

WEST COAST VETERINARIAN

DECEMBER 2015 | N° 21



THE WILDLIFE REHABILITATION NETWORK OF BC

PERIODONTAL DISEASE IN A NUTSHELL

ELP—TWO VIEWS

VETAVISION 2015 & THE FISTULATED COW

REVISIONS TO THE PCA ACT

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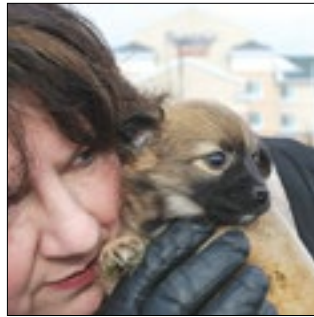


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COREY VAN'T HAAFF
EDITOR

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

»» **ON THE COVER**
A recovering baby moose. Photo courtesy of Northern Lights Wildlife Shelter.

This issue, by chance and not by design, includes a lot of information about wildlife in BC, maybe because human interactions with wildlife continue to surge as we continue to reduce the distance between us. We have encroached on their territory as we build new homes, and we continue to encroach on their territory as we nurture our own desires to escape the city and find some peace in nature, putting us closer to wildlife. I suspect we ultimately need to lessen the degree of our involvement in wildlife's business and keep a more respectable distance to prevent the types of injuries some of the wildlife rehabilitators so often see.

Ironically, as a pet owner, I need to increase my interactions in my own pets' business. Recently I became acutely aware of my own dogs' dental health, with one dog losing a few teeth and my tiniest dog losing them all. When I talk to friends about their dogs' teeth, some of them find it strange to hear me speak about cleaning and scaling and extractions, and the need for at least annual dental check-ups. This was unheard of 20 years ago, but for some veterinarians today it is one of the most serious health issues facing many dogs and cats.

"HUMAN INTERACTIONS WITH WILDLIFE CONTINUE TO SURGE"

Times change, I know, and it can be hard to keep up. We are fortunate, then, to see the future of veterinary medicine in the recent grads and second-year WCVM students who are already developing a presence within the Chapter. Two recent grads attended the Emerging Leaders Program and write about their experiences in this issue. Two more students—the recipients of our new scholarships—write about what being a veterinarian means to them.

Email: wceditor@gmail.com

WCVM CLASS OF 2019

Twenty-one BC students were among those welcomed to the WCVM and the veterinary profession on September 18 during a White Coat Ceremony in Saskatoon. The new students, who will graduate in 2019, come to WCVM from communities across Western Canada and the Northern Territories. Our own Dr. Sarah Armstrong was on hand to greet the students with a CVMA-SBCV Chapter name tag and to hand out, together with Dr. John Brocklebank of the CVBC, personalized white lab coats and stethoscopes to the first-year students.

"This year's White Coat Ceremony is particularly exciting because members of the Class of 2019 are joining the college exactly 50 years after our first students began their veterinary education in 1965," said WCVM Dean Douglas Freeman. The college has produced about 3,000 veterinarians—most of whom live and work in Western Canadian communities.



PHOTO BY DEBRA MARSHALL

ABOVE The BC and Yukon students of the WCVM class of 2019.

Welcome to this new occasional column. If you have questions about interesting or sensitive veterinary issues, send them to the CVMA-SBCV Chapter. We will find the best person to answer them and will print the answers here.

Q General practitioners sometimes refer clients and their pets with specific problems to specialists. How are those specialists permitted to continue contact with the client after the referral issue is concluded? Are specialists permitted to continue to market services to that referral client?

A The College of Veterinarians of British Columbia (CVBC) was asked by *West Coast Veterinarian* magazine to speak to the issue of specialist referrals and advertising under the bylaws in effect at the time the article was requested in August 2015.

Under the existing bylaws, a registrant may only refer to themselves as a "Specialist" if they meet the definition of a "Diplomate." Because the bylaws only permit a registrant to hold one class of registration at a time, a Diplomate or Specialist may be eligible for registration in either the General Private Practice (GPP), if they have a Certificate of Qualification, or in the Specialty Private Practice (SPP) class of registration. However, a registrant with the SPP class of registration is limited to practising within that specialty and may not practice within the general practice of veterinary medicine. For clarification; a registrant with an SPP class of registration may only practice in that specialty; while a registrant with a GPP class of registration who is also a Diplomate and has registered that diploma with the CVBC may, under the restrictions articulated below, practice either as a general practitioner or as a specialist.

A registrant with a GPP class of registration, who is also a Diplomate, may establish a separate specialty practice with a different practice or practice facility name within the same physical location as a general practice; in which case they are expected to keep the two businesses separate, and to properly inform their clients as to whether any particular consultation is a general or a specialist consultation.

DISCUSSION

Most specialists for their specialty practice rely heavily, if not exclusively, on referrals from other practitioners. A specialist who does not take care of their relationship with referring practitioners is not likely to succeed with their specialty practice.

A specialist with a GPP class of registration may jeopardize the relationship between themselves and a referring veterinarian if they are seen to be soliciting clients for their general practice that were referred to their specialty practice. Perhaps in contemplation of this, the current Code of Ethics, s. 45, Appendix A to the bylaws, specifically requires a specialist to whom an animal has been referred to refer the patient back to the referring member when the consultation, second opinion, or treatment services are completed.

"A SPECIALIST WHO DOES NOT TAKE CARE OF THEIR RELATIONSHIP WITH REFERRING PRACTITIONERS IS NOT LIKELY TO SUCCEED WITH THEIR SPECIALTY PRACTICE"

Under the existing bylaws, it is unlikely that a specialist who marketed to referred clients and only promoted and restricted the services provided to those clients to specialty services could be accused of poaching regular clients. Equally well, it seems very likely that a specialist, who also has a GPP class of registration, who solicited referred clients for their general practice would both incur the ire of the referring veterinarian and risk censure by the CVBC.

If a practice or practice facility is concerned whether advertising conducted by another practice or practice facility is in breach of the bylaws, the practice may wish to first refer to the Guidelines to the Marketing Bylaws that are publicly posted on the website, and if still concerned that an infraction has occurred provide a written complaint to the CVBC for determination by the Investigation Committee whether to investigate or to dismiss.

—The Registrar's Office of the College of Veterinarians of British Columbia

WCV CONTRIBUTORS



LINDSAYE AKHURST, RVT, is Manager of the Vancouver Aquarium's Marine Mammal Rescue Centre, the largest Marine Mammal Rehabilitation Centre in Canada. She leads her team in the rehabilitation and release of various marine mammals each year. Lindsay is an expert at working with seals, sea lions, porpoises, sea turtles, and sea otters.



JOSEPHINE BANYARD, DVM, practices small animal referral dentistry and as a general practitioner in Chilliwack. She is the author of *Healthy Mouth, Healthy Pet: Why Dental care Matters*, a primer on dentistry for pet owners, veterinary lay staff, and veterinarians. She also has a series of YouTube videos on dentistry for pet owners.



STEVEN CHAPMAN was born and raised in Fort St. John, BC, and over the summers has returned home to work at the local small animal practice. He likes to spend his spare time playing guitar, stone carving, and being outdoors, particularly camping, hiking, and fishing. Steven is our student liaison and is in his third year at WCV.



MATTHEW KORNYA, DVM, is an associate veterinarian at The Cat Clinic in Hamilton, ON, with interests in emergency medicine and feline retroviruses. He is a 2014 OVC graduate currently starting his feline practice residency. He lives with his five cats, cockatiel, and saltwater aquarium.



ANGELIKA LANGEN is co-founder of the Northern Lights Wildlife Society in Smithers. For the past 25 years, NLWS has rehabbed a large number of wildlife in need including bear cubs (black and grizzly), moose, deer, elk, coyotes, foxes, lynx. Angelika is president of the Wildlife Rehabilitation Network of BC and a Director on the board of the Bear Care Group.



ELIZABETH O'BRIEN, DVM, DABVP, is a Diplomate, American Board of Veterinary Practitioners in feline practice and the owner of two successful feline-only practices in Hamilton, Ontario. "Dr. Liz" is the visionary for Cat Healthy. She was the recipient of the CVMA Small Animal Practitioner of the Year Award in 2014.

GRAEME SCOTT is a financial consultant with MediCapital Inc. providing specialized financial services to Canadian veterinarians for practice start-up, practice purchases, new equipment acquisition, and leasehold improvements. Graeme graduated with a business degree from Bishop's University and lives in Vancouver. When he is not on the basketball court, he can often be found working with the non-profit Bikers For Autism Society.



JENNIFER VAN DER LEE, DVM, is a small animal veterinarian who graduated from the Atlantic Veterinary College in 2012. She currently lives and practices in Duncan, BC on Vancouver island. She feels happy to be living in an area where she can enjoy the outdoors year round. When she is not working she enjoys hiking, camping, travelling, kayaking, archery, fishing, and spending time with her cats.



SARA WATT, DVM, graduated from the Western College of Veterinary Medicine in Saskatoon in 2009. She practiced her first year abroad in New Zealand working in rural mixed animal practice before returning to her home town of Vernon. Sara has a special interest in internal medicine and orthopedic surgery, and is currently developing her skills in these areas.

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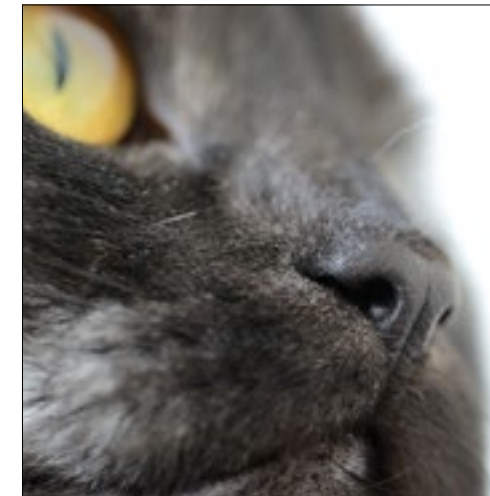


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PERIODONTAL DISEASE IN A NUTSHELL



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THE WILDLIFE REHABILITATION NETWORK OF BC



deceember

Please join us in welcoming Dr. Nicole Gallant as the 67th national president of the Canadian Veterinary Medical Association (CVMA). Dr. Gallant succeeds Dr. Jean Gauvin whose term came to an end in July 2015.

YOUR 2015–2016 CVMA EXECUTIVE MEMBERS

Dr. Nicole Gallant, President
Dr. Troy Bourque, President-Elect
Dr. Troye McPherson, Vice-President
Dr. Terri Chotowetz, Executive Member
Dr. Jean Gauvin, Immediate Past-President
Dr. Barry Stemshorn, Treasurer

BY NICOLE GALLANT, DVM

I am honoured, as the 67th President of the Canadian Veterinary Medical Association, to make my first contribution to *West Coast Veterinarian* magazine.

Each year, we proudly recognize individuals who have demonstrated significant accomplishments, exemplary leadership, and tireless commitment to Canada's veterinary community. Nominations for the 2016 CVMA Awards opened on November 1 and are being accepted until January 31, 2016. Award nominees (excluding those nominated for Honorary Membership) must be current CVMA members to be eligible for nomination; however, they can be nominated by non-CVMA members. We invite you to consider nominating a deserving colleague for one of our prestigious awards. Please visit the CVMA Awards section of canadianveterinarians.net for more information.

The CVMA will hold the seventh CVMA Emerging Leaders Program (ELP) as part of our 68th Convention in Niagara Falls, July 7 to 10, 2016. The objectives of the ELP are to help identify and develop leadership skills within Canadian veterinarians, technicians, and technologists while building a leadership network within the veterinary profession. Please visit the Science & Knowledge section of our website to see how you can participate.

From October 4 to 10, we celebrated our 30th Annual Health Week with nearly 200 veterinary practices participating across Canada. This year's theme, "The Perfect Pair: Partners in preventive veterinary care," reminded animal owners that they and their entire veterinary team are important partners in ensuring optimal health for their animal. Visit www.canadianveterinarians.net for highlights of the event.

We also celebrated National Veterinary Technician Week with the Registered Veterinary Technologists and Technicians of Canada (RVTTC) from October 11 to 17. The week celebrated the vital role veterinary technicians play in the day-to-day function of veterinary practices. The CVMA and

the RVTTC signed a collaboration agreement in 2014 to strengthen ties between veterinarians, registered veterinary technicians/technologists, and registered animal health technicians/technologists. Both Associations believe working together will benefit veterinary healthcare teams and animal patients across Canada.

The CVMA, in partnership with Brief Media, is pleased to offer members a free global edition of *Clinician's Brief*. The monthly digital subscription provides practical clinical information to companion animal practitioners and is available at no cost to all CVMA members. To request your free subscription, visit the CVMA Member Benefits & Services section of our website and click the *Clinician's Brief* link.

The CVMA is currently addressing a number of issues regarding best practices and the humane treatment of animals. In late September, the Animal Welfare Committee (AWC) held a teleconference to discuss progress and plan next steps in the current process to revise the Kennel Code of Practice. The AWC is also busy drafting or revising various position statements, which are expected to be circulated for member comment or finalized by the end of the year,

"CONSIDER NOMINATING A DESERVING COLLEAGUE FOR ONE OF OUR PRESTIGIOUS AWARDS"

including Devocalization of Dogs, Humane Training Methods for Dogs, Cutting Canine Teeth in Adult Dogs, Humane Slaughter, Mass Depopulation, Forced Moulting of Poultry, Seal Hunt in Atlantic Canada, Use of Animals in Entertainment and Recreation, and Use of Animals for Scientific Purposes. The committee will also be reviewing and updating a number of position statements in the new year, including Animal Abuse, Keeping of Native or Exotic Wild Pets, Ownership and Selection of a Pet, Disbudding and Dehorning of Cattle, Firing of Horses, Tail Docking of Dairy Cattle, Castration of Piglets, and Electroimmobilization. Given the recent attention declawing of cats has received in the media, the AWC will also be updating the Onychectomy (Declaw) of the Domestic Felid position statement on a priority basis before the end of 2015.

The National Issues Committee (NIC) is currently reviewing CVMA general position statements. The following are expected to be completed before the new year: Legislation Concerning Vicious Dogs, Importation of Rescue Dogs, and Aquatic Animal Veterinary Medicine, with Veterinary Dentistry being reviewed in 2016. Importation of Rescue Dogs is also scheduled to be the topic of the NIC forum at the upcoming CVMA Convention in Niagara Falls, July 7 to 10, 2016. We hope to see you there!

We distributed the 2015–2016 print editions of the CVMA Source Guide in late summer, and a digital version is available on our website by visiting "My Profile" under the Login link. This annual publication is distributed exclusively to members of the CVMA. Our objective is to make this publication an all-encompassing reference document that members consider useful and a valuable benefit of their membership.

I, and the rest of the staff at the CVMA, look forward to your continued support as a CVMA-SBCV Chapter member into the new year so that we may continue to provide a voice for Canadian veterinarians as our profession faces the many challenges of the changing times. I look forward to an engaging term ahead as President of the CVMA.

We welcome your comments and inquiries at the CVMA office. Please contact us by email at admin@cvma-acmv.org or by telephone at 1-800-567-2862. Your feedback is extremely valuable to us.



Nicole Gallant, DVM, graduated from the *Faculté de médecine vétérinaire* at the University of Montreal in 1983, after three years of a Bachelor of Agricultural Science with a major in Animal Science. Upon graduation, she returned to Prince Edward Island to practice at the Kensington Veterinary Clinic, a mixed animal practice, for what was supposed to be one year, but has turned into more than 30 years. She became a partner in 1990. For her first 20 years at the practice, she focused on large animal, including dairy herd, health. She now focuses on small animals with some exotic species, such as emu and alpacas. Dr. Gallant's hobbies include reading, gardening, travel, biking, and walking, especially with her dogs on P.E.I.'s beaches.



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BY SARAH ARMSTRONG, DVM

It is amazing how quickly the past year has gone by. As President, I have seen many doors open and have had the opportunity to interact with Presidents from veterinary medical associations across the western provinces. It has been a very valuable and enlightening experience. I hope that I have been able to help encourage the younger generation to take part in the community aspect of our profession, and to show the experienced generation that the new generation still cares about it. Above all, it has been important to bring the views of BC veterinarians to the table and give back to our members.

“BC-QUOTA STUDENTS THANKED THE CVMA-SBCV CHAPTER FOR RECOGNIZING THE NEED FOR BC-SPECIFIC AWARDS”

More recently, I had a wonderful September, traveling to the beautiful province of Saskatchewan. The province is fortunate to have the cold temperatures necessary for the colourful autumnal foliage changes I remember from growing up in Ontario. I travelled to Regina and Saskatoon on behalf of the CVMA-SBCV Chapter for the SVMA's AGM in Regina and then to Saskatoon for the WCVM's annual White Coat Ceremony and Awards, and its Advisory Council meeting.

The SVMA has done a lot of impressive work over the past year. It has been working with a media firm to launch a social media campaign to promote the image of the veterinary profession. The Association had great feedback based on Google Analytics. The SVMA also put together a wonderful documentary video that was played at the AGM and the WCVM White Coat Ceremony. It is a short five-minute video displaying the various different veterinary roles and highlighting the passion behind veterinary medicine. Lastly, as with other VMAs, they took the time at the AGM to honour members with various awards. This is something I hope the CVMA-SBCV Chapter will be able to bring to its own members in the near future.

After attending the SVMA AGM, I travelled north to Saskatoon for the WCVM's events. The White Coat Ceremony went off without a hitch as we welcomed 21 new BC students to the profession. The awards ceremony was also well received, and the BC-quota students thanked the CVMA-SBCV Chapter for recognizing the need for BC-specific awards. This year, we presented two awards; one on behalf of the equine committee and one on behalf of the CVMA-SBCV Chapter.

Lastly, I attended the WCVM advisory meeting along with the Dean, the Western VMA Presidents, the Western Chief Veterinary Officers, and various faculty members from WCVM. The advisory meeting is held yearly to discuss and consider the WCVM curriculum and entrance qualifications, and to inspect the college building. In the past year, the WCVM has undertaken construction projects such as upgrading lecture theatres and the library, developing a major research funding proposal, and helping develop some curriculum changes particularly to the wellness service and the mentorship program. The College was also in the midst of celebrating its 50th anniversary over the weekend of the White Coat Ceremony.

I had a great time in Saskatchewan and truly enjoyed my time networking with both the SVMA and WCVM.

Thank you for the opportunity to serve as your president over the past year. I did my very best to represent British Columbia well. Although we are a budding Chapter and still have some bumps in the road to overcome, I truly believe in us and what we can contribute to our BC veterinarians. I see a bright future ahead. For that, I am truly grateful.



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

BY JANE PRITCHARD, DVM, MVetSc

The Animal Health Centre (AHC) in Abbotsford is the provincial veterinary diagnostic laboratory. It is an under-utilized and underappreciated resource in the province of British Columbia. That may be due somewhat to location, but I think that it is also because we have not marketed ourselves well enough for veterinarians in the province to know what we offer. We offer a very high level of veterinary service that we can stand behind; a service that the American Association of Veterinary Laboratory Diagnosticians (AAVLD) and ISO 17025 stand behind with our accreditation. We are one of only two veterinary laboratories in Canada with both accreditations and one of only three with AAVLD accreditation, the others being the veterinary laboratories associated with veterinary colleges at Ste. Hyacinthe and Guelph.

“THE AHC HAS WORLD-CLASS LEVEL EXPERTISE IN FISH, POULTRY, MAMMALS, MARINE MAMMALS, AND EXOTICS”

Our current staff includes two fish pathologists, two avian health pathologists, four mammalian pathologists, and a veterinary virologist. We have recently hired graduates of OVC and AVC as well as WCVM and Ste. Hyacinthe. Our laboratory scientists are of the highest quality, something they prove over and over in the results of blind test panels that are required for accreditation. The AHC has world-class level expertise in fish, poultry, mammals, marine mammals, and exotics.

We offer full necropsy services, full bacteriology, parasitology, serology, histopathology, and molecular diagnostics. We also have a full virology department that includes the ability to do virus culture, and we have an electron microscope on site for visualizing virus particles. If you are not familiar with our services and wish to explore them, I encourage you to phone and speak with any of our pathologists (604-556-3003 or toll free at 1-800-661-9903).

I mention this because we are nearing the final step of reviewing our fee structure. As a government institution, we must go through a very stringent process to increase any fee. The last time our fees were significantly changed was in 1999; yes—16 years ago. We have been reviewing our fees for three years and believe that increases could come down early in 2016. Although the increase may be a significant percentage in some cases, costs have certainly changed in 16 years and the increases will not catch us up in all areas. The focus in the change was to become more cost effective as far as how much of our service is subsidized by the provincial government, but also to remain at a very competitive level with other similar diagnostic services across Canada. The new fees will allow us to bring in new services. One significant new service should be that we will be able to do a return of remains on pets under 40kg through commercial cremation services.

The AHC is here to serve the needs of the veterinarians in British Columbia as far as the prevention and control of zoonotic and foreign animal disease; the production of safe food from livestock, poultry, and fish; and insuring the welfare of all animals in the province.



Jane Pritchard, DVM, MVetSc, graduated from OVC in 1977, and completed a Masters in Anatomic Pathology at WCVM in 2000, continuing as an Associate Professor in the Department of Pathology for two years before embarking on a career with the BC Ministry of Agriculture in 2004. With the exception of a two-year international development project in China from 2007–2009, she has remained with the BC Government. In 2013, she was appointed to the role of Director of the Plant and Animal Health Branch, and Chief Veterinary Officer for the Province of British Columbia.

VETAVISION 2015 & THE FISTULATED COW

BY STEVEN CHAPMAN

Every three years since 1970, the WCV has opened its doors for Vetavision, a student-run event that allows the public to tour the school, see the advancements in animal health, and learn more about both companion and food production animals.

Over the first weekend of October, several thousand visitors came to Vetavision, from a wide range of professions, ages, and geographic locations. Large groups from pre-vet clubs, 4H, and pony clubs attended, along with full classes of grade-school children. More than 20 booths provided topics for exploration, including infectious microorganisms, medical imaging, animal welfare, anatomy, as well as small and large animal medicine and surgery. The most popular booths were those with live animals like the Kiddie Corral petting zoo, poultry—and, of course, the fistulated cow. Several live demonstrations detailed practices like milking, sheep herding, use of therapy dogs, falconry, and equine body condition scoring. Faculty from the University of Saskatchewan gave talks on various aspects of medicine, including one by the WCV's social worker Erin Wasson on pet loss and family grieving support.

I'm sure that many past graduates of the WCV recall volunteering at a booth and answering the questions of many excited and curious children. It's hard to feel like your efforts are being appreciated when most of the children are more excited about the available candy than about the booth's information. But after the event, you realize that Vetavision influences the minds of both young and old alike. For the young children, it may spark an interest in animal health, or maybe even the veterinary profession. At a minimum, it inspires them to take care of their pets and be an advocate for animal welfare in the future. For example, many children showed concern about hurting the fistulated cow before volunteering their arm. This demonstrates an awareness of animal welfare that is important for younger generations to develop. Many parents told me that they remembered Vetavision from when they were

younger, and now their kids could not stop talking about their own experience. For some, it even provided an introduction to the "birds and the bees," in the form of a student I overheard anthropomorphically describing the pig uterus as the "baby factory." For the older students, involved educational talks and demonstrations illustrated important aspects of animal health. There was even a pre-vet night, highlighting the reality of the veterinary profession and enrolment requirements for the WCV.

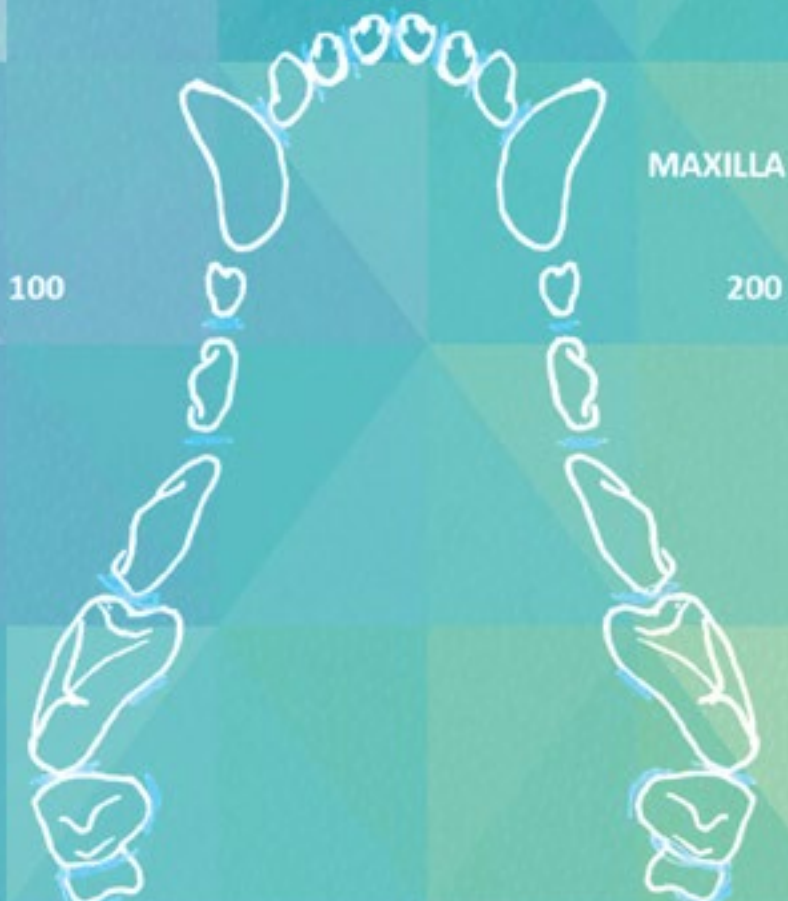
For the adult animal lovers in attendance, it was an exciting educational experience as well. A Global News reporter commented that putting her hand into

“MOST POPULAR BOOTHS WERE THOSE WITH LIVE ANIMALS LIKE THE KIDDIE CORRAL PETTING ZOO, POULTRY—AND, OF COURSE, THE FISTULATED COW”

the fistulated cow was one of the scariest things she had ever done—even more so than sky diving. Parents questioned the students on wellness programs for their pets, especially after visiting the booths on internal parasites and pathology. Vetavision also made for an excellent family outing as parents could enjoy their children doing things like dressing up in a surgery gown and standing beside a young alpaca.

The 2015 Vetavision was very successful and was enjoyed by all. Kayla Bilsborrow, one of the head organizers, said, "I volunteered to organize Vetavision because I recognized it as one of the most broad and wonderful ways students could share their passion for this school, and for the profession that we worked so hard to join."

Without the work of the students to run the booths and those who put in countless hours to organize the event, Vetavision would not have been possible. **WCV**



PERIODONTAL DISEASE IN A NUTSHELL

BY JOSEPHINE M. BANYARD, DVM, DAVDC



How often do you hear your client say, “His breath is really bad,” or “Dr. Google said...”? Or the worst comment of all: “But my last vet never said anything about how bad the teeth are....” You look in the mouth, and the crowns of the teeth look clean, so what tips you off that there is advanced periodontal disease? An understanding of periodontal disease and anatomy are needed.

WHAT IS PERIODONTAL DISEASE?

Periodontal disease is a disease of the connective tissue, cementum, the periodontal ligament and the alveolar bone around the tooth. You cannot diagnose it with the naked eye. It is diagnosed using the dental probe and intraoral radiography and is staged based on the bone level around the tooth. Calculus may or may not be evident. There are five stages of periodontal disease, and a single tooth can have all five stages around it. An adult dog has 42 teeth, and an adult cat has 30 teeth ... so this is a Pandora’s Box.

It all begins with plaque, which is a biofilm, a matrix of bacteria, salivary glycoproteins, and mucopolysaccharides, invisible to the naked eye but which adhere to all tooth surfaces. Plaque is tenacious. It cannot be removed with chemicals alone. It can only be removed by the mechanical action of the toothbrush. A toothbrush can only reach 2 mm into the sulcus (the gap between the tooth and gums). If the sulcus is deeper than 2 mm or if the biofilm is left too long, plaque becomes calcified by the saliva, becoming calculus. Calculus, also called tartar, is firmly attached to the tooth surface and is very stable. It is not effectively removed by brushing and needs to be removed by scaling. As a rule, plaque develops in 24 to 48 hours, and calculus takes 4 days to develop. As this accumulates above and below the gumline, inflammation develops in response to the bacteria and irritants such as calculus. It is the inflammation that over time causes bone loss. We base our treatment recommendations on the stage of periodontal disease which is a disease causing bone loss and can only be diagnosed by intraoral radiography.

REFRESHER ON TOOTH ANATOMY

Enamel, which is the hardest tissue in the body, covers the crown of the tooth (Figures 1 and 2). The dentin forms the majority of the tooth substance and surrounds the pulp which carries the blood supply and the nerves which enter the tooth via the apical delta. The root of the tooth is below the gumline and is covered by cementum. Surrounding the cementum and anchoring the root of the tooth in the bone is the periodontal ligament. The bone surrounding the tooth root is the alveolus, which is made up of dense compact bone against the root and on the buccal and lingual surfaces of the jaw bones and cancellous bone between these layers of compact bone. The gingiva is attached to the tooth at the junctional epithelium, and the free margin of the gingiva reflects up and against the crown, usually covering the enamel bulge of the tooth. As a rule of thumb, the distance from the bottom of the sulcus (the gap between the crown and the free gingiva) and the underlying bone is about 2 to 3 mm. The floor of the sulcus should be at the cementoenamel junction (CEJ). If it ends below this level, it is called a pocket and indicates that loss of gingival attachment and possibly bone has occurred due to periodontal disease. In a two-rooted tooth, the bone between the roots is called the interradicular bone. The roots meet at the furcation which is under the gumline between two roots and is not normally visible.

“WE BASE OUR TREATMENT RECOMMENDATIONS ON THE STAGE OF PERIODONTAL DISEASE”

BACKGROUND IMAGE BY ART OF SUN / SHUTTERSTOCK.COM, DRAWINGS BY DR. BANYARD

REFRESHER ON THE FIVE STAGES OF PERIODONTAL DISEASE

Figure 3 shows a summary of the five stages of periodontal disease. Note the gingival appearance and the bone height at each stage.

In Stage 0, there is no inflammation of the free gingiva which has a feather edge lying flat on the surface of the crown of the tooth. The sulcular depth is 1 to 3 mm in a dog and 0.5 mm in a cat and ends at the CEJ. At this stage, no treatment is needed by the veterinarian. The owner should brush teeth daily. This is the stage at which your own dentist sees you for regular dental prophies so you can keep your teeth all your life.

Stage 1 shows early inflammation (swelling, redness, heat, pain) of the free gingiva and loss of the feather edge. Brushing teeth at this stage is painful. There is plaque present, possibly calculus, but no bone loss. This is the only completely reversible stage of periodontal disease. Maintenance dental cleaning does a lot of good at this stage. Areas missed by not doing a professional dental cleaning are shown in Figure 4 as these areas are hard to reach in an awake dog even with brushing daily. This is why animals need regular prophies—to remove these accumulations of calculus in the hard-to-reach places—and why cleanings without anesthetic do not work.

Stage 2 shows inflamed gingiva and the beginnings of bone loss—0 to 25 per cent bone loss. This bone loss is not reversible. There is still good bone support for the tooth, but it is important to stop the progression, so a professional dental cleaning is needed at this stage.

Comparison of the pocket depths recorded at the previous teeth clean should be used to assess when the patient should come back for the next teeth clean. In my practice, I do the first two teeth cleans six to twelve months apart depending on the patient's oral health. Then, depending on the probing depths, I decide when the next clean will be. Homecare and the patient's natural immunity influence the response to the maintenance program.

Stage 3 shows significant inflammation with evidence of gum recession or thickened swollen gingival margin. The diagnosis is based on radiographic evidence of 25 to 50 per cent bone loss. The bone loss can be horizontal which is irreversible, or vertical along the long axis of the tooth root. Sometimes, these teeth can be saved with guided tissue regeneration and/or bone augmentation (advanced training or referral recommended).

However, the pet owner needs to be able to give excellent homecare for the patient and be committed to brushing the teeth daily after treatment. At this stage, teeth have reduced bone support and can be very painful, and extraction is usually indicated.

Stage 4 is where there is more than 50 per cent bone loss. Salvaging these teeth is heroic and expensive, and needs an extremely motivated owner and referral to a veterinary dental specialist. It is usually not done; extraction is indicated.

Stages 3 and 4 are evidence of chronic disease and neglected oral health care.

Figure 5 summarizes the bone level through Stages

0 to 5. Note that the bone level in Stages 0 and 1 is the same.

When a veterinarian has a patient with established periodontal disease, the objective is to return the oral cavity to a Stage 0 to 2 periodontal disease. In a patient with existing disease, if we can keep it from progressing beyond Stage 2, we can keep the patient comfortable. The best case scenario is to keep our patients at Stage 0, which is where our own dentists keep us. Unfortunately, in our case, the costs for a professional teeth clean include anesthetic, full mouth radiographs, and the cost of an anesthesiologist and veterinarian, incurring higher expense than for human teeth cleans.

HOW DO WE DIAGNOSE PERIODONTAL DISEASE DURING A ROUTINE PHYSICAL EXAM?

The simple answer is that we cannot do this very accurately. To diagnose and treat correctly, probing depths and intraoral radiographs of all the teeth, is the only accurate method. However, there are a few oral findings that can tip you off that periodontal disease is advanced. Note the enamel bulge in Figures 1 and 2. This is usually not seen in a healthy mouth (Figure 6), as it is covered by the free gingival margin. Remember that the alveolar bone margin is about 2 to 3 mm below the attached gingiva. If the gingival margin is below the enamel bulge (Figures 7 and 8), this means there is significant bone loss as the bone is at least 4 to 6 mm below this and perhaps more. With experience, you will see that some dogs have an enamel bulge with no periodontal disease such as the maxillary fourth

“THE OBJECTIVE IS TO RETURN THE ORAL CAVITY TO A STAGE 0 TO 2 PERIODONTAL DISEASE”

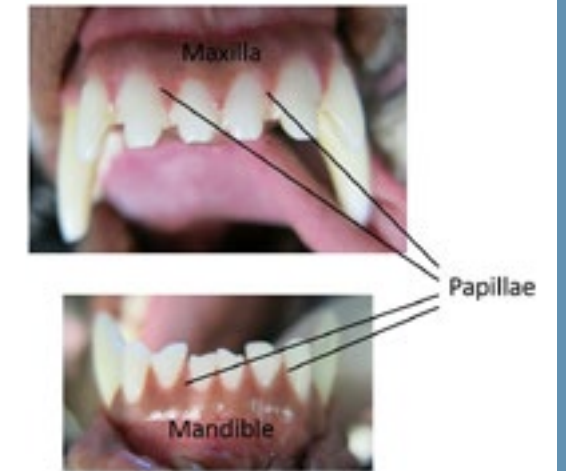


FIGURE 9



FIGURE 8

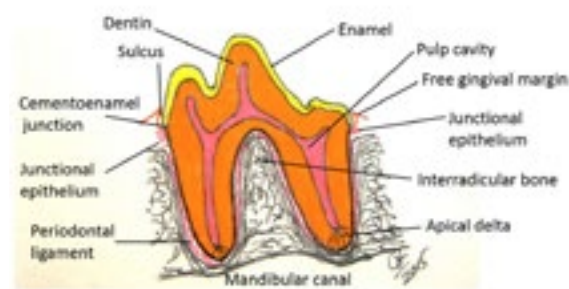


FIGURE 1



FIGURE 2

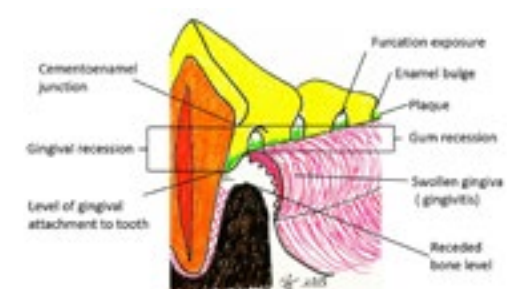


FIGURE 7

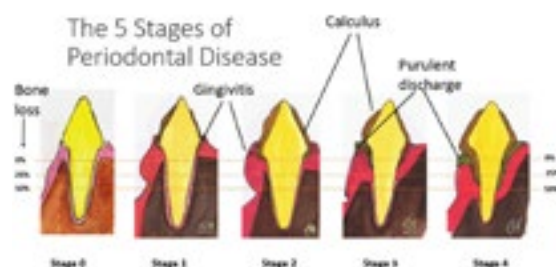


FIGURE 3



FIGURE 4

5 Stages Of Periodontal Disease bone levels

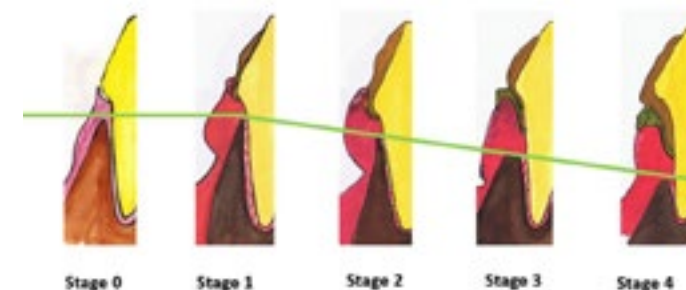


FIGURE 5



FIGURE 6

“I SEE MANY CASES OF ADVANCED PERIODONTAL DISEASE THAT THE OWNERS HAD NO IDEA ABOUT BECAUSE THEIR VETERINARIAN HAD NOT RECOGNIZED THAT THERE WAS A PROBLEM”

premolar teeth in some large breeds. When you can see the root under the enamel bulge and/or the furcation (Figure 7), this is gum recession. Root and crown colour are similar, so look for the bulge.

Normally, there is a scalloped gingival margin of the incisor teeth (Figure 9), and the mandibular caudal dentition (Figure 10). Note the papillae between adjacent teeth. Figure 11 shows the loss of the papilla between the central incisors signalling significant bone loss. There is a hammock effect of gum recession (Figure 12) where the presence of bone on either side of the tooth gives the gums support and hides the bone loss beneath the gums.

A thickened free gingival margin, as seen in Figures 7 and 13, is evidence of chronic periodontal disease. A gleam of light along the ledge of the gingiva suggests swelling and loss of the smooth feather edge.

As a veterinary dental specialist, I see many cases of advanced periodontal disease that the owners had no idea about because their veterinarian had not recognized that there was a problem. The owners of the Shar Pei shown in Figure 14 had no idea of the condition of their pet's teeth, and felt very guilty. The Shar Pei had full mouth extractions, and the swollen mouth disappeared over the next week. The owners were very grateful that the mouth was treated and the pet happier and eating better. (And that the terrible smell was gone.) This is a very common situation.

Savvy veterinarians doing regular oral examinations under anesthetic (which includes intraoral radiography capabilities) are able to diagnose these issues and deal with most of the needed tooth extractions in their clinics. They recognize the value of regular oral health care to their patients. Although an extracted tooth ceases to be a problem once it's in the bucket, extraction is painful and ultimately represents a failure in both home care and preventative therapy. It is also the end result of years of neglect—usually unknown neglect. Veterinarians need to inform owners what can be done to prevent this disease. We need not feel guilty when we tell owners they need to brush their pet's teeth daily, and the pet needs an anesthetic to have its teeth cleaned and dental radiographs on an annual basis. Humans brush their own teeth twice a day and have professional teeth cleans twice a year. So when we do annual teeth cleans in pets, we are doing one professional teeth clean every seven dog years, which means we are missing 13 teeth cleans. A lot of periodontal disease can develop if humans miss 14 professional teeth cleans. [WCV](#)



FIGURE 10



FIGURE 11

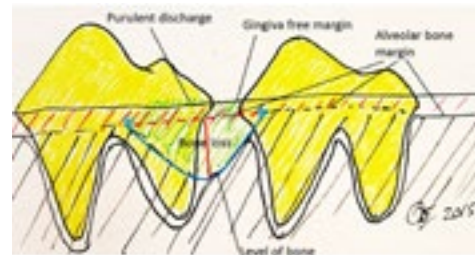


FIGURE 12

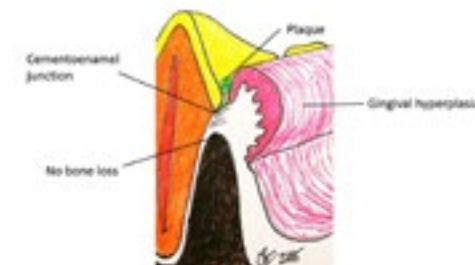
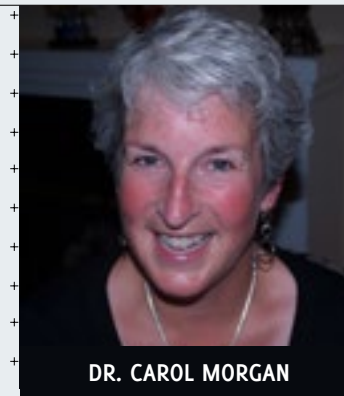


FIGURE 13



FIGURE 14

in memoriam



DR. CAROL MORGAN

On November 7, 2015, our own Carol Morgan passed away peacefully at her home in Victoria, after more than four years of a truly valiant struggle against breast cancer.

Carol graduated from WCV in 1988, and achieved a PhD in Animal Welfare from UBC in 2009. She was the recipient of the Frederic A. McGrand Award in 2011 for her outstanding contribution to animal welfare in Canada, presented by the Canadian Federation of Humane Societies. In 2012, Carol was honoured by the CVMA with the Humane Award for her leadership and significant contributions to animal well-being. The BCSPCA granted her its Lifetime Achievement Award in 2014 for her outstanding contributions to animal welfare policy and advocacy work, and for her countless volunteer hours with the organization.

Carol served as Deputy Registrar for the then BCVMA, as chair of the CVBC's Animal Welfare Committee, member of the CVMA Animal Welfare Committee, member of the BCSPCA board of directors, and

member of the board of directors for the Canadian Council of Animal Care. She was a lecturer at UBC and WCV, instructed an online course in Veterinary Ethics through the Veterinary Information Network, and was a prolific author.

I have known Carol since we were students at WCV, and our paths wove in and out over the years. We both worked as small animal locums in Victoria, and would regularly check in with each other: comparing notes, ensuring that we weren't undercutting each other, and sometimes just venting about life, love, and the ups and downs of daily practice. I watched with admiration as she returned to academia after several years—I couldn't imagine pursuing a PhD in animal welfare and ethics, after so many years in the trenches!

A few years ago, I was a member of the Animal Welfare Committee, and I took a VIN class in Veterinary Ethics, mostly because Carol was one of the instructors. I was reluctant, thinking that I knew everything there was to know about ethics. That course changed the way I practice and changed my outlook on the world.

One of my tasks on the committee was to work on the Euthanasia Guidelines, for which Carol created an outline. The summary page for the guidelines is framed as a series of questions, and one of them is *What would the veterinarian whom you most admire do?* I always had one person in mind: Dr. Carol Morgan. I wish I had told her.

Carol's passing is a great loss to veterinary medicine, to animal welfare and veterinary ethics, and to the many people who cared for her. She will be remembered for her strong leadership, her passionate work in animal welfare, and her truly infectious laugh.

Carol requested that in lieu of flowers, memorial donations be made to Plan Canada's Because I am a Girl or to the BCSPCA.

Respectfully submitted, Cecily Grant, DVM [WCV](#)



PHOTO COURTESY OF THE BCSPCA

BCSPCA COMMUNITY ANIMAL SPAY/NEUTER GRANT

The BCSPCA Community Animal Spay/Neuter Grant Program is a grant program designed to support non-profit community organizations, veterinarians, First Nations communities, and regional and municipal governments working to address pet overpopulation. The grant program helps to fund targeted spay/neuter projects for community (or feral) cats, and cats and dogs living in First Nations communities. The application deadline is December 31, 2015. To learn more or apply for a grant, please visit www.spca.bc.ca/spayneutergant.



FELINE LOWER URINARY TRACT DISEASE

A REVIEW

BY ELIZABETH O'BRIEN, DVM, DABVP (FELINE PRACTICE)
AND MATTHEW KORNYA, DVM

One of the more commonly encountered and most frustrating aspects of feline practice is lower urinary tract disease. Presentation of the disease varies from inappropriate urination, dysuria, pollakiuria, or hematuria, to complete lower urinary obstruction. Treating lower urinary disease and preventing it before it occurs are crucial parts of successfully managing feline health.

While feline lower urinary tract disease (FLUTD) is a convenient and commonly used term, it is not the most helpful descriptor and may lead to misconceptions as to what this syndrome entails. The many complex and interacting factors involved in FLUTD must be recognized individually and treated appropriately.

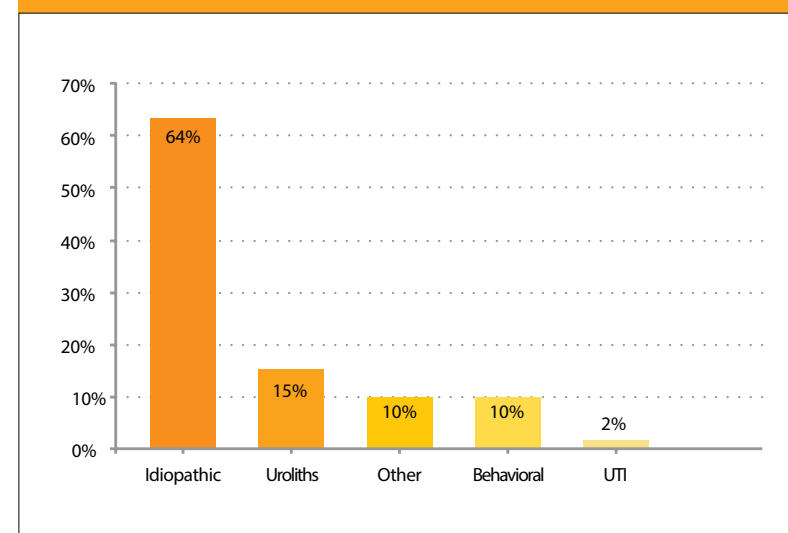
CAUSES

There are several major causes of lower urinary tract disease in the cat (see Figure 1).

FELINE INTERSTITIAL/IDIOPATHIC CYSTITIS (FIC)

FIC is a sterile inflammatory process and the most common diagnosis for young adult cats with FLUTD. Cats with FIC have no urinary stones or crystals, normal USG with no glucosuria, negative urine culture, and no evidence of neoplasia or other concurrent disease. (Technically, the definitive diagnosis of FIC entails bladder scoping; however, this is rarely done in clinical practice). Cats with FIC may have idiopathic hematuria, transitional cells present in urine, and a palpably thick and sore bladder wall. FIC is a diagnosis of exclusion that tends to occur in two forms: an acute, self-limiting form that is extremely painful and resolves in three to seven days with minimal reoccurrence; and an extremely painful, chronic form where there are frequent reoccurrences. The treatment goal is to decrease the severity and frequency of clinical signs by meeting the environmental needs of the cat and by treating the pain and inflammation aggressively when it occurs. Owners need to be informed that treatment is often not curative and that reoccurrences are common.

FIGURE 1 CAUSES OF LOWER URINARY TRACT DISEASE
ADAPTED FROM BUFFINGTON ET AL, J AM VET MED ASSOC, 1997.



While the pathophysiology of FIC is not well understood, it is likely a multifactorial syndrome caused by a combination of inappropriate epithelial barriers, previous urinary insult, stress, genetics, dietary factors, and other unknown causes. Management of this condition is consequently difficult and involves a multifactorial approach focusing on environmental needs and stress reduction (discussed in detail later). Antibiotics rarely play a role in the treatment of FIC, and veterinarians should resist prescribing them, despite owner pressure.

CRYSTALS AND STONES

These are among the more common causes of lower urinary tract disease in cats. The development of stones or crystals is a complex and multifactorial process involving urinary pH, mineral concentrations, urinary specific gravity, and genetic predisposition. While genetics cannot be changed, urinary pH and mineral content may be adjusted through diet, and USG may be lowered by increasing water intake and transitioning to canned food. Many effective urinary foods are available on the market; however, decreasing USG to <1.030 is also a key part in the management of urinary calculi. Unlike in dogs, infection does not seem to play a role in stone formation.

Two primary stone types are present in cats: struvite (magnesium ammonium phosphate; triple phosphate) and calcium oxalate monohydrate (though urates are on the rise). Other stones (e.g., xanthine, cysteine) are often associated with specific disease conditions and are not discussed here. See Table 1 for an overview of stone types.

BACTERIAL INFECTION

Urinary tract infections (UTIs) are rare in cats without inciting causes. It is unusual for young, healthy cats (especially males) to develop a UTI, and even more unusual for this to occur in the absence of an inciting cause. While bladder infections in cats are rare, bladder stones may harbour bacteria and act as a nidus for infection, and so cats with confirmed bladder stones should have their urine cultured prior to initiating antibiotic therapy. Cats with glucosuria, low USG, perivulvar dermatitis, or hematuria are all predisposed to UTIs.

Just as a cat with lower urinary signs should never be assumed to have a UTI, a cat with no bacteria on urinalysis cannot be assumed to have sterile urine. Culture should always be performed on cats suspected of having a lower urinary infection to ensure infections are not missed and that rational antibiotic use occurs.

Care should always be taken to differentiate lower and upper urinary infections based on clinical signs, urinalysis, and bloodwork.



“MANAGEMENT OF THIS CONDITION IS CONSEQUENTLY DIFFICULT AND INVOLVES A MULTIFACTORIAL APPROACH FOCUSING ON ENVIRONMENTAL NEEDS AND STRESS REDUCTION”

NEOPLASIA

This is an uncommon cause of lower urinary disease, but an important one to rule out. Transitional cell carcinoma and other tumours of bladder origin may cause hematuria, bladder pain, and urinary obstruction, and predispose to infection. Surgical resection, radiation therapy, and chemotherapy are all options for palliation or treatment of clinical signs. It is presumed that, as in dogs and humans, transitional cell carcinoma in cats may be NSAID responsive.

Signs of lower urinary tract disease often include urinating outside the litter box, straining to urinate, hematuria, and a firm, painful bladder. Other signs may be less specific such as anorexia, vomiting, or lethargy. Full workup of a suspected FLUTD case entails:

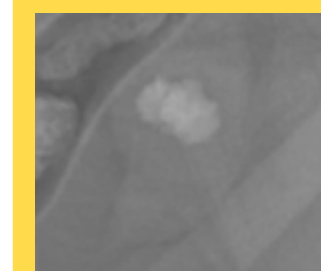
- Abdominal radiographs to look for bladder, ureteral, urethral, and renal calculi
- Full urinalysis (plus culture if deemed necessary)
- Bladder ultrasound to evaluate for radiolucent stones, sediment, or bladder wall masses
- Potentially, bloodwork to look for concurrent conditions (diabetes, renal disease, hyperthyroidism)

Arguments can be made for both free-flow and cystocentesis samples (manual expression is painful, can cause bladder trauma, and may cause iatrogenic hemorrhage, and as such is not recommended). Free-flow urine allows for evaluation of hematuria and sloughing of transitional cells (both valuable in the workup of FIC); however, a reliable culture cannot be obtained. Cystocentesis is often preferred due to sample sterility although this may also cause iatrogenic hematuria.

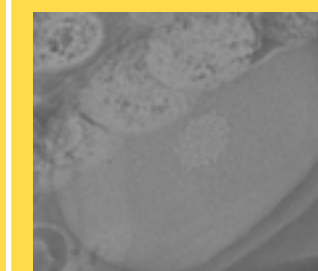
Lower urinary obstruction is a major, life-threatening consequence of untreated lower urinary tract disease. Cats with lower urinary obstruction are almost exclusively male, and may obstruct with some combination of stones/silt, blood clots, mucous, bacteria, or even functional spasm. Urinary obstruction is a potentially fatal occurrence that requires immediate and aggressive fluid therapy, deobstruction, and medical

TABLE 1 COMPARISON OF URINARY CALCULI

Struvite	Calcium Oxalate
Crystals form spontaneously, may be artifact	Crystals usually associated with pathology
Alkaline urine	Acidic urine
Dissolve with diet	Do not dissolve with diet
Stones are usually large, disk-shaped, smooth, less dense than bone on radiographs	Stones are usually small, multiple, jagged, as dense as bone on radiographs
Surgery not necessary for stones	Surgery usually necessary for stones
Form in bladder	May form in bladder, ureter, or kidney



Radiograph



Radiograph



Photomicrograph



Photomicrograph

management. While management of the acute phase of urinary obstruction is beyond the scope of this topic, a few longer term considerations should be accounted for. These considerations may also play a role in the management of pre-obstructive FLUTD and FIC:

- Urinary diets, especially canned, to avoid the formation of new crystals/stones. Even cats with no evidence of crystaluria may benefit from a lower USG and more bladder-friendly food. See Table 2 for a listing of proven dissolution diets.
- Urethral relaxants are essential to preventing reobstruction. Prazosin has largely supplanted phenoxybenzamine as the relaxant of choice, as it is safer, more effective, and faster acting (~8h compared with three days to onset).
- Pain control is essential. A cat with a sore bladder will be less likely to eat and drink normally, more likely to lick or traumatize the penis, and will have a lower quality of life.
- NSAIDs are a controversial topic. The authors often employ them to reduce inflammation and control pain in post-obstructed cats (with good success), but concerns exist regarding their use in animals with renal compromise. Most cats with lower urinary obstruction have post-renal azotemia, but some may have renal compromise and NSAIDs should only be used in those animals that have normal renal function after a careful cost-benefit analysis.
- Antibiotics should not be used in every case, only in those with concerns for infection. This includes post-obstructive bacteriuria, non-sterile catheter placement, open-system catheters, and diabetes mellitus. Antibiotics should be used in a rational manner, using the narrowest-spectrum to cover bacteria of concern, using adequate courses, and avoiding long-acting antibiotics.
- Urinary acidifiers are generally no longer recommended, as they may predispose to oxalate stones. Management of hydration, magnesium, and other mineral levels, and bladder wall health is considered more effective.
- Polyunsaturated fatty acids, glycosaminoglycans, and other disease-modifying agents are an area of active research. While studies using these agents have seen varied levels of success, risks are considered low, and these agents may benefit concurrent conditions, such as osteoarthritis.
- Stress reduction and environmental enrichment play a major role in reducing recurrence of FIC and urinary obstruction. They are discussed in more detail below.

“THE ROLE OF STRESS IN FLUTD CANNOT BE OVERSTATED”



PHOTO BY VERMOLAEVA ALEXANDER; PAGE 23 BY STEPHANIE ZIEBER; PAGE 20 BY THE LEVY SHUTTERSTOCK.COM

Perineal urethrostomy (PU) is a last-resort option for a very small subset of cats with repeated lower urinary obstruction. While amputation of the penis with spatulation of the urethra will dramatically decrease the risk of obstruction, this procedure has a very high rate of complications including urinary incontinence, chronic cystitis, UTI, and inappropriate urination. PU should not be performed in any cat with FIC or risk factors for UTIs. Owners should be well aware that urethrostomy is not a cure-all option and that more conservative management protocols should be attempted before surgical intervention.

The role of stress in FLUTD cannot be overstated. FIC is a sterile inflammatory process and the most common diagnosis in young cats with FLUTD. Although the pathophysiology is poorly understood, it is thought to involve the CNS/PNS, bladder, and endocrine systems. It is seen most commonly in young adult cats, multi-cat households, and cats with a history of obesity or changes in their environment. Cats with FIC have been described by Buffington and colleagues as being “sensitive cats in a provocative environment.”

While indoor cats are over-represented, outdoor cats may be affected with FIC as well, especially in areas of high population density. Adaptation to an indoor lifestyle may depend on the quality of the indoor environment and the ability of the cat to adapt. There is postulation that a neurologic predisposition towards FIC exists in some cats; stress triggers an overreaction with the bladder becoming the innocent bystander.

TABLE 2 PUBLISHED DISSOLUTION TIMES FOR COMMERCIAL URINARY DIETS. NOTE THAT TIMES ARE ASSUMED TO BE SIMILAR FOR VARIOUS FLAVOURS OF DIETS.

Diet	Median time to dissolution
c/d	27 days
c/d Stress	27 days
s/d	13 days
Urinary SO	18 days
UR St/Ox	Not listed
Rayne RSS	Not listed

WHAT CLIENTS SHOULD KNOW

As practitioners, we cannot change the nature of individual cats, however we can educate owners on changes in the home to make the environment meet the needs of the cat. It is important to shift the paradigm so that what used to be thought of as environmental enrichment should be thought of as environmental needs.

Cats are territorial animals that are not inherently social, often solitary, and self-reliant. They are both predators and prey, making them extremely sensitive to sound, scent, and motion as a means of survival. At the most basic level, they require a solitary place to eat, drink, sleep, urinate, and defecate. Food, water bowls, and litterboxes need to be located in quiet places, with impeccable hygiene. Separate water bowls, food bowls, litter boxes, and sleeping perches placed in different locations and at different heights are a basic need for each cat in a multi-cat household. Large basins should be provided for drinking and placed far from food and litter.

Cats are territorial and require the opportunity to mark their territory. Scratching must not be perceived as a problem behaviour, but as a normal feline behaviour that is a problem to the client. Readily available scratching posts of different materials, different heights, and different locations are essential for the cat to mark the home as its territory. Cat owners need to be taught to recognize subtle signs of inter-cat conflict and take steps to address this. Subtle posturing, vocalization, and behaviour cues precede violent outbursts between animals.

Cats think in both vertical and horizontal planes, making it important to locate resources at different heights. Cats love to perch to watch their world from a secure location. Safe perching spots need to be located in various places throughout the home. Single-seater

“WE CANNOT CHANGE THE NATURE OF INDIVIDUAL CATS, HOWEVER WE CAN EDUCATE OWNERS ON CHANGES IN THE HOME TO MAKE THE ENVIRONMENT MEET THE NEEDS OF THE CAT”

resting areas and perches are essential as they allow a timid cat to sleep safely on their own, without worry.

Mental stimulation with new and rotating toys, food puzzles, visible outdoor bird feeders, electronic games (i.e., tablets and cell phones), clicker training, and fetching are all ways to keep cats engaged. Playtime for a cat is not an added enrichment but a true environmental need. The Indoor Pet Initiative (www.indoorpet.osu.edu) and the AAFP/ISFM Environmental Needs Guidelines (www.catvets.com) are great resources for the veterinary team and the cat owner.

Feline lower urinary diseases are a common, frustrating occurrence in modern veterinary practice. Inappropriate urination remains a leading cause of surrender and euthanasia of domestic cats across North America. While we have made major strides towards the management of these disorders in recent years, there is still significant work to be done. Focusing our management on the environmental needs of cats and on preventing urinary disease before it occurs will allow us to continue to ensure our feline friends experience the best quality of life possible. [WCV](#)

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THE WILDLIFE REHABILITATION NETWORK OF BC

BY LINDSAYE AKHURST, RVT, AND ANGELIKA LANGEN



It is not often that a bear cub is admitted to a veterinarian's office, but in looking at this young bear, brought in after colliding with a vehicle, not too much seems wrong with him. He is climbing the fence and looking for a way out. Protocol demands sedation and examination before transport to a rehab facility. Closer inspection reveals a fractured jaw and broken femur.

I am fascinated with the perseverance and ability to deal with sometimes severe injuries that many types of wildlife exhibit. I am also intrigued to hear from experienced wildlife rehabilitators, how medications affect wildlife differently than domesticated animals and wildlife's capability to fight against the worst odds. A perfect example is this bear. After pinning the femur and wiring the jaw, the cub has a very good chance of full recovery at a licenced bear rehabilitation facility.

A few years ago, I became involved with the Wildlife Rehabilitation Network of BC (WRNBC) in part to strengthen the bond between wildlife rehabilitators and people working in the veterinary field. Rehabilitators often depend on veterinary assistance when caring for injured wildlife, and the Network (among other things) is trying to compile information to make such interactions easier and more successful. Wildlife rehabilitators work with veterinarians to provide timely medical care, diagnose injuries, and identify potential illnesses. Not all centres have veterinarians on site as many centres cannot afford to employ veterinarians on a full-time basis, and some only having access to volunteer veterinarians. Veterinarians rely heavily on rehabilitation staff, especially RVTs, to be the eyes and ears at the centres.

Though examining wildlife is not a daily occurrence by any means, it is becoming a more frequent event. Every year, thousands of injured, ill, or presumed abandoned wildlife are brought into wildlife rehabilitation centres across Canada. Many of these animals are admitted after being discovered by a member of the public, who in turn has searched for a way to help the wildlife in distress. As human populations increase, the natural ecosystems that our wildlife calls home diminish, and the demand for wildlife intervention increases.

The importance of each species in our ecosystem is recognized provincially, and natural mortality is not only normal but very important to the balance of that ecosystem. Many animals referred to wildlife rehabilitators are often believed to be in distress or injured due to a lack of understanding regarding natural behaviours. For example, in the case of a lone deer fawn in the woods or a robin fledgling found below his nest, there is no real need to intervene in such cases. But they serve as an important opportunity to educate the public and facilitate the reuniting of youngsters with their mother or finding foster parents.

Today's rehabilitation centres are regulated by codes of conduct and standards in an effort to provide a sound, humane response based on current wildlife knowledge and veterinary guidelines. It is imperative that the released animals present the least amount of risk to the wild population, and that the programs provide educational and scientific opportunities. Although public demand is one reason for the increasing development of rehabilitation centres around the world, the main reason is still a passion for helping wildlife.

Staff working in centres is able to provide appropriate housing, diets, and enrichment for each species cared for. Wild animals can also be potentially

“I AM FASCINATED WITH THE PERSEVERANCE AND ABILITY TO DEAL WITH SOMETIMES SEVERE INJURIES THAT MANY TYPES OF WILDLIFE EXHIBIT”

dangerous or carry a variety of zoonotic diseases that present a risk to humans or other animals. Wildlife rehabilitators are trained in safe animal handling and quarantine procedures and keep up to date with the latest emerging diseases. The goal of wildlife rehabilitation is to provide professional, species-specific care for injured, orphaned, or pollution-affected wildlife. The aim of rehabilitation is to return the animal to a fully recovered mental and physical state in order to be released back into the wild. Sadly, the injuries that many wild animals face are so severe that they may not be able to be rehabilitated; in most of these cases, wildlife rehabilitators provide the invaluable service of euthanasia. In other cases, where an animal may be healthy enough to be rehabilitated but deemed non-releasable because of medical or physical ailments, rehabilitators can find an appropriate and accredited permanent placement in human care.

Many rehabilitation centres have assisted in diagnosing diseases that are of importance to our wildlife populations and some that may be important for human health. They are able to take in ailing animals and help them while teaching others about our environment and advancing our medical techniques.

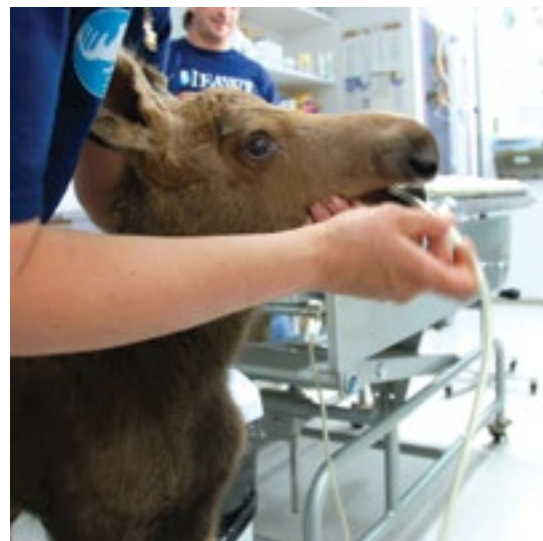
Centres associated with the Network do not necessarily respond to any large number of one specific species. However, they do provide a unique opportunity for veterinary students to assess these unique animals and learn from them. Thus, wildlife rehabilitation centres are becoming an invaluable resource province-wide. By rehabilitating non-endangered species, we improve and develop new medical techniques for when our endangered, threatened, or vulnerable species are in trouble.

“BY REHABILITATING NON-ENDANGERED SPECIES, WE IMPROVE AND DEVELOP NEW MEDICAL TECHNIQUES FOR WHEN OUR ENDANGERED, THREATENED, OR VULNERABLE SPECIES ARE IN TROUBLE”

All wildlife species require specialized care if they are to successfully recover and be released back into the wild. Additionally, stress and shock from improper handling are major killers of wildlife and causes of injuries to handlers. The animal's survival depends on a prompt and knowledgeable response. Wildlife rehabilitators are knowledgeable individuals permitted by the provincial and federal governments to provide care for orphaned, sick, or injured wild animals with the goal of releasing those animals back to their natural habitats. Wildlife rehabilitators are not veterinarians; they may not charge for their services or practice veterinary medicine. However, it is recommended that veterinarians consult with rehabilitators to ensure that proper care is provided to distressed wildlife. Please contact your local wildlife rehabilitator/rehabilitation centre before treating wildlife that has come into your clinic. A directory of permitted rehabilitators/rehabilitation centres can be found here at www.wrnbc.org. **WCV**



ALL PHOTOS COURTESY OF NORTHERN LIGHTS WILDLIFE SHELTER



FROM LEFT Operation on owl eye; stomach tube feeding moose calf; fawn with skull fracture. **PG 30** Fawn with leg fracture. **OPPOSITE** Fawn and moose getting acquainted.

NEW RESOURCES FOR WILDLIFE HEALTH

Changing patterns in globalization and urbanization are leading to an ever-increasing understanding of the relevance of wildlife health to British Columbia's human and domestic animal inhabitants. The Canadian Wildlife Health Cooperative BC node, the BC Ministry of Forests, Lands and Natural Resources Operations, and the BC Ministry of Agriculture would like to announce several resources for those interested in wildlife health and diseases in BC.

The new provincial government's Wildlife Health website is available at www.gov.bc.ca/wildlifehealth. The website includes information on BC's wildlife health program in action, information on health and disease in many different wildlife taxa, and

resources on how to report or submit sick, injured, or dead wildlife.

The 2014/15 Annual Report of the Canadian Wildlife Health Cooperative (CWHC) is available for download at www.cwhc-rscf.ca/annual_reports.php. The report is meant to raise awareness of the CWHC's response to some of the varied challenges facing wildlife on a regional and national level and to highlight the efforts of the CWHC to protect the health of wild animals.

Lastly, for those interested in staying connected on information, issues, and projects related to wildlife health within BC, the CWHC BC node is continuing to develop our BC Wildlife listserv. To subscribe to the listserv, send a blank email to bcwildlife+subscribe@cwhc-rscf.ca. **WCV**

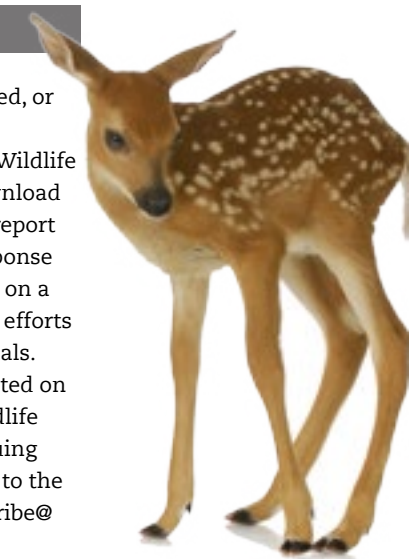


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CHOOSING BETWEEN FINANCING WITH A LOAN OR A LEASE

Start by comparing interest rates. A lower interest rate must be cheaper and therefore better for you, right? That is not always true, and the lack of a proper understanding about what interest rates mean can make such comparisons misleading.

Interest rates are meant to reflect the level of risk involved, and that risk is shared between you and the financial institution. Lower risk for the financial institution means higher risk for you, and vice versa. You can see the effect of this when you compare a variable rate and a fixed rate. A variable rate is very low risk for the financial institution because they can just raise the rate when they want. It is you who are carrying the risk of a rate increase, but you can eliminate that risk by paying a higher fixed rate. In return for receiving this fixed rate, you are protected from rate increases and you have more stability for your financial planning. Interest rates are currently at historic lows, with speculation circulating over when the first rate increase will happen, so now is a great time to choose a fixed rate.

Another common misconception about interest rates is the belief that all rates represent the same thing. Today, interest rates for a lease are almost always higher than the interest rate for a loan, and few people understand that one reason for this is that the interest rate on a loan (the loan rate) is applied differently than the interest rate on a lease (the lease rate).

When using a loan, you are borrowing to pay the full price including all sales taxes. For example, when you buy an X-ray machine that costs \$100,000 plus tax, you will also be paying the 5 per cent GST and 7 per cent PST in BC, so you will actually borrow \$112,000. The loan rate is then applied to \$112,000, and no sales taxes are added to the monthly loan payments. When you lease new equipment, the lease rate is applied to the pre-tax price of only \$100,000, with the sales taxes added to the monthly lease payments.

So how does one compare a 3 per cent loan for \$112,000 with a 5 per cent lease for \$100,000? By looking beyond the interest rates and understanding how much it will actually cost you.

INCOME TAX WRITE-OFFS AND BENEFITS

The cost of new equipment is a tax deductible expense for your business. However, buying the equipment (with or without a loan) and leasing the equipment have very different effects on your income taxes.

When you purchase equipment, you can deduct 10 per cent of the purchase price in the first year, then 20 per cent of the remaining balance in each subsequent year. The yearly interest charged on a loan is also tax deductible. It can take more than 10 years to deduct the full cost of the equipment and receive those tax savings.

When you lease equipment, you are able to deduct 100 per cent of the value of your lease payments each year. This means that you will deduct the full cost of the equipment over the term of the lease, which can be as short as three years, and you will receive the tax savings as soon as possible.

When you take the total cost of all your payments and subtract the value of your income tax savings, you will see the actual net total cost of financing. We can apply this concept to the X-ray machine example with a five-year financing term:

	LOAN	LEASE
Total amount financed	\$112,000	\$100,000
Loan or lease rate	3%	5%
Monthly payment (tax incl.)	\$2,013	\$2,105
Total payments (60 months)	\$120,780	\$126,300
Tax deductible expenses	\$79,462	\$126,300
Value of tax deductions (est. 15% tax rate)	\$11,920	\$18,945
Net total cost of financing	\$108,860	\$107,355

While the loan has a lower interest rate and monthly payment, the lease provides greater tax savings and a lower total cost over the five-year term.

OTHER CONSIDERATIONS

There are many other aspects to consider when choosing between a loan and a lease. Some lenders will require that you make a down payment, put up security or collateral, or sign a general security agreement which can put your personal assets at risk. Most leasing companies provide 100 per cent financing with no down payments or security, as the only security required is the new equipment itself.

It is common to find loan or lease agreements with hidden charges, such as administrative set-up fees, an extra charge for every invoice paid on your behalf, or a yearly fee for providing you with the documents necessary for year-end financials. These extra charges effectively disguise your actual total cost without increasing the interest rate. It is important to read the terms and conditions on the agreement contract and explicitly inquire about any extra charges. [WCV](http://WCV.com)

FINANCING YOUR NEW EQUIPMENT LEASE VS. LOAN

BY GRAEME SCOTT

New equipment, like a new car, loses value as soon as you buy it. You have paid full price yet have not received any value or any revenues from it. Financing the equipment allows you to pay for it month-by-month as you are realizing the value it provides to you. This results in a more balanced relationship between your expenses and your revenues.

Once you have made the decision to acquire a new piece of equipment for your practice, you will be faced with deciding how to pay for it. You will be in a much better position if you have already put some thought into this and discussed it with your accountant and financial manager or consultant. Even if you have the cash available for the purchase, there are several other things to consider when determining the best option for how to pay for the equipment. Financing the purchase with a loan or on a lease can benefit the financial health of your business through cash flow management and income tax savings.

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SARA WATT, DVM

This summer I was extended the opportunity by the CVMA-SBCV Chapter to attend the Emerging Leaders Program at the CVMA conference in Calgary. It was, overall, a fabulous experience. My adventure started with a wonderful night's stay in the Hyatt Hotel in downtown Calgary. The next morning, I shared my breakfast table with some pretty impressive veterinarians, such as the president of the AVMA and the Dean and Associate Dean of Mexico City's veterinary college. I was surprised to learn that Mexico's college educates more vets than all Canadian veterinary colleges combined. It was an exciting morning, and even though I felt a little out of place at that breakfast table, it was inspiring to learn that all these people started off their careers as veterinarians much like myself.

The morning session of the program started off with Dr. Rick DeBowes asking us to describe our typical day at the vet clinic. We unloaded comments such as no lunch, overworked, long hours, which started to depict an overall air of dissatisfaction among us young veterinarians in the work force. I am embarrassed and perhaps a little ashamed to say that I had been feeling this way for some time now, and to learn that I was not alone was humbling. Over the course of the day, we learned to determine what a successful, more fulfilling day would be like, what sort of things are important to us, and how to obtain this goal not only at work but in our personal life as well. We also learned as a group how to interact more effectively with each other by overcoming our own personal insecurities. As a group, helping each other solve a simple problem such as walking across a room without our feet losing contact with our partner's, we learned that many minds working together is so much better than one working alone. We also learned to trust one another, as being a good leader also requires us to allow ourselves to be led at times. Not only did I learn that leading requires working together and trusting each other, but also that leading by example at work and in our personal lives can allow us to be happy in life. I had an awesome experience in Calgary, and I feel so grateful for having had the opportunity to attend this past summer's CVMA conference. I have come away refreshed and with a renewed excitement for my career.

JENNIFER VAN DER LEE, DVM

I remember my burnout day well. It was October 3, 2013—about a year and a half after graduating vet school, I was working in a busy, multi-vet, small animal practice. We were short-staffed, with numerous emergencies (one ended up being reported to the SPCA and local authorities for animal abuse), and for some reason we had a plethora of clients who couldn't pay the bills. That 14-hour workday finally ended, but not without low blood glucose levels, high caffeine levels, and sleep deprivation from being overworked the days before. I officially regretted being a veterinarian and instantly thought about pursuing other career options. Going back to school felt like a joke as I had spent nearly a decade of my life in school accumulating debt. Because of my heavy financial burden, I felt stuck, and lost, and obligated to this career. I needed guidance. So I sat down with my boss, at the time and she told me about burnout. "Every vet goes through it," she said. "Sometimes you just need to hang in there." So I did.

Several years later, I am feeling much better. There are two main reasons for that. I did not feel passionate about what I was doing and where

THE EMERGING LEADERS PROGRAM TWO VIEWS

I was doing it, so I relocated to a different clinic. This new clinic was much better suited to my lifestyle and had a more energetic, friendlier, and overall happier work environment. It's amazing how working with people you care about and who in return care about you can make all the difference.

The second reason is because my eyes were opened to the truth behind my first reason. This year, I had the opportunity to attend the Emerging Leaders Program, and I was pleasantly surprised. My half-hearted outlook on life was suddenly transformed. I entered the room with a stale mind and came out refreshed and rejuvenated—not only about working in the veterinary profession but about my personal life as well. This was mostly due to Dr. Rick DeBowes' lecturing style, enthusiasm, and knowledge. He taught using a mixture of lecture time, group discussion, and team-building activities. In doing so, he encouraged us to step out of our comfort zones (be prepared to dance and act goofy) and to tackle the fear that inhibits success and happiness. It really made me realize what it means to be part of a team. I also learned to connect with others on a personal level and build trust. As a result, I have learned to communicate more effectively, stay positive under stressful situations, and be a bright influence to others around me.

Although I still have a way to go, every day I strive to do better. I recommend that everyone, in or out of the veterinary profession, attend this course. It will benefit those feeling lost or stressed with their life, and those starting to doubt their career path, as I was. It is also incredibly useful in building and maintaining healthy and successful relationships in and out of the workplace. All in all, the ELP was the highlight of my CE experience at this year's CVMA Convention. Thank you for such a wonderful opportunity. **WCV**

THE 2015
CVMA-SBCV CHAPTER
**SCHOLARSHIP
RECIPIENTS**

This year marks the first year in which the CVMA-SBCV Chapter awarded scholarships to second-year BC students at WCVM. Two scholarships were awarded, both for academic excellence, one of which included an interest in equine medicine.

JESSICA PARAVICINI

I consider myself fortunate to have grown up on a small hobby farm in the beautiful seaside town of Qualicum Beach. This gave me the opportunity to care for beef cows, horses, sheep, dogs, and cats. At a young age, I started taking riding lessons, which progressed into owning and training my own horses. Living in a scenic area motivated me to spend my free time hiking, camping, and snowboarding. Staying close to home, I completed a Bachelor of Science, majoring in Biology, at Vancouver Island University. During the first few years of my time at VIU, I gained a keen interest in animal physiology and parasitology. It seemed like veterinary medicine had the potential to provide me with a challenging career that could pair my medical interest with my love of working with animals. In my final year at VIU, I had the great opportunity to conduct a research study investigating the prevalence of chewing lice infecting black-tailed deer. This experience strengthened my conviction that I wanted to pursue veterinary medicine as a career. The summer after completing my first year at WCVM, I got to work in a small animal clinic, which enabled me to experience the daily routine of a busy practice and appreciate the practical application of the information I am being taught in school. So far, my time at WCVM has been entertaining and informative. I am so thankful for all the assistance I have received in entering the veterinary profession.

MAIA ASPE

I grew up in the small town of Oliver and later moved to Langley. This is where my love for horses evolved, and I competed extensively on the show-jumping circuit throughout Western Canada and the United States. From this experience, my respect for equine practitioners and my passion for veterinary medicine blossomed. This was further expanded by my training and employment at Paton and Martin Veterinary Services, a referral practice in Aldergrove that specializes in surgery, reproductive, internal, and sports medicine. This spurred me to attend the University of British Columbia and set my sights on attending the WCVM. I am now in my third year at the WCVM, and since the day I arrived, I have been captivated by equine medicine. I have since spent two summers employed at Heide Veterinary Services in Red Deer, AB, a primarily equine practice specializing in advanced reproductive technologies. My experience at this clinic has been instrumental in developing my clinical skills and inspiring me to continue with equine medicine, especially neonatal intensive care. I plan on focusing my studies further throughout my third and fourth years so that I can apply for an internship emphasizing a particular field. I would like to eventually join or develop an equine practice that has a hospital and ambulatory portion. In addition to the hospital, I would like to operate a long-term care facility for advanced laceration repair and rehabilitation. That being said, I am still open to other specializations and am excited to explore new avenues in the equine field. [WCV](#)

ABOVE Dr. Sarah Armstrong, President of the CVMA-SBCV Chapter, and WCVM Dean Douglas Freeman present two new scholarship awards to Jessica Paravicini (in first photo) and Maia Aspe (in second photo).



REVISIONS TO THE PREVENTION OF CRUELTY TO ANIMALS ACT THAT AFFECT VETERINARIANS

PROVIDED BY THE BCSPCA

CRITICAL DISTRESS

Veterinarians are often the sole providers of emergency care in their community and are often called upon at all hours to relieve critical distress. Prior to May 14, 2015, due to the way BC's *Prevention of Cruelty to Animals Act* (PCA Act) was written, veterinarians were required to seek approval from an authorized agent before euthanizing an animal which was in critical distress. With only one agent on night duty, the BCSPCA could not always respond immediately, and many veterinarians faced the challenge of having to wait with the suffering animal before they were able to reach someone to authorize euthanasia.

A change of legislation now makes it possible for a veterinarian to deem an animal in critical distress and euthanize it. Under the PCA Act, when an animal is in distress, it is:

- a) deprived of adequate food, water, shelter, ventilation, light, space, exercise, care or veterinary treatment,
 - (a.1) kept in conditions that are unsanitary,
 - (a.2) not protected from excessive heat or cold,
- (b) injured, sick, in pain or suffering, or
- (c) abused or neglected.

Critical distress, then, is an animal that is suffering from any of the above and veterinary treatment cannot prolong the animal's life or prolonging the animal's life would result in the animal suffering unduly.

A veterinarian now has the appropriate authority to take immediate action to end the suffering of an apparently ownerless animal.

DAIRY CODE

In addition to the changes above, this revised legislation provides veterinarians, animal protection officers, farmers, and the Courts with greater clarity about what specific standards must be met in order to demonstrate adherence to "generally accepted practices" when it comes to dairy cows. Producers that are not meeting these standards have limited defence against

"THIS IS THE FIRST TIME IN BC HISTORY THAT AN AGRICULTURAL CODE OF PRACTICE HAS BEEN REFERENCED IN LAW"

a charge of animal cruelty for causing distress to an animal. For example, under the Dairy Code, producers must not tail dock unless for medical reasons, they must provide pain control when dehorning, castrating or branding, and they must treat or euthanize any sick or injured animal.

This is the first time in BC history that an agricultural Code of Practice has been referenced in law. Seven other provinces have already adopted industry codes or guidelines directly in their regulations, five of which are related to farm animals. [WCV](#)

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Calgary, AB
www.wcabp.com
- 23-26 **42nd IETS Annual Conference**
Louisville, KY
www.iets.org/2016
- 28-30 **OVMA Conference & Trade Show**
Toronto, ON
www.ovma.org/upcoming_events/conference

FEBRUARY

- 5-7 **The 2016 Central Canadian Veterinary Conference**
Winnipeg, MB
www.mvma.ca
- 21 **Dentistry Lecture**
TBA, AB
Royal Canin, Serona Animal Health
www.cavm.ab.ca
- 22 **Dr. Michael Dryden**
Victoria
www.merial.ca
- 23 **Dr. Michael Dryden**
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MARCH

- 6-10 **Western Veterinary Conference 2016**
Las Vegas, NV
www.wvc.org/conference
- 7 **Femoral**
Kelowna, BC
www.focusandflourish.com
- 22-23 **2016 Livestock Care Conference**
Olds, AB
www.afac.ab.ca/conferences
- 29-1 **CE and Ski Radiology Retreat**
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APRIL

- 2-3 **Basic Echocardiography**
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» Virbac Canada Inc. has announced the launch of PRONEFRA™ Palatable Oral Suspension, a new Virbac product that supports the normal function and health of kidneys in cats and dogs. For more information, visit www.virbac.ca.

» Modern Veterinary Therapeutics, LLC has announced that the Veterinary Drugs Directorate has approved Ketoprofen VTM (ketoprofen injection –100mg/mL) in Canada. Ketoprofen VTM, presented in 100mL and 250mL vials, is a nonsteroidal anti-inflammatory agent possessing anti-inflammatory, analgesic, and antipyretic properties. For more information, visit www.modernveterinarytherapeutics.com.

» The Canadian Veterinary Medical Association (CVMA) is pleased to announce a four-year agreement with Virox Animal Health to exclusively sponsor the CVMA's Emerging Leaders Program (ELP), which is geared towards veterinary graduates and experienced professionals alike to develop leadership and communication skills. For more information, visit www.canadianveterinarians.net.

BC CENTRE FOR DISEASE CONTROL'S NEW PUBLIC HEALTH VETERINARIAN

Dr. Melissa McLaws has recently joined the BC Centre for Disease Control (BCCDC) as the Public Health Veterinarian. Her role is to provide veterinary public health expertise to BCCDC and BC partners in assessing and managing zoonotic health risks to the public. Her primary focus is to manage the new animal rabies program, providing advice and support to private vets and public health professionals on risk assessment and management. She will also be involved in managing the new reportable animal zoonotic diseases program and providing input in public health issues involving animals such as foodborne diseases, Ebola, leptospirosis, and others.

Melissa graduated from WCVM in 1998. After a couple of years in mixed practice, mostly in Kelowna, she returned to study and obtained a PhD in Epidemiology from U of Guelph in 2005. Since 2010, she has been working as a consultant at the UN Food and Agriculture Organization on surveillance and control of foot and mouth disease. Prior to that, she worked at the International Livestock Research Institute in Indonesia and at Alberta Agriculture and Food.

Melissa is very happy to be back in BC and looking forward to working with BC veterinarians on issues related to zoonotic disease and veterinary public health. She may be reached at 604-829-2110 or at melissa.mclaws@bccdc.ca.



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- ✓ Long-term benefits of improved quality of life and stabilized weight⁴⁻⁶

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