia, information collected in the course of a veterinary practice is typically governed by the Personal Information Protection Act (PIPA). While veterinary medical records do not constitute "personal health information" in the way human medical records do, that distinction should not be mistaken for legal immunity. PIPA applies to private organizations, including veterinary practices, whenever they collect, use, or disclose personal information.[1]

In practice, veterinary medical records almost always contain personal information about animal owners: names, contact details, payment information, and sometimes sensitive contextual information revealed during clinical conversations. Even where the clinical data relates solely to an animal, it is frequently linked, either explicitly or implicitly, to an identifiable individual. As a result, much of the information processed by AI documentation tools falls squarely within PIPA's scope.

PIPA requires organizations to obtain informed consent for the collection, use, and disclosure of personal information.[2] Consent is only meaningful if individuals are clearly informed about what information is being collected, the purposes for which it will be used, and to whom it may be disclosed.[3] When AI systems are involved, this analysis should go one step further. Clients should also be informed about *how* the information is collected, especially when audio is being recorded and transmitted to third-party cloud services.

The Act also limits the use and disclosure of personal information to purposes that a reasonable person would consider appropriate in the circumstances.[4] Whether continuous audio recording and cloud-based processing meet that standard will depend on the context, the transparency of the practice, and the safeguards in place. Veterinarians cannot assume that new technologies automatically align with traditional record-keeping expectations.

PIPA also requires organizations to make reasonable security arrangements to protect personal information

against unauthorized access, use, or disclosure.[5] This obligation makes it essential for veterinarians to understand how any AI or cloud-based tool handles the information they input. If identifying client information is entered into an AI system, where is it stored? Who can access it? Is it retained, reused, or incorporated into model training? These are not technical curiosities; they are questions that go directly to legal compliance. Failure to understand these systems does not excuse a breach of privacy or record-keeping obligations. The responsibility remains with the practitioner.

RECORDING THE EXAM ROOM

Recording your exam room is no longer just a tech upgrade; it is a legal minefield if handled carelessly. In BC, the moment you capture a client's voice or personal details, you're collecting personal information under PIPA. That means your veterinary practice, as a private organization, is squarely responsible for how that information is collected, used, and stored.

Consent isn't optional. You cannot leave it as a checkbox buried in a privacy policy or waiver. It must be meaningful: your clients need to know exactly what you're recording, why, and who will see it. If AI transcription tools are involved, the conversation isn't just recorded. That conversation will be sent offsite, processed, and stored in the cloud. Your clients need to know that too. Transparency isn't just polite; it's the law.

As previously stated, PIPA requires that personal information be collected only for purposes a reasonable person would consider appropriate.[6] Recording every word, sending it to a third-party cloud service, and assuming everything will be fine is a risky venture. Recent guidance from the Office of the Information Commissioner and Privacy Commissioner (OIPC) for BC makes this crystal clear. An audit of a medical practice found that audio and video surveillance without proper notice breached PIPA.[7] You must justify why you need the recording and ensure your clients consent to it.

Think practically. Your clients might discuss finances, family issues, or other sensitive matters while discussing their pet's health. AI systems don't separate the wheat from the chaff. Everything gets stored, often linked to identifiable owners. If you haven't disclosed the collection and obtained explicit consent, you're in breach, even if your intent was purely clinical. The solution is simple: treat consent as an active process, not a footnote. Explain the recording, get it in writing, and ensure your AI and cloud providers play by the same rules you do.

FROM THE CLINIC TO THE CLOUD

Moving veterinary records from your veterinary practice to the cloud does not move legal responsibility with them. Under PIPA, the practice remains accountable for personal information under its control.[8]

Odds are, your practice already relies on cloud services to some degree. If your staff use a cloud-based email service, collaborate on documents with an online service, or access your database online from an off-site location, your practice relies on the cloud.

The OIPC is clear in its guidance on the use of cloud services. You are responsible for the personal information stored in the cloud, regardless of whether any service you rely on operates in the cloud.[9]

Often, contracts for cloud-based services have a "take it or leave it" approach, with contractual terms that may allow the vendor to use personal information for its own purposes. While larger companies can generally push back against vendors—or even establish their own cloud servers—smaller businesses are often at the mercy of vendor terms.

This is where you need to do your due diligence. Review contractual terms carefully. Do not blindly agree to the contractual terms for any cloud service you rely on. If a vendor contract allows secondary uses that were never disclosed to your clients, your practice will be liable, either separately or alongside the vendor.

WHEN THE DATA LEAVES CANADA

Cloud computing sells itself on a simple idea: your data can live anywhere, and it shouldn't matter where. From a legal perspective, that promise is only half true. Once client information leaves your practice and enters the cloud, it can just as easily leave Canada, often without much visibility into where it ends up. While BC privacy law continues to apply, additional considerations arise. Foreign laws, courts, and government access rules may also apply to the same data, regardless of what your practice intended or what your vendor contract says. This is where cloud convenience starts to look a lot like a legal headache.

As of the end of 2025, there are estimated to be just over 6,000 data centers worldwide, with projections exceeding 8,000 by 2030. These servers can be located virtually anywhere, though the highest concentrations are currently found in the US, China, Japan, Germany, and the UK. Each of these jurisdictions—and indeed every country in which data may be stored—maintains its own legal framework governing access to stored data.

Take the US, for example. Those who have watched enough episodes of *Law & Order* (or its countless spinoffs) may recognize the principle that the Fourth Amendment protects individuals against unreasonable searches and seizures. This raises an important question: does that protection extend to personal information stored in the cloud?

To answer that question, we can offer the phrase that is simultaneously dreaded by clients and most frequently stated by their lawyers: "it depends."

The US Supreme Court has held that Fourth Amendment protections apply only to individuals who have a "substantial connection" to the US. Such a connection is established through voluntary or lawful presence in the country, combined with meaningful ties to it.[10]

So, in the unlikely event that your clients are exclusively American expatriates, and their data is stored on an American-based server, your practice is in the clear. But this is just one example from one country. What if the data is stored on a server in Ireland? Or Tunisia? There is not a lawyer alive who could confidently tell you precisely how secure personal information is for all 195 countries in the world.

So, is the takeaway that you simply need to ensure that all personal information your practice collects is stored on servers located in Canada? Well… No.

Even companies that store data exclusively in Canada and maintain Canadian offices may not necessarily be safe from foreign governments accessing your clients' personal information. Microsoft France's director of public and legal affairs recently testified that Microsoft cannot protect the data of French citizens because the US government currently has the ability to force American companies to hand over any and all data, regardless of whether it is on a server in the US or in any other nation.

So where does that leave a veterinary practice trying to make sensible, defensible choices? Not with a guarantee, but with risk management. All else being equal, choosing Canadian vendors with data stored and processed in Canada reduces the number of legal regimes that can assert authority over your clients' information. Fewer borders mean fewer unknowns.

For veterinary practices, this is less about chasing perfect privacy and more about choosing the least complex legal environment available. Canadian vendors are subject to Canadian privacy regulators, Canadian courts, and Canadian data protection expectations. If something goes wrong, you at least know which rules apply and where accountability lies. In a world where cloud data can travel anywhere, keeping your data closer to home is no guarantee—but it is a defensible, practical choice.

REGULATORY BODIES

One of the most uncomfortable features of privacy and professional regulation is that expectations often become clear only after something goes wrong. Regulators rarely issue step-by-step instructions for emerging technologies. Instead, they apply existing principles to new facts and ask a deceptively simple question: was the practitioner reasonable in the circumstances?

Generally, both privacy regulators and professional bodies take a principles-based approach. That means there is no exhaustive list of approved AI tools, no safe harbour for cloud platforms, and no exemption for widely used technologies. Silence from a regulator is not an endorsement or tacit approval; it is simply the absence of a test case.

What regulators do expect is judgment. If a complaint lands on a regulator's desk—whether involving unauthorized recording, cross-border data storage, or an AI vendor's secondary use of client information—the analysis will not focus on whether the technology was impressive or industry-standard. It will focus on whether the practice understood the tool, assessed the risks, and took reasonable steps to mitigate them.

This is where professional regulation overlaps with privacy law. While the CVBC has yet to issue meaningful guidance on AI practice standards, veterinary regulators across the English-speaking world have begun signalling that veterinarians remain responsible for the AI tools they use.[11] That guidance may be high-level, but the message is clear: you are expected to understand the systems you rely on—not just their benefits, but their limitations and risks.

"I didn't know how it worked" is not a defence. Neither is "everyone else was using it." Regulators routinely reject both arguments in other contexts, and there is no reason to expect AI will be treated differently. If anything, the novelty of these tools raises expectations that practitioners will proceed cautiously.

The reality is that regulatory standards often crystallize through enforcement, not advance notice. Early adopters sometimes become test cases. Veterinary practices that pause to ask difficult questions, document their decision-making, and err on the side of transparency are not being overly cautious; they are positioning themselves on the right side of future scrutiny.

In other words, the question is not whether regulators have issued detailed rules about AI and cloud computing. It's whether, when asked to justify your choices, you can explain them clearly, calmly, and convincingly.

RISK MANAGEMENT

By this point, it should be clear that avoiding AI and cloud tools altogether is neither realistic nor necessary. The goal is not zero risk; that's simply not possible. Instead, veterinary practices should strive for manageable, defensible risk. The good news is that much of that work happens long before any data is uploaded.

Start with vendors. If a company cannot clearly explain, in plain language, where your data is stored, who can access it, and what happens to it when the contract ends, that is not a minor inconvenience; it is a warning sign. Vendors accustomed to working with regulated professions should expect these questions and be prepared to answer them plainly. If they are evasive or rely on dense legal language, that alone tells you something about how seriously they take privacy obligations.

Contracts deserve more attention than they usually get. Look for clauses dealing with data ownership, retention, deletion, and secondary use. Pay particular attention to whether your data can be reused to train models, shared with affiliates, or retained after termination. These terms often sit quietly in the background, but they define what actually happens to client information once it leaves your hands.

Consent is another pressure point. Clear, plain-language disclosure goes a long way toward reducing risk. Clients do not need a lecture on cloud architecture, but they do need to understand when conversations are recorded, when third parties are involved, and whether their information may be stored outside Canada. Surprises are what generate complaints; transparency prevents them.

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It also helps to match the tool to the task. Not all AI carries the same level of risk. Using AI to draft notes from dictated summaries is different from continuously recording exam rooms. Cloud-based scheduling software is not the same as cloud-based diagnostic analysis. Treating all technology as equally risky leads either to paralysis or complacency; neither is helpful.

Finally, document your thinking. If you choose a particular vendor, note why. If you decide a risk is acceptable, record what safeguards are in place. This doesn't need to be elaborate, but it matters. When regulators assess reasonableness, contemporaneous decision-making carries far more weight than after-the-fact explanations.

Innovation doesn't fail because of regulation. It fails when people assume someone else has thought through the consequences. Taking the time to do that work now is not about slowing down, it's about maintaining control as the technology around you accelerates.

> **"THAT MEANS YOUR VETERINARY PRACTICE, AS A PRIVATE ORGANIZATION, IS SQUARELY RESPONSIBLE FOR HOW THAT INFORMATION IS COLLECTED, USED, AND STORED."**

CONCLUSION

The integration of AI-driven documentation and cloud-based tools into veterinary practice is not merely a technical upgrade. It represents a fundamental shift in how information is created, stored, and governed. While these innovations promise efficiency and improved care, they also introduce complex legal and ethical challenges that cannot be ignored. Under PIPA, veterinary practices remain fully accountable for personal information, regardless of where or how it is processed. Transparency, informed consent, and rigorous vendor due diligence are therefore essential, not optional.

In a globalized data environment, risk cannot be eliminated, but it can be managed. Choosing Canadian vendors, insisting on clear contractual terms, and documenting decision-making are practical steps toward defensible compliance. Clinics that embrace innovation thoughtfully, balancing convenience with accountability, will not only protect their clients but also position themselves on the right side of future scrutiny. In a rapidly evolving landscape, caution is not a barrier to progress; it is the foundation of trust.

To save space, additional references for this article are made available on the SBCV'S website at www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine. WCV

[1] *Personal Information Protection Act* (PIPA), SBC 2003, c 63, s 3(1).
[2] PIPA, c 63, s 6.
[3] PIPA, c 63, s 10.
[4] PIPA, c 63, s 11.
[5] PIPA, c 63, s 34.
[6] PIPA, c 63, s 11.
[7] OIPC BC, *Audit and Compliance Report P16-01*, p. 6..
[8] PIPA, c 63, s.34.
[9] OIPC BC, *Cloud Computing for Small and Medium-Sized Enterprises*, p. 3.
[10] Levy-Cohen, M. (1990). United States v. Verdugo-Urquidez. *J. Int'l L. 14*(2), p. 191.
[11] *West Coast Veterinarian* issue 61, "Emerging Legal Frontiers for BC Veterinarians, Part 1."

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