



CANADA'S VETERINARY TEAM NEWSMAGAZINE

JULY/AUGUST 2019 VOLUME 1, NO 4



SPARK A CONVERSATION. SPARK HIS METABOLISM.

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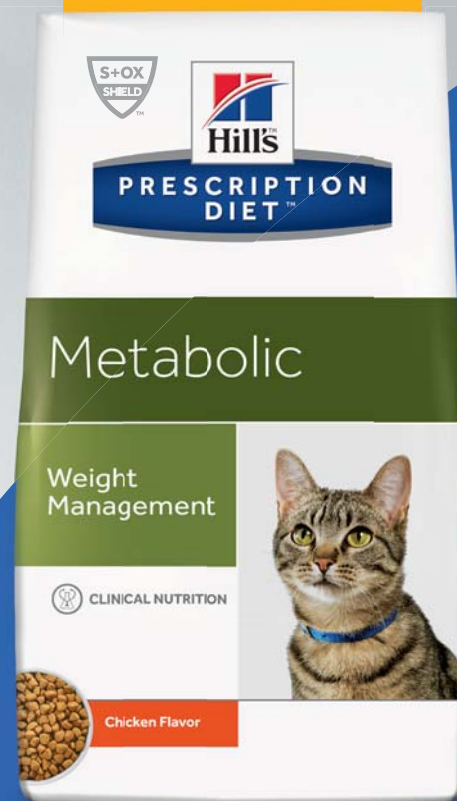
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VETS' #1 CHOICE



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VET Old surgeries – new controversies: the spay/neuter dilemma

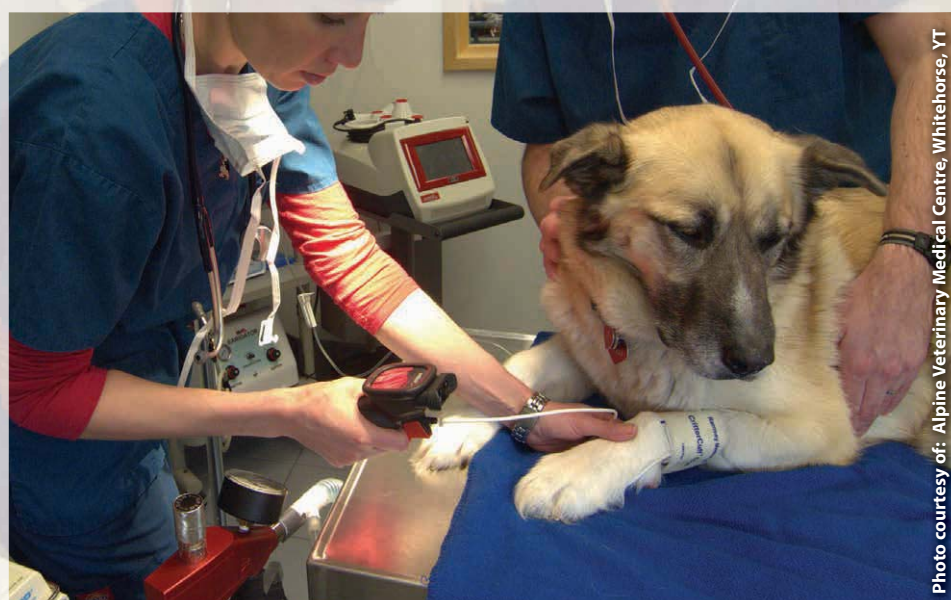


By Audrey Remedios, DVM, MVetSc
Diplomate American College of Veterinary Surgeons

Pet owners, breeders, and some veterinarians are recently challenging conventional views on spaying and neutering of dogs and cats. For many years in North America, we, in the veterinary profession, have recommended sterilization of animals between the age of 6 to 8 months. However, many owners now choose

to sterilize their pets after sexual maturity, and some choose not to have any surgery done at all. Breeders are also advising to keep pets intact hormonally by advocating ovary-sparing spay (hysterectomy) and vasectomies. What

The spay/neuter dilemma continues on page 2



Dr. Heather McCann and Dr. Kim Friedenberg demonstrating emergency veterinary procedures with Dr. Helen Eddy's dog, "Holly".

Photo courtesy of: Alpine Veterinary Medical Centre, Whitehorse, YT

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VET Treatment plans for routine and difficult to control seizures

HALIFAX, NS – Deciding on a treatment plan for an animal with seizures depends on a number of factors, including the suspected etiologic cause of the seizures, the frequency and severity of the observed seizures, and the financial constraints or intentions of the owner, explained Christopher L. Mariani, DVM, PhD, DACVIM (Neurology), speaking at the Atlantic Provinces Veterinary Conference.

Address the underlying cause

If an underlying cause of seizures is known, it should be appropriately addressed, if possible, advised Dr. Mariani. He said that animals with hypoglycemia or electrolyte abnormalities may only require correction of these deficiencies or excesses. Short-term anticonvulsant therapy may be sufficient for patients with hepatic encephalopathy, hypertriglyceridemia or various intoxications. Animals with intracranial diseases, however, are more likely to require maintenance anticonvulsant therapy.

Maintenance anticonvulsant therapy

Maintenance anticonvulsant therapy is the cornerstone of therapy for patients with idiopathic or unknown epilepsy.

Seizures continues on page 6

VET Pet obesity rates plateau and nutritional confusion grows

Pet obesity remains a serious health threat as pet owners and veterinary professionals confront conflicting nutritional and weight loss advice.

U.S. pet obesity rates remained relatively unchanged in 2018, with 59.5% of cats and 55.8% of dogs classified as overweight or obese, according to the Association for Pet Obesity Prevention (APOP). During the 11th annual survey, APOP also found pet owners and veterinary professionals were confused by conflicting pet nutritional advice and continue to struggle to help pets achieve safe and ideal weights.

"Veterinarians need to offer more obesity treatment options than 'feed less and exercise more'," states APOP President, veterinarian Dr. Ernie Ward. "The majority of pet owners are overwhelmed with pet food choices and conflicting dietary advice and desperately want help and nutritional recommendations from veterinarians."

In the October 2018 clinical survey, 25.7% of cats and 36.9% of dogs were classified as *overweight* (body condition score (BCS) 6 to 7 on a 9-point scale). 33.8% of cats and 18.9% of dogs with *obesity* (BCS 8 to 9) by their veterinary healthcare professional. That equals an

Pet obesity continues on page 9

The spay/neuter dilemma *continued from page 4*

precipitated these changes? Blame it on the internet!!! The online world supplies unsubstantiated information about animal health, including spaying and neutering. There are numerous dog and cat forums and blogs that reflect opinions and disseminate information from 'scientific studies'. However, the scientific literature that has been published is weak. Most studies on this topic are retrospective which means variables such as diet, exercise, lifestyle, and genetics are uncontrolled. Many were conducted through telephone surveys only, where the diagnoses were not confirmed by radiography, blood work, or histology as assessed by veterinarians. Such research is also conducted through referral and academic institutions so that the types of cases reported are skewed towards more complicated patient conditions. In addition, many studies that link spay and neuter, especially juvenile sterilization, to orthopedic, metabolic, and cancer problems, are based on one breed only. Finally, associations between surgical de-sexing and the occurrence of certain orthopedic and neoplastic diseases do not prove cause and effect. These factors affect the strength and validity of these studies. We, as veterinary professionals, need to consider the sources of such information and assess the research critically.

The decision to spay or neuter

First, let's consider whether dogs and cats should be spayed or neutered at all. The 2017 position statement from the Society of Theriogenology and American College of Theriogenologists states "The ACT and SFT believe that companion animals not intended for breeding should be spayed or neutered; however both organizations believe that the decision to spay or neuter a pet must be made on a case by case basis taking into consideration the pet's age, breed, sex, intended use, household environment and temperament. The use of generalized rules concerning gonadectomy is not in the best interest of the health and well-being of the pets or their owners." In other words, while both organizations support spaying and neutering of pets, they think veterinarians need to discuss with owners the advantages and disadvantages of these surgeries. These consultations are best achieved at individual clinics where veterinarians know their clients and trust them to be responsible pet owners who will not allow their intact pets to roam freely, endangering themselves and others. Intact male dogs especially pose a risk to their families and community, accounting for most of the dog bite fatalities on humans.

The sad fact is that many animals are brought into animal shelters and rescue organizations every year. It has been estimated that about 50% of these animals are euthanized even if they are healthy and friendly, simply because there are not enough homes. Thus, these organizations must perform early, pediatric spays and neuters on all the patients before they are adopted, otherwise many new owners simply do not bring the animals back for surgery that are scheduled later.

Problems associated with early age spay or neutering

Spaying and neutering have been purportedly linked to various problems including behavior, obesity, and orthopedic, medical, and neoplastic conditions. Regarding behavior, several papers have documented that early age (less than 6 months) de-sexing in

both dogs and cats results in animals that are shy and noise sensitive. One recent study documented that fear to unfamiliar people was increased in dogs gonadectomized between 7 and 10 months. However, these animals are much less likely to urine spray, roam, and show aggressive tendencies. Fighting and dominance aggression are not reduced when dogs are castrated as adults.

Obesity, a huge problem in our pets, has also been linked to surgical sterilization. One comprehensive study looked at 1,930 canine medical records from a corporate chain of veterinary clinics and found 66% of altered pets to be overweight, versus 37% of intact animals. Altered male and females were at equal risk of being overweight. Interestingly, the age at surgery did not affect the body score so that early spay and neutering did not result in fatter animals than those done later in life.

Early spay and neutering, however, does affect the skeletal growth of the juvenile animal. The absence of gonadal hormones causes delayed closure of some physis in young dogs, particularly those of the radius, ulna, and tibia. Such puppies develop longer limbs, especially the antebrachium and tibia, and have narrowed heads and thoraces. It has been speculated that the delayed closure of the proximal tibial physis in relation to the normal distal femur angles the stifle differently, which may predispose to the development of cranial cruciate disease. Several studies have reported a 2 to 3 times higher incidence of cranial cruciate rupture in neutered and spayed dogs. Males neutered at less than 6 months of age can develop excessively steep tibial plateau angles (greater than 34 degrees) predisposing them to cruciate rupture. De-sexing surgeries have also been associated with increased incidence of cruciate disease in Golden retrievers and German Shepherds. However, there are other reasons that may cause dogs to rupture these ligaments. In some dogs, such as Newfoundlands, a recessive mode of inheritance involving several chromosomal regions make it much more likely that this orthopedic disease occurs in this breed.

Hip dysplasia is another orthopedic condition that may be affected by early spay and neutering. One study from 2008, was based on a telephone survey. It reported a 7% incidence of this disease in pups altered before 5.5 months of age, and 5% after this time. Compared to intact dogs, there was a 17% overall increase in neutered males whether they were neutered early or late in life.

The association between physeal dysplasia and early neutering in male cats has been suggested since many kittens are now neutered at very young ages at shelter organizations, while at the same time, physeal dysplasia is becoming more common. However, research documenting a cause and effect is sparse. In fact, a radiology study of the pelvis and femur in 808 cats found that some physes did close later in cats that were neutered early but not the physis of proximal femur, which is the location where physeal dysplasia occurs.

Medical disorders including urinary incontinence and immune diseases have also been linked to spaying and neutering. The incidence of urinary incontinence after early spaying of dogs is 5 to 7%, and the earlier the surgery occurs, the higher the risk. Interestingly, larger breeds over 15 kg, that are spayed early, develop more incontinence than smaller dogs. A recent retrospective



Despite being intact, this radiograph from a 16-month-old, male, German Shepherd shows joint effusion, osteophytic changes and a high tibial plateau angle consistent with a rupture of the cranial cruciate ligament



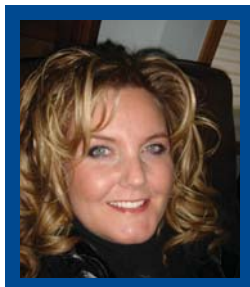
Radiograph of a male, Labrador cross dog, that was neutered at an early age, and diagnosed with severe hip dysplasia at 11 months of age



Radiograph of a 2-year-old, neutered male, domestic short haired cat, that exhibited pain and lameness associated with a pathological fracture of the femoral head secondary to physeal dysplasia

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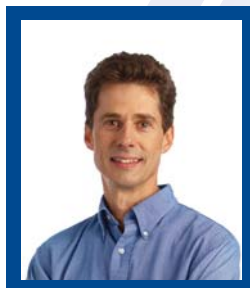
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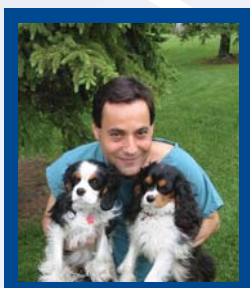
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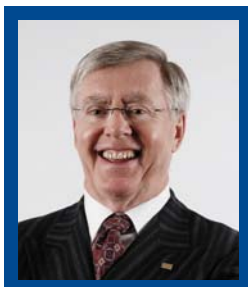
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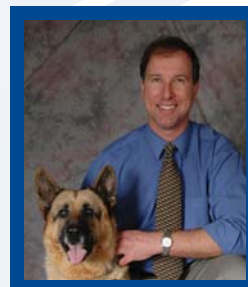
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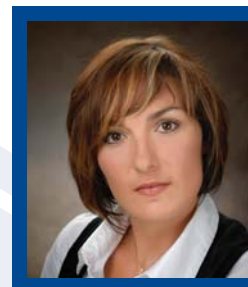
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CANADA'S VETERINARY TEAM NEWSMAGAZINE



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Publishing magazines for veterinary professionals since 2005. Published six times annually by K2 Animal Health Publishing.

Telephone: 905-607-7338 **Fax:** 905-607-0181

Each clinical article in *Canadian Vet Practice* is veterinarian/veterinary technician reviewed prior to publication.

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VetLaw

**'Knowing your limitations':
a primer on referrals to veterinary specialists**

Veterinary medicine has continued to evolve at a rapid pace, adopting human medicine models relating the development of various specialties; while some level of veterinary specialization has existed for decades, both the number of specialists and the breadth of services performed has grown, as has the number of accrediting bodies for such specialties. The relationship between the general practitioner and the board-certified diplomate of a speciality college is generally a good one; however, both participants should be mindful of the legal implications of their relationship with each other.

Standards of care

All veterinary practitioners, generalist or specialist, have a legal duty to meet the relevant standard of practice; in other words, within the context of their professional service delivery model, all veterinarians must discharge their duties to their patients and clients to the same standard as a 'reasonable practitioner in similar circumstances'. As such, while the test is objective, the circumstances given rise to the application of the standard will be dependent upon the facts of any particular case. In the context of this discussion, in the event that a general practitioner genuinely believes that the delivery of the necessary and recommended service is beyond the scope of his or her competency, then the generalist should undertake to refer the matter to alternative care, typically a specialist. This calls upon the generalist to carefully consider his or her own abilities, with the knowledge that proceeding with a matter that is beyond his or her competency may compromise results, giving rise to a potential claim. Indeed, specialists must deliver their services in a like manner; that is, the specialist must meet the standard of a reasonable specialist in similar circumstances. That being said, it is relatively rare for one specialist to refer a case to a specialist colleague.

Informed consent

As you know, prior to undertaking any medical or surgical procedure it is necessary to obtain the informed consent of the owner. This would include advising a client of the nature of your experience with any particular disorder, noting that one might be willing to proceed with any particular treatment but alerting the client that as a result of inexperience there may be increased risks. So long as the client has been informed of the material and probable risks, including the potential for problems arising from lack of knowledge, then appropriate consent will have been obtained. That being stated, general practitioners are encouraged to not proceed with any form of treatment unless there is complete confidence in one's abilities to deliver the service to the appropriate standard of care. The mere fact that a client has consented does not similarly act as a release of liability if the standard of care has not been met. In such cases,

a separate form of Waiver of Liability would be helpful but not determinative of releasing one from liability.

Resistance to refer

Too often, generalists resist the need to refer a case to a specialist out of fear that the client will think that the generalist is incompetent; in truth, my experience is that this is not the case. In most cases, the client sincerely appreciates that the generalist is so concerned about the well-being of the animal that the referral to another practitioner is viewed as a positive aspect of the generalist's practice. Clients always seem to appreciate when a professional acknowledges his or her limitations and acts in the best interests of the client. Notions of professionalism dictate that we must place our client's interests above our own.

Negligent referral

Prior to making a referral, the prudent generalist will inquire about the experience and credentials of the specialist. Although rare, the generalist who makes a referral to a specialist that does not have sufficient skill and knowledge can be exposed to liability arising from making a negligent referral. The general practitioner should do some basic due diligence and encourage the client to do likewise prior to engaging the specialist.

Declining an engagement

All veterinarians should be aware that they are at liberty to decline any engagement so long as a veterinary/client/patient relationship has not been established; once the VCPR is in place, then the practitioner has an obligation to proceed within the scope of the engagement. If the matter becomes too complex for the generalist's skill set, then terminating the VCPR and making the referral is an appropriate course of action. Sometimes the client will resist the referral on the basis of increased costs or inconvenience; in such cases, the general practitioner should not be 'lulled' into proceeding with treatment that he or she knows is beyond his or her competency without attempting to persuade the client of the advantage of referral. Failing this, depending on the nature of the case, proceeding with the benefit of a Release after a thoughtful discussion on consent may be in order; as well a discussion of humane euthanasia may be appropriate.

Mr. Jack is counsel at the law firm of Borden Ladner Gervais, LLP ("BLG") with a mandate to serve the needs of the veterinary community and enhance it on a national basis. Mr. Jack chairs a focus group relating to veterinary legal matters within the firm's Healthcare Group. He can be reached by email at dcjack@blg.com or by telephone at 1-800-563-2595.



Douglas C. Jack, B.A., LL.B.



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search of the medical records of 90,090 dogs at an academic institution reported higher risk of immune-mediated diseases such as immune-mediated hemolytic anemia and thrombocytopenia, hypoadrenocorticism, hypothyroidism, and inflammatory bowel disease in neutered male dogs. Spayed females had a higher incidence of lupus erythematosus than intact females.

Breed specific issues

Neoplastic diseases, particularly lymphoma, hemangiosarcoma, osteosarcoma, and mast cell tumour, have been reported as having a higher incidence in sterilized, purebred dogs. However, most studies are retrospective, originate from an academic or referral institution, and most importantly, involve

one breed only. In 2013, the medical records of 759 Golden retrievers, from 2000 to 2009, were examined. The results of this study do not demonstrate a clear association. Early neutered males were found to develop lymphoma at 10%, which was 3 times more than intact males, and 12 times more than late neutered males. In early spayed females, the incidence of lymphoma was 7%, 2 times more than intact and late neutered females. The results are even more confusing regarding the occurrence of hemangiosarcoma where the incidence of this disease is similar between intact and early neutered males but is 50% lower in late neutered males. Late spayed female Golden retrievers have a 3 times higher occurrence of hemangiosarcoma than dogs that were spayed early or intact. The occurrence of mast cell tumours is similar among

early and late neutered, and intact males. However, in late spayed females, the disease is 2 times higher than in those spayed early and 6 times higher than intact animals. Necropsy results from 655 Golden retrievers showed that this breed has a very high incidence of cancer (65%), mostly from lymphoma (18%) and hemangiosarcoma (22.6%). There was no difference in the median age of death between intact and neutered males. However, spayed females died earlier from cancer. As such, Golden retrievers seem to be a very predisposed breed to developing malignancies, whether they are neutered or not.

Rottweilers are a breed that is commonly affected by osteosarcoma. Several studies suggest that this problem may be influenced by the spay neuter status. The first was a 2002 telephone survey in which owners of 683 Rottweilers were contacted. There was 12.6% incidence of bone tumours, which is higher than the general canine population, suggesting a predisposition to this disease. Both spayed and neutered dogs were at 3-4% risk if the surgery was done before 1 year of age. The lifetime risk if sterilized before 1 year of age was 1:4 and the younger the dog when surgery was done, the higher the risk. A more recent study from 2017 examined whether “ovary conservation” was important to the overall longevity of female Rottweilers. When dogs had their ovaries for longer (greater than 4.3 years), they lived longer, about 17 months longer than females spayed at a younger age. Overall, female dogs that were left intact had a 33% decrease in mortality.

Positive effects of spaying and neutering on animal health

Conversely, there are many positive effects on animal health after spaying and neutering. In females, these include a decreased incidence of mammary, ovarian and vaginal tumours. There is also no chance of pyometra, vaginal prolapse, mastitis, dystocia and other problems associated with parturition.

Decreased development of mammary tumours after spaying in dogs was first reported in 1969. This study reported that dogs spayed before the first heat had only a 0.05% chance of developing mammary cancer, then the statistics increase after each heat cycle. However, these results were questioned by a 2012 meta-analysis. There were only 13 reports on this topic reviewed systematically by 2 independent reviewers, most were rejected for high-risk bias, and only two papers were found to substantiate a protective effect of spaying. In cats, the information is clearer as mammary tumours are invariably malignant (greater than 90%) so that there is a 91% reduction in risk if kittens are spayed before 6 months of age.

Spaying of females also eliminates the problem of pyometra, which occurs in 15-24% of adult dogs. The older the dog, the more likely this disease will occur. When geriatric dogs develop this potentially life-threatening disease, surgery is more difficult and intensive care may be needed, thus, incurring higher costs, making it more difficult for owners to treat due to financial constraints, and resulting in euthanasia.

In males, diseases of the prostate, such as benign prostatic hypertrophy, prostatitis, prostatic cysts, and abscesses are eliminated by neutering. As well, perineal hernia and adenomas, and testicular tumours do not occur.

Emerging trends

Considering all the evidence for spaying and neutering and that against those surgeries, some trends emerge. There are several studies that suggest spaying and neutering may increase the risk from certain cancers, especially lymphoma, hemangiosarcoma, osteosarcoma and mast cell tumours, in certain breeds, Golden retrievers and Rottweilers. These dogs seem predisposed to such diseases, for reasons that are probably more than sterilizing surgeries. In fact, the lifespan of intact dogs of any breed is less than that of sterilized dogs. The average age of death in intact dogs is 7.8 years versus 9.4 in those altered. Spayed females have an increased life expectancy 26.3% higher than intact females. Neutered males live 13.8% longer than intact males. Intact dogs are more affected by trauma and infectious diseases at younger ages. Sterilized dogs, depending on the breed, are more likely to die of immune-diseases and cancer, primarily from specific neoplasms.

When to spay or neuter

In cats, recommendations for the ideal age to spay and neuter is straightforward. They should be sterilized at less than 5-6 months of age. Some females can

come into heat at 4 1/2 to 5 months of age, so earlier is better.

In small and medium sized dogs, the orthopedic and oncologic problems that can occur after sterilizing large dogs are not as common. For males, they can be neutered prior to sexual maturity, at 6 months of age. For females, the benefits of prevention from mammary cancer still outweigh the potential risks of cancers and orthopedic conditions so that surgery is recommended before the first heat at 6 months.

For owned, large breed, male dogs, there is enough evidence to delay castration until after the physis are closed at 1 to 1 1/2 years of age to decrease the risk of orthopedic problems. For large breed females, the decision to spay or not, and at what age is very problematic. Whilst spaying at 6 months will affect skeletal growth and may predispose to orthopedic and some neoplastic diseases, it will be protective against the development of mammary tumours. For owned dogs, these decisions will depend on the breed and need to be made upon consultation with each owner. According to the study on ovary conservation in female Rottweilers, dogs spayed after 4.3 years of age lived 17 months longer than dogs spayed earlier. However, spaying a large, chubby, deep chested, adult, large breed dog is a very challenging surgery. Veterinarians will encounter more operative and postoperative complications. Excellent surgical technique and secure blood vessel ligation are required. The surgery will take longer to perform. These factors will have to be discussed with owners so that they are well informed of all complications.

Resources

Determining the optimal age for gonadectomy of dogs and cat. Root Kustritz MV. JAVMA 231: 1665- 1675. 2007.

Determining optimal age for gonadectomy in the dog: a critical review of the literature to guide decision making. Root Kustritz MV et al. Clin Theriogenol. 9: 167-211. 2017.

Breeds of dogs involved in fatal human attacks in the United States between 1979-1998.

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*E.Bensignor et Al. Evaluation of N-Acetylcysteine combined with natural extracts against Staphylococcus pseudintermedius, Malassezia pachydermatis and Pseudomonas aeruginosa biofilms. Study presented at the ESVD/ECVD congress - Dubrovnik, September 2018 and NAVDF congress - Austin, April 2019

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Audrey Remedios, DVM, MVetSc always wanted to become a veterinarian. After finishing her veterinary degree, she completed a surgical residency and Master of Veterinary Science program at the Western College of Veterinary Medicine. She joined the faculty of WVCV and successfully passed the certifying examinations to become a surgery specialist both in large and small animals as designated by the American College of Veterinary Surgeons. After 9 years, she moved to Calgary and established Western Veterinary Specialist Centre. She started and developed the small animal surgery program in the newly established University of Calgary School of Veterinary Medicine and taught there for 5 years. Today, Dr. Remedios is in private practice in Calgary where she also provides care for the animals from many rescue groups such the Alberta Spay Neuter Task Force and AARCS. Under the auspices of Veterinarians Without Borders, she is currently helping to develop an animal health program for the Canadian arctic.

Seizures continued from page 1

When to start anticonvulsant therapy?

Dr. Mariani said that each patient much be approached individually, and maintenance therapy should be considered if:

- Seizures are more frequent than once every 6-8 weeks
- Seizures are obviously increasing in frequency
- Status epilepticus or cluster seizures occur
- Seizures last longer than 5 minutes
- Seizures are very severe or involve aggression towards the owner

Which anticonvulsant to choose?

For dogs, the two main traditional options for therapy are phenobarbital and (potassium) bromide. Some of the newer anticonvulsant medications can be effective, and Dr. Mariani shared that he uses zonisamide and levetiracetam with some frequency as first-line agents in dogs.

In the cat, phenobarbital is typically the first choice of maintenance drug. He noted that diazepam should be used with extreme caution in cats and he generally does not recommend it. Levetiracetam is also a reasonable choice but requires dosing three times daily.

Initial maintenance therapy for epileptic animals

- Phenobarbital (dogs or cats)
- Potassium bromide (dogs)
- Zonisamide (dogs or cats)
- Levetiracetam – intermediate release (dogs or cats)
- Levetiracetam - extended release (dogs, possibly cats)
- Diazepam (cats, but not recommended by Dr. Mariani)

Monitoring maintenance therapy

Dr. Mariani advised that a complete blood count (CBC), serum biochemical evaluation and urinalysis should be performed before starting maintenance anticonvulsant therapy. He also noted that the metabolism of these drugs varies between patients. Blood levels are essential to guide therapy for phenobarbital and bromide and may be indicated for some of the newer drugs, depending on the response to therapy. Steady state of a drug after regular oral dosing depends on its half-life in the body and varies between medications and species. See Table 1.

Table 1. Monitoring anticonvulsant therapy in dogs

Medication	Time to steady state	Desired blood levels
Phenobarbital	10-14 days	15-35 µg/ml
Bromide	3-4 months	1000-3000 µg/ml (or 1-3 mg/ml or 100-300 mg/dl)
Diazepam	5-10 days	Monitoring not typically performed
Zonisamide	3-5 days	10-40 µg/ml (extrapolated from humans)
Levetiracetam	1-2 days	5-45 µg/ml (extrapolated from humans)

Desired blood levels must be interpreted in light of the resulting seizure frequency and clinical condition of the patient, stressed Dr. Mariani. When measuring therapeutic blood levels, a serum separator tube (“tiger top”) should be avoided, as the separator device may bind the drug and artificially decrease the serum levels. After the establishment of acceptable therapeutic levels of the medication, it is generally recommended that blood levels along with a CBC, serum chemistry and urinalysis be monitored every 6-12 months or in the event of an acute change in seizure frequency or new onset of sedation, weakness or ataxia.

Potential adverse effects of maintenance therapy

Adverse effects of phenobarbital include sedation, polyphagia, polyuria, polydipsia, weight gain, pelvic limb ataxia, weakness, and in rare cases hepatic failure and blood dyscrasias. Dr. Mariani pointed out that increases in liver enzyme levels are common, and this does not indicate hepatic failure. Side effects of bromide are similar for the most part, but in rare cases may also include pancreatitis. Vomiting related to the salt content can be minimized by administration with food. Diazepam may lead to sedation and polyphagia, and rare idiosyncratic reactions causing acute hepatic necrosis have been described in the Zonisamide and levetiracetam may both cause sedation, while the former may also cause vomiting, diarrhea and inappetence.

Dealing with the refractory epileptic

Monotherapy with an anticonvulsant medication controls an estimated 60-80% of epileptic dogs and the majority of cats. However, a number



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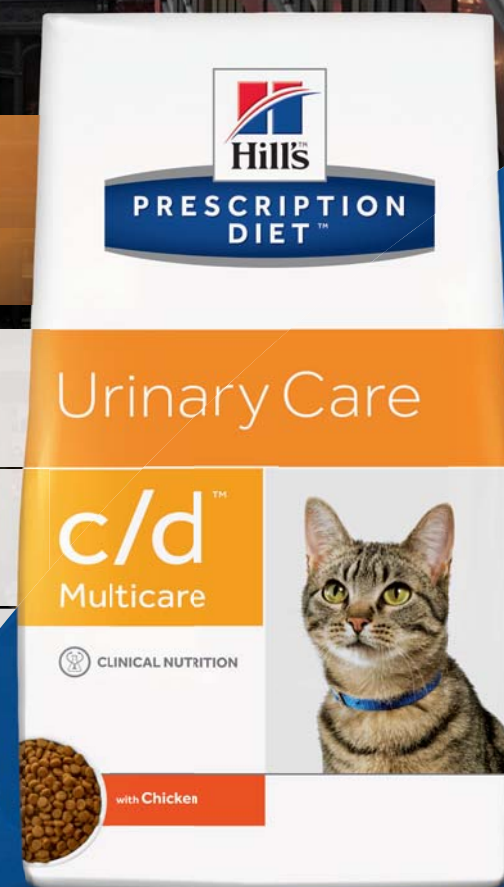
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of animals will have their condition remain unchanged or worsen. In this situation, advised Dr. Mariani, a number of additional steps may be taken:

- Ensure owner is administering the drug correctly
- Ask about dietary changes, other medications or herbal preparations, and topical anti-parasite medications that may interfere with seizure control
- Reconsider diagnosis, pursue additional diagnostic testing
- Ensure optimal blood levels of maintenance drug
- Increase dosing frequency if seizures occur at times corresponding to ‘trough’ blood levels (base on therapeutic monitoring)
- Ensure female dogs have been spayed
- Add a second anticonvulsant drug

Many animals require blood levels of phenobarbital above 25 mg/ml for seizure control, although levels exceeding 35 mg/ml should be avoided. Although unusual, some animals receiving phenobarbital metabolize the drug very rapidly, and may benefit from dosing every 8 hours. Having the owner maintain a seizure diary is useful to document these cases, as seizures may occur during the expected ‘trough’ period of drug metabolism and peak and trough serum levels may be beneficial in guiding therapy. Serum levels of bromide above 3000 mg/ml are tolerated in some dogs, especially with monotherapy.

Combination anticonvulsant drug therapy

Dr. Mariani said that in the cat diazepam may be added, *with extreme caution*, to phenobarbital to control seizures. Newer generation medications (see below) are likely a better second option. In the dog, he said, a combination of phenobarbital and KBr is effective in controlling the majority of patients refractory to monotherapy with either drug alone. However, side effects are common with this protocol, and may be unacceptable to the owner. He advised that side effects may subside approximately 1-2 weeks after initiating the new drug, and so patience can pay off.

If seizure control still cannot be obtained, then a third anticonvulsant medication may be added; choices include:

- Zonisamide (Zonegran) (dogs or cats)
- Levetiracetam (Keppra) (dogs or cats)
- Felbamate (Felbatol) (dogs)
- Gabapentin (Neurontin) (dogs or cats)
- Pregabalin (Lyrica) (dogs or cats)

These drugs have a variety of mechanisms of action, which appear to be different from phenobarbital and bromide, and patients may receive additional benefit from a multimodal antiseizure effect. Of these newer generation drugs, Dr. Mariani generally prefers to use zonisamide or levetiracetam. Other potential interventions to consider in select situations include acupuncture and the administration of a hypoallergenic diet.

Cluster seizures and status epilepticus

Cluster seizures involve two or more seizures occurring within a 24-hour period. Status epilepticus is continuous seizure activity lasting longer than 5 minutes, or the occurrence of multiple seizures without recovery of baseline neurologic function between episodes.

Goals of treatment

The vast majority of seizures involve eventual spontaneous return to resting or baseline neurologic function. However, during status epilepticus, a variety of changes occur within cells and networks of cells that result in a situation where the seizure activity becomes self-sustaining.

Generalized status epilepticus can cause profound acidosis, hyperthermia, cardiac arrhythmias, hypoxia, neurogenic pulmonary edema, rhabdomyolysis, myoglobinuria, renal failure, cerebral edema, elevated intracranial pressure and neuronal necrosis, and therefore constitutes a medical emergency. Dr. Mariani noted that the goals of treatment are to stop the seizures, support systemic organ functions, and protect brain function.

1) Stop the seizures

The most critical goal of therapy is to stop the seizures. The initial drug chosen is usually a benzodiazepine (diazepam or midazolam) but depends on the suspected underlying cause, explained Dr. Mariani.

If hypoglycemia is suspected (juvenile toy breed dog, hunting dog or

insulin overdose), dextrose intravenously or orally administered may be appropriate. In small or toy breed dogs that have recently whelped and are nursing puppies, the administration of calcium gluconate may be considered to address potential hypocalcemia.

- Diazepam can be administered to control seizures. The dose can be repeated twice, if necessary. Anticonvulsant action only lasts about 15-30 minutes, and therefore some form of longer acting therapy is required if the seizures stop.
- If the animal responds to a benzodiazepine bolus, phenobarbital may be considered for longer-term control.
- Animals with severe cluster seizures or status epilepticus with some interictal time usually respond to a constant rate infusion (CRI) of diazepam.
- Animals with continuous, prolonged seizure activity or those refractory to benzodiazepines may receive pentobarbital. This drug induces general anesthesia and is extremely effective in stopping the outward manifestation of the seizure. However, respiratory and cardiovascular function may be depressed, and these systems must be monitored very closely.
- Propofol may be used as a substitute for pentobarbital if general anesthesia is required to control seizure activity. Due to its short duration of action, this drug must be given as a CRI. Substantial respiratory depression is common with this medication, and anesthesia must be closely monitored.
- Use of an inhalant anesthetic (e.g., isoflurane or sevoflurane) to maintain general anesthesia should be considered as a last resort. Both require close monitoring of respiratory and cardiovascular parameters.
- A parenteral formulation of levetiracetam is also available, although its use in animals has been limited to date.

2) Support and monitor systemic functions

Status epilepticus can have profound effects on many body systems. Consequently, noted Dr. Mariani, systemic functions must be closely monitored, including:

- Mental status and level of consciousness
- Respiration, oxygen saturation and blood gases
- Cardiac rate and rhythm, blood pressure
- Body temperature
- Serum electrolytes, glucose, BUN and creatinine
- Fluid status and hydration
- Muscle damage and evidence of myoglobinuria

Intravenous fluid therapy is often indicated in order to maintain hydration and may help prevent renal damage if myoglobinuria is a concern. As severe seizure activity may lead to non-cardiogenic pulmonary edema, thoracic radiographs, pulse oximetry, and blood gas analysis should be considered in animals with compromised respiration. Aspiration pneumonia is also a concern, particularly in large recumbent dogs. Oxygen therapy may be administered in some of these patients. Active cooling should be considered in animals that are severely hyperthermic. Basic supportive nursing care must be performed in recumbent and stuporous animals, including applying artificial tears/lubrication to the eyes, providing adequate bedding/padding, periodically changing body position, turning from side to side, and passive range of motion of the limbs.

3) Protect brain function

Prolonged, severe seizure activity can lead to cerebral edema, increases in intracranial pressure and neuronal necrosis. Select cases may benefit from oxygen therapy, mannitol and furosemide. Compression of the jugular veins, coughing and sneezing all increase intracranial pressure, and should be avoided in animals where this is suspected to be increased. Therefore, Dr. Mariani stressed that jugular catheters, collection of blood from the jugular vein, neck bandages, nasogastric tubes, and nasal oxygen catheters should all be avoided if possible. Intravenous lidocaine should be considered to reduce the coughing reflex if intubation is required. Elevation of the head approximately 30 degrees from the horizontal is a simple way to promote venous return from the brain and potentially reduce intracranial pressure. Pentobarbital administration, in addition to stopping seizure activity, also has the advantage of reducing cerebral metabolism, which can have neuroprotective effects.

4) Monitor ongoing seizure activity

Patients should be closely monitored to ensure the cessation of seizures and for the recurrence of seizure activity. This is typically done by visual observation and examination of animals for motor activity consistent with seizures. Whenever possible, cessation of seizure activity should be confirmed electrophysiologically with the aid of electroencephalography (EEG).

At-home therapy for cluster seizures

Some owners can be taught to administer benzodiazepines at home in order to reduce the number of seizures in dogs (or cats) prone to cluster seizure events. The goal of this, concluded Dr. Mariani, is usually to prevent further seizures, reduce the number and severity of subsequent seizures, and to avoid an emergency visit to the veterinary hospital. **CVP**

Chris Mariani DVM, PhD, DACVIM (Neurology) graduated from the Ontario Veterinary College in 1996. After his small animal internship and time in general small animal practice, he completed a residency in neurology and neurosurgery at the University of Florida, followed by graduate work in brain tumor immunotherapy at the College of Medicine. Dr. Mariani is currently an Associate Professor of Neurology & Neurosurgery at North Carolina State University, where he directs the Comparative Neuroimmunology and Neurooncology Laboratory. His professional interests include epilepsy, inflammatory brain disease and brain tumor therapy.

Pet obesity rates *continued from page 1*

estimated 56 million cats and 50 million dogs are overweight or obese, based on 2018 pet population projections provided by the American Pet Products Association (APPA). In 2017, APOP found 60% of cats (26.5% Overweight /33.5% Obese) and 56% of dogs (36.4%/19.6%) were overweight or obese.

Pet owners and veterinary professionals were questioned about pet obesity, diet and nutrition, and pet weight loss. 80% of veterinary professionals reported they had tried to help their pet lose weight, along with 68% of pet owners. The leading pet weight loss method was ‘calorie reduction/smaller portions’, favored by 68% of all respondents. 61% increased exercise, 29% tried a low-calorie or low-fat pet food, and 19% fed a therapeutic or ‘prescription’ diet from their veterinarian.

When all respondents were asked what weight loss method was most effective, 38% rated calorie reduction/smaller portions as ‘very effective’ and 33% ranked it as ‘somewhat effective’. 36% reported increased exercise as ‘very effective’, along with 30% reporting it was ‘somewhat effective’. Only 9% reported low-calorie or low-fat diets as ‘very effective’, while 23% reported it was ‘somewhat effective’. Prescription weight loss diets were given a 13% ‘very effective’ rating and 14% ‘somewhat effective’. Further analysis of ‘prescription diet’ revealed 50% of veterinary professionals and 70% of pet owners reported they ‘never tried’ this weight loss method and 27% of veterinary professionals and 9% of pet owners ranked it as ‘very effective’.

Further, 68% of pet owners answered “Yes” to “Would you like your veterinarian to recommend a routine/maintenance diet for your pet?” compared to only 11% who answered “I don’t really care.” Unfortunately, only 38% of pet owners reported their veterinarian had made a recommendation about the best routine/maintenance diet to feed their pet during the previous year. 22% said they “had to ask.” 40% replied they had received no dietary advice from their veterinary professional. Two-thirds of pet owners agreed that ‘veterinarians are knowledgeable about pet nutrition’, 20% disagreed with this statement, and 13% said “I don’t know”.

Pet owners were asked, ‘Please rank where you receive the best dietary recommendations for your pet’. Their rankings were:

- | | |
|------------------------------|------------|
| 1) Veterinary clinics | 5) Breeder |
| 2) Online/internet/website | 6) Groomer |
| 3) Pet store or Friend (tie) | 7) Other |
| 4) Trainer | |

When it comes to diagnosing pet obesity, 53% of pet owners reported their veterinarian discussed their pet’s weight during their annual visit. 19% said ‘occasionally’, 20% ‘only when asked’, and 8% said ‘no’. 44% of all respondents reported they weighed their pet ‘every few months’, and 28% responded ‘yearly’. Only 15% weighed their pet monthly.

About the research

The annual obesity prevalence survey is conducted by APOP. Veterinary practices assessed the body condition scores (BCS) of every dog and cat patient they saw for a regular wellness exam on a given day in October. BCS was based on the standardized nine-point whole integer scale and actual weight. The latest survey included the assessment of 1,560 dogs and 646 cats by 146 veterinary clinics representing 41 U.S. states during October and November 2018. **CVP**

The Association for Pet Obesity Prevention is a 501(c)(3) nonprofit organization founded in 2005 by Dr. Ernie Ward, with the primary mission of documenting pet obesity levels in the United States to raise awareness of the issue and its negative impact on pets. The APOP Board of Directors is made up of veterinary practitioners, nutritionists, surgeons, and internal medicine specialists. APOP conducts annual research to substantiate pet obesity prevalence levels in the United States and offers resources and tools to veterinarians and pet owners to better equip them to recognize and fight pet obesity. More information about APOP can be found on their website www.PetObesityPrevention.org.

Canadian Veterinary Medical Association News

By Lori Tarbett, Manager, CVMA Communications and Public Relations

The CVMA is pleased to welcome Dr. Melanie Hicks as the new CVMA President. Dr. Hicks will serve on the CVMA Council from July 2019 until July 2020. We would like to take this opportunity to thank Dr. Terri Chotowetz for her dedication and commitment while serving as President over the past year.

The CVMA is also pleased to welcome Dr. Brian Evans as its new Treasurer. His term begins in July 2019. The CVMA would like to take this time to thank Dr. Barry Stemshorn for his years of devotion serving the CVMA as Treasurer since 2010. We wish him all the best in his future endeavours.

CVMA member, Dr. Jonas Watson, was honoured with a World Veterinary Association (WVA) Animal Welfare Award at the 2019 WVA Congress on April 29 in Costa Rica. Dr. Watson, President of the Manitoba Veterinary Medical Association, is a veterinarian and visionary who aspires toward universal access to veterinary care, which he believes all veterinarians should be working towards. The CVMA Council nominated Dr. Watson for the award because of his help spearheading mobile pet clinics to reach some

of Manitoba’s remote locations and underserved populations.

The CVMA would like to recognize the following individuals presented with awards during the AGM and Awards Luncheon at the WSAVA/CVMA Congress on July 16, 2019:

- **Small Animal Practitioner Award:** Dr. Kate Lupton (AB)
- **Merck Veterinary Award:** Dr. Karin Orsel (AB)
- **CVMA Humane Award:** Dr. Dennis Will (SK)
- **CVMA Practice of the Year Award:** Veterinary Specialty Centre of Newfoundland and Labrador (NL)
- **CVMA Life Membership:** Jim Brackett (BC)
- **CVMA President’s Award:** Dr. Lloyd Keddle (AB)

We help shape national policy and legislation that affect you

The CVMA and the Canadian Association of Veterinary Cannabinoid Medicine (CAVCM) called on the federal government to make two cannabis regulations changes to better protect pets’ safety and health. “Warning labels need to be changed to explicitly advise Canadians to keep these products out of pets’ reach and regulations need updates to permit veterinarians to consult



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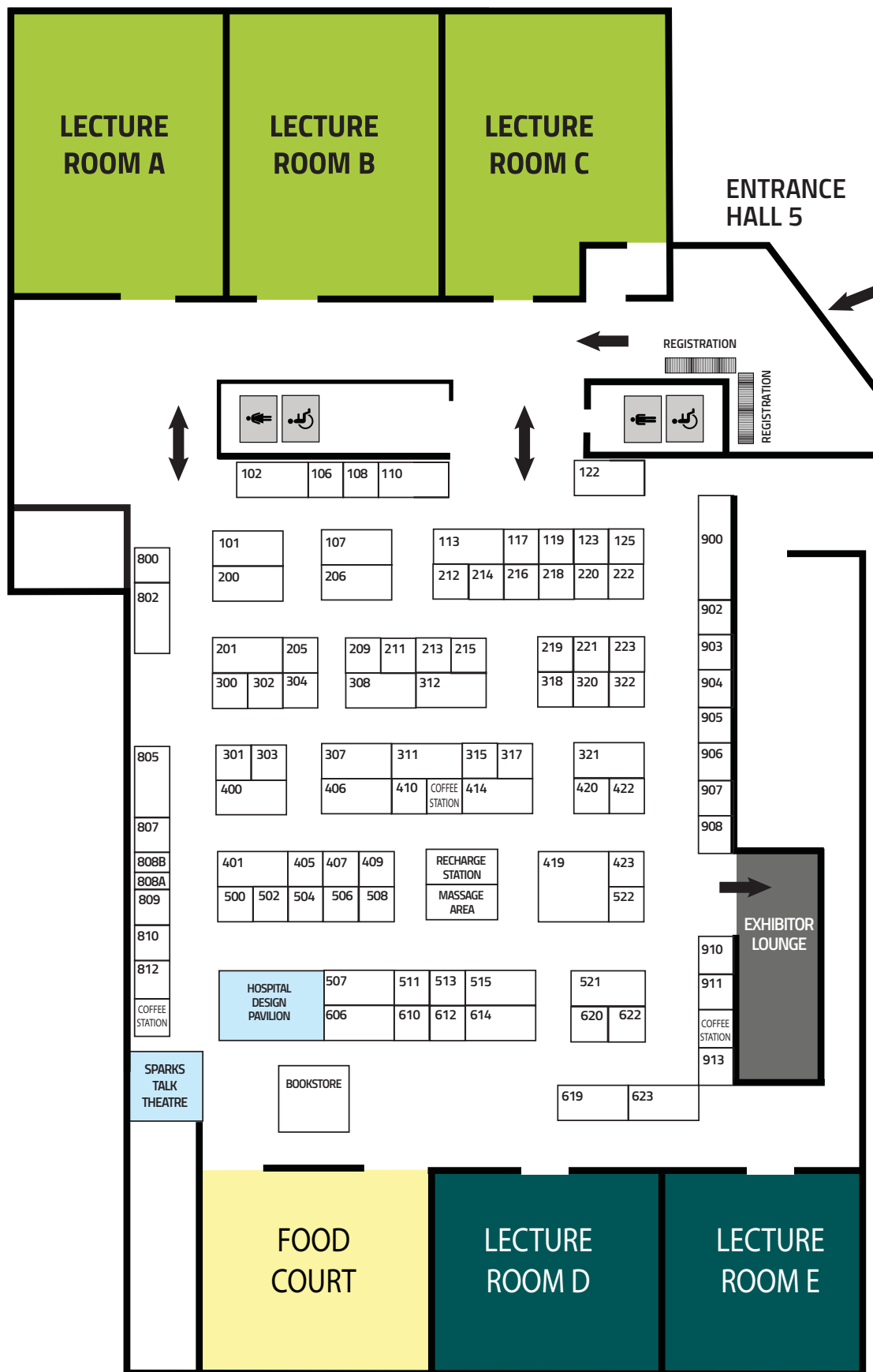
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with pet owners seeking cannabis use as a therapeutic treatment and authorize appropriate products and doses,” said Dr. Terri Chotowetz, CVMA President.

We advocate on your behalf for improvements to animal welfare

eTick.ca is a new Canadian, public-platform website providing another tick resource for clinics and pet owners. *eTick.ca* is for image-based identification and tick population monitoring in Canada, inviting the public to help by submitting tick photos for professional identification. The results, combined with collection date and locality, can be consulted and mapped so users visualize the information related to species for any year and/or location. Access to *eTick.ca* is free and contributing data is not necessary to consult the database.

The CVMA updated its Vaccination of Animals position statement.

- Vaccines are important in supporting both animals’ and humans’ health and welfare.
- Vaccines registered for use in Canada were tested for safety and efficacy and can be confidently administered when used in accordance with instructions and veterinary advice.
- Adverse effects, if any, should be reported.
- Every patients’ or patient groups’ vaccination needs should be assessed regularly by a veterinarian as part of a preventative healthcare strategy.

Access position statements in the Policy & Advocacy section of our website.

The CVMA updated its Electroejaculation of Ruminants position statement.

- Compared with alternatives electroejaculation is convenient, quick, and reliable for the collection of semen.

- Electroejaculation has the potential to cause discomfort, especially if the procedure is not conducted appropriately.
- When possible, less invasive procedures should be used for semen collection in preference to electroejaculation.
- Where there is no practical alternative, the procedure must be undertaken in a manner minimizing discomfort and when possible pain relief, sedatives, or anaesthesia should be used.

Access position statements in the Policy & Advocacy section of our website.

We celebrate Animal Health Week

From October 6 – 12, 2019, CVMA will showcase the importance of nutrition. This year’s theme, *Optimal Nutrition for Optimal Health: Talk to Your Veterinary Team about Your Animal’s Dietary Needs*, is an opportunity to remind animal owners about the importance of seeking professional veterinary advice regarding what and how much they feed their animals based on species, age, and overall health. Learn more about AHW at canadianveterinarians.net/practice-economics/animal-health-week.

Our resources help you succeed throughout your career

A CVMA member submitted a question containing breach of privacy and data mining concerns through VetLaw™, the CVMA’s free online legal advice column. The CVMA believes Mr. Doug Jack’s answer could serve as information for practice owners and a reminder to closely review agreements signed with service providers ensuring it is compliant with Canadian Data Protection Laws. Read Mr. Jack’s answer at canadianveterinarians.net/practice-economics/vetlaw.



Registered Veterinary Technologists and Technicians of Canada News



By Ivana Novosel, RVT, MSc
RVTTC/TTVAC Vice President

Every July, the RVTTC holds their once-a-year, in-person, meeting as well as the Annual General Meeting (AGM) in conjunction with the CVMA conference. This year is no different, with the exception of the conference being even more extensive with the collaboration between CVMA and WSAVA (World Small Animal Veterinary Association). As such, will be attending the WSAVA general assembly as an associate member for the first time this year.

We would like to thank our meeting and AGM sponsors: The Personal and Petplan Pet Insurance, and all the participating provincial associations for making this meeting possible and supporting RVTs across Canada.

During our time together, the RVTTC Board of directors strives to accomplish work that requires in-person teamwork to continue to work on initiatives that will unite, advance and strengthen RVT’s across Canada. At

the RVTTC AGM all provinces are represented and matters relevant to all RVTs across Canada are discussed.

Anticipating lots of activities coming up in the near future, RVTTC will be forming additional committee groups and would love to invite passionate RVTs to consider applying. Please feel free to contact our Executive Director, Shannon Brownrigg. Better yet, please come and introduce yourself to the BOD if you are coming to any upcoming event - we are ALWAYS excited to see our members and fellow RVT’s. #PROUDLYRVT

Here are some facts about the RVTTC to place a seed in your mind/heart about ways to get involved:

- Each province has 2 representatives that sit on the RVTTC Board
- An ex-officio RVTTC representative sits on the CVMA Council
- There is an ex-officio CVMA representative that sits on the RVTTC Board of Directors
- The RVTTC has 4 committees within itself: bylaws & policies, welcoming, finance, and communication
- There are many RVT’s that sit on outside boards representing the RVTTC on national and international levels.
- We meet approximately every 2 months through a web conferencing platform and once a year in person.
- We form life-long friendships and mentors with one another that make us all want to continue in this profession and stay involved with the Board.

RVT TALK – the new RVTTC monthly e-newsletter, is not to be missed. Have you received it? Have you read it? RVT Talk is our new way of assuring you are kept most up-to-date with relevant content and information from every province. Please send us your feedback and let us know what you think. Send us an email at info@rvttcanada.ca with your suggestions and ideas.

For more information visit our website at www.rvttcanada.ca, and the RVTTC Facebook page at: <https://www.facebook.com/RVTTC/>



Veterinary Business Today**Using financial statements to better manage your veterinary business**

In my last column, we reviewed the financial statements we receive from our bookkeepers and accountants as key diagnostic tools we have available to assess the financial health of our veterinary practices. Much like we review CBC/Biochemistry panels to determine the status of a sick animal, we can use our profit and loss statement, cash flow statement and balance sheet in a similar manner to determine the financial health of our practice. And just like our blood panels, the different financial statements highlight different factors.

Income statement: the key to business decision making

Our profit and loss statement, also called our income statement, tells us how we made our money and also what we spent it on. It is dangerous for veterinary practice owners to compare their numbers to other practices, or industry benchmarks. There are numerous organizations that accumulate financial data from members and state that the averages they gather are targets for all practices. The reality is that not each practice is alike and when we look at averages of a group of practices, our 2-vet clinic could be in the same group as a multi-vet specialty and emergency practice. There is no way we are comparing apples to apples between such different practices.

Instead, I prefer to compare my own practice financials over a number of years. It is much more helpful to compare my practice's revenue growth to that of the past 3 years. If I'm in an economically challenged area and I am able to achieve 3% growth year over year that is a huge accomplishment - but if a provincial or national average is 6%, my growth pales in comparison. Similarly, I can compare my labour costs as a percentage of revenue from year to year. Percentages are more accurate than dollar amounts because the amount of wages may have stayed the same year over year, but if revenue decreased then the percentage of labour to revenue will go up. If there is a negative trend in revenue growth, then you may consider either cutting staff or expanding your marketing efforts with the goal of increasing revenue.

Recently, I was working with a large companion animal referral hospital. We were reviewing their year-end financials; their accountant had told them that their payroll costs were too high according to industry standards and that they needed to cut about \$200,000 in salary. I countered that the hospital could not function if they reduced positions; rather, the practice needed to increase sales in order to get their labour expenses in line with the industry standards. At the same time, one of the surgeons asked how many specialty hospitals were in the sample group. "Not many," was my answer, highlighting the pitfall of relying on industry standards to guide business decision making.

Although I suggest reviewing income statements monthly to help identify areas of concern, I withhold taking substantial actions until I review a quarter. The accumulate 3-month period of time helps to blend spikes in either expenses or revenue, giving a more accurate sense of the business. This past winter in Ontario was very cold and felt much longer than usual. Sales for our practice in March plummeted and, if I looked at that month without reviewing the outstanding sales in February, I could have made a shortsighted decision to counter the decrease in sales. A month doesn't make a trend so reviewing prior months, or the same month the year prior, is much more helpful in giving us information needed for decision making.

Cash flow statement: determine if you have enough cash on hand

The last line of our income statement shows our net income, or the money left over after paying all of our expenses. This becomes the first line of our cash flow statement. If your business is profitable, and you are able to collect payment at the time of service, this is generally a less important statement. But if you extend credit to clients, are having to replace equipment or are in a growth stage, the cash flow statement is critical in helping to determine if we have enough cash for our business activities. Banks will rely on this statement to help them understand if you have enough free cash that can be used to finance a new loan. You may want to renovate your practice and obtained a quote of \$300,000 to add a new extension. If your cash flow isn't robust enough to finance this over a number of years, the loan will be refused. How do we change this? The first, and often only step, is to go back to the income statement and see what we can do to increase our net income. Are we spending too much on staff, or equipment repairs, or in carrying medications that are sitting on the pharmacy shelves too long? If we can find ways to cut costs or increase sales, then the corresponding increase in income should give us the cash flow needed to take out a loan for our expansion.

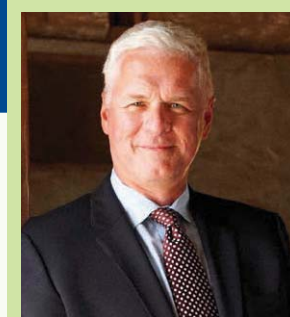
Balance sheet: understand your assets, liabilities and owner equity

Lastly, we have our balance sheet. Typically, we see this at the end of the year, and it gives us an understanding of our assets, liabilities and owner equity as of the last day of the year compared to the same date the year before. There are many ratios we can look at that can tell us various financial metrics, but the first two I look at every year are my beginning and ending inventory and accounts receivables amounts. I can use these to figure out how many days it takes me to turn over my inventory on average, or days it takes to collect money. Ideally, you want to turn over or sell inventory before you have to pay for it. Similarly, you want to collect money from clients before you have to pay for the expenses needed to offer veterinary care to them. In other words, you should aim to turn over your inventory on average and collect money from your clients in less than 30 days if you are expected to pay your bills within 30 days. Otherwise, your business will have to rely on savings or loans to cover the difference.

Summary

This is just a brief overview of the information you can find in financial statements. They are powerful tools to help us better manage our businesses. Like anything else, the more you use them the more you can recognize patterns, opportunities to save money, or ways to use your income better. If you are a practice owner, or manager, and want to increase your financial literacy I would recommend taking a 'Bookkeeping 101' course at a local college or even online. Little changes can have a huge impact on your bottom line, so a bit more education could be time and money very well spent.

You can visit Dr. Pownall's website at www.veterinarybusinessmatters.com, on twitter @dvmbusiness, and the Veterinary Business Matters Facebook page. The website for McKee-Pownall Equine Services is www.mpequine.com and for Oculus Insights is www.oculusinsights.net.



By Mike Pownall, DVM, MBA

TECH Fear free handling: For your patient's well-being and yours

“Why Fear Free?” asked Meghan E. Herron, DVM, DACVB, speaking at the Alberta Veterinary Technologists 40th annual conference. In answering her own question, Dr. Herron explained that the Fear Free initiative aims “to prevent and alleviate fear, anxiety, and stress in pets by inspiring and education the people who care for them”.

Fear Free certified professionals keep their patients and themselves happy and safe by:

- Mastering the reading and interpretation of body language
- Learning to adapt their own body language
- Setting up an environment for successful stress-reduction
- Implementing safe, humane and effective restraint
- Utilizing tools to maximize safety, efficiency and welfare

How do we read and interpret canine body language?

A relaxed dog will display a posture that is relaxed, carries its weight evenly and may even play bow or body wiggle, with a tail that may be wagging. The dog's ears will be relaxed and in a neutral position; the mouth will appear ‘soft’ and may be open with the tongue hanging out. The eyes will be ‘soft’, with normal pupil size and a steady, relaxed gaze.

A defensively threatening dog will display signs of retreat and displacement behaviours that are basically saying, “I don’t like that, stop what you are doing!” The dog is trying to avoid a fight and would rather run away - but it is likely to become *offensively* threatening if provoked further.

An offensively threatening dog is ready and willing to aggress. Physical signs include a forward body posture, hackles raised, ears back, nose wrinkled, lips slightly curled and corner of the mouth pulled back, and tail tucked with little or no movement. Keep in mind that although these dogs may be confident in using aggression to protect themselves in a veterinary situation, the root motivation is still based in fear and the perception that their life is in danger. These are not “bad” dogs, “mean” dogs, or “dominant” dogs in any way.

How do we adapt our own human body language to alleviate fear, anxiety and stress in dogs?

The human approach to meeting and greeting is to make direct eye contact and move rather quickly toward one another while leaning forward to shake hands or offer a hug. Dogs greet each other more indirectly; they use a more lateral approach with polite sniffing, an averted gaze, and perhaps a play bow.

To avoid miscommunication when we communicate with dogs, we must adapt our body language to more closely mimic dog body language. This involves:

- Turning your body to the side
- Bending at the knees rather than the waist
- Patting the side of your leg
- Avoiding directly, prolonged stares
- Approaching the side, rather than the front of the dog
- Speaking in a soft, light-hearted tone of voice

How do we read and interpret feline body language?

A relaxed cat will have its head resting; its eyes will be closed to heavy and pupils will be slit to normal in size, with ears turned slightly forward. The cat's tail will be loose, and it may be purring. If the cat is alerted by something, the head will move over the body, its eyes will open, and the ears will become erect.

A tense cat will keep its head still and have wide open eyes. The ears will be erect, tail close to the body tense downwards or curled forwards. Ventral recumbency or ‘slinking’ will likely occur. If anxious, the head will be on the same plane as the body, with little or no movement. The cat may display a plaintive meow, growling or yowling and have an increased respiratory rate.

A fearful cat will have its head tucked and still. Its ears will be fully flattened, tail close to the body and the cat may display freezing, fidgeting, escaping or aggression behaviours. A terrified cat will lower its head, the pupils will be fully dilated, and ears will be fully flattened and back on the head, with tail close to the body. Posture will resemble that of the ‘Halloween Cat’, with full piloerection. The cat may be spitting, growling, yowling, hissing or shrieking.

Fear Free environments for cats in a veterinary setting

It is common for cats to display aggression in a veterinary setting. Dr. Herron advised that fearful cats be approached from behind – or by letting the cat come to you.

For cats, stress may start long before reaching the clinic lobby. Dr. Herron provided useful environmental management tips, including:

- Separate cat waiting areas
- A ‘cat ward’ for hospitalized patients or day cases
- Feliway™
- Classical music
- White noise
- Keep fearful cats in the top cages
- Comfortable cages with soft bedding, or
- the cats own carrier
- Fresh food and water
- Litter box
- Cage cover (sprayed with Feliway™)
- Perch

Fear Free environments for dogs in a veterinary setting

Fear Free methods of managing dogs in the clinic include providing separate ‘comfort’ rooms for reactive dogs, asking owners of fractious pets to wait in the car, and minimizing dog ‘mingling’, advised Dr. Herron. To get a fearful dog on the scale, Dr. Herron likes to encourage the dog to step on the scale on its own, using a quick and deliberate pace and food to motivate. In the kennel, fearful dogs should be put in the bottom cages, cage covers (sprayed with Adaptil™) may be used, food dispensing toys can be offered, and soothing music or white noise can help calm dogs.

Counter-conditioning

“Counter conditioning is a type of therapy that attempts to replace bad or unpleasant emotional responses to a stimulus with more pleasant, adaptive responses,” stated Dr. Herron. This is accomplished with the use of food since food elicits an automatic positive emotional response. If paired with potentially aversive stimuli, such as injections, rectal temperature, nail trims, etc., the emotional response will transfer to each stimulus. Dr. Herron shared some common questions on the use of food for conditioning, and her responses:

“But if I feed a dog/cat that is being “bad”, aren’t I rewarding that dog/cat for their “bad” behavior?”

The answer is NO

Once the food reduces the fear, motivation for aggression is reduced

Pleasant emotions = pleasant behaviors

Should we reserve food only for difficult patients?

Nope.

Most patients are at least mildly stressed

Want to maintain positive experience to set them up for success with each visit

What if my patient won’t eat?

- Your patient doesn’t like what you offered or your patient is too stressed to eat
- Offer food that is highly palatable
- Mitigate the environment to reduce stress

Stimulus reduction to minimize fear

Visual stimulus can be reduced by dimming lights, blocking visual access to other people or animals, and avoiding sudden and quick movements. To reduce auditory stimulus, speak softly and sparingly, select a quiet area, and play classical music or white noise. Don’t forget to reduce smells in the clinic by using appealing pheromone products, keeping alcohol use to a minimum, allowing disinfectants to dry, and providing cat only exam rooms. Minimize unnecessary touching to reduce tactile stimulus. As well, approach the pet gently and start with a light touch in non-socially invasive or uncomfortable body areas; then maintain touch with your patient at all times, gently moving from one part of the body to another to examine the animal. Cover exam tables to avoid cold surfaces and prevent slipping.

Implementing safe, humane and effective restraint

Utilize the least restraint necessary to accomplish the task and provide firm, balanced and secure support. Dr. Herron advised, “if the pet struggles for

Life of a Vet Tech

Exotic low stress pet care with Stefanie Kotschwar

By Sally J Foote DVM, CABG-IAABC, LSHC-S

I recently had the pleasure of interviewing Stefanie Kotschwar, a licensed veterinary technician at Lynwood Animal Hospital, Nepean, Ontario, Canada. Her practice has a strong emphasis in exotic pet care, and makes providing a Low Stress Handling® care experience a top priority.

Dr Foote: Stefanie, I see that you have various degrees. Tell me about your journey into veterinary care for exotic pets.

Originally from Austria, I grew up in Colombia. As a young adult I moved to Guelph and earned my degrees in nutrition and zoology. My first job was as an animal control officer. I later moved to England and received my zoo conservation degree. Working in zoo care was rewarding, yet I was attracted to the medical care of animals. A position opened at a practice where I decided to earn my technician degree. It was a benefit to be working in a veterinary clinic, as I could apply my education to real life experience. Dr Erin Harrison at Lynwood Animal Hospital was my mentor through this process, adding so much to my exotic pet care education. I followed Dr Harrison to Lynwood Animal Hospital to continue my passion for providing the best, least stressful care to exotic animals and educate the owners about their pet's welfare and behavior.

Dr Foote: How did you become a speaker in exotic pet care?

I attended ExoticsCon last year where I attended Low Stress Handling® in Avian species, and assisted in the handling lab. This inspired me to submit my presentation in Low Stress Handling of small mammals. I was chosen as a speaker, which is exciting! October 1, 2019 is the day – St Louis is the place. I hope a lot of people can come. It is a great conference.

Dr Foote: How did you specifically learn about reducing stress in your patients?

The specific training came from working side by side with Dr Harrison. She taught me so much about bunny behavior, or bunny culture, as she calls it. In tech school there is just one module to cover the care all exotic species. Basic handling skills are taught, yet specific behavior considerations are not. It is so important to know and understand body language, and behavior needs of these exotics in care. Some of the techniques taught can create stress to the exotic patients. Current techniques and information need to be more accessible to them.

Dr Foote: What are your thoughts on the ability for small mammals to be stress free in care? In short, these are prey species – can they be comfortable and calm in care?

Many of our exotic, small mammals can be calm, happy patients in care. By taking the time to allow them to explore, providing rewards, and using handling techniques that reduce stress they learn to like exams. Yes, they will have some level of stress or fear as they are in a different environment, and it may take multiple visits to achieve a positive experience. We do have to acknowledge that when the patient is ill, they are stressed, and they may not achieve complete calm. We can reduce the fear in some, or it may be individual parts of the exam. You fit the level of exam to the patient, to prevent escalation of fear. Finding the balance is important. Not freaking them out is essential. Some of the techniques taught in school are actually stressful. Changing handling techniques can be a challenge to veterinary staff, yet once you try the techniques

you will be amazed at the improvement in your ability to provide care.

Dr Foote: What specific techniques have you adapted from *Low Stress Handling, Restraint and Behavior Modification of Dogs and Cats* by Sophia Yin, DVM?

The first technique is understanding the impact of intction – approach, the exam or treatment area, providing the treat tray and allowing the animal to explore. All species are provided a tray of treats. Offering hay, bananas, apples, cheerios, ferret one for ferrets – allows us to see what they want. There is no rush into handling – watch the body language of the animal. They are speaking to us – I point this out to the client which is how I educate about their pet's body language. This helps a lot for home care.

For handling, we use the bunny burrito towel wrap. This is an adaptation of the half burrito towel wrap from the book. I rely on this wrap primarily for mouth exams but can be used for home care.



We also use the treat bin as a base for exams, similar to how a carrier base is used for feline exams.

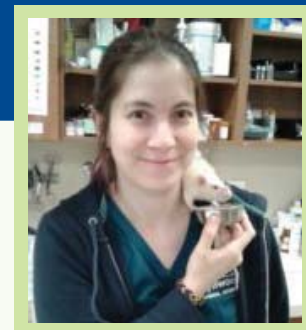
I avoid pinning the head down during an exam as a restraint technique. I follow the rules of knowing exactly where to put my hands based on the knowledge of the head anatomy for comfort over restraint. Support under the jawbone to hold the head in a neutral position, similar to how a cat's head is held for exam, is less stressful and they don't struggle.

Dr Foote: Any last words or thoughts you would like to share?

In every day that we provide care, we should try to create the least stressful care experience as possible. The animal may have stress that cannot be eliminated that day, but all steps to decrease that stress count towards creating a better experience. Lynwood Animal Hospital is not the only place using these techniques. I thank and credit the other practitioners who are creating a low stress exotic care experience in their practices. It is often a process to reduce stress during exams, and that may take a few visits to achieve. Talking to the client, explaining why you are offering the treat tray, pointing out how they can do the same at home is also an excellent way to educate the owner about reducing stress in their pet.

Thank you, Stefanie, for your help in creating a Low Stress Handling® care experience for exotic pets.

All photos are used with permission from Stefanie Kotschwar BScH (Zoology, Nutrition), MSc (Zoo Conservation), AAS (Vet Tech), Diploma (Web Design and Equine Science), RVT



Stefanie Kotschwar, RVT



more than 3 seconds, stop the restraint and reposition to try again. If after 2-3 restarts the pet is not relaxing after 3 seconds, or if arousal is escalating to panic or aggression, STOP! If the procedure is essential, use chemical restraint. If nonessential, send the patient home and create a behavior management plan for the next visit.”

Chemical restraint

“DO NOT WAIT for the animal to become fractious and highly agitated before using chemical restraint”, cautioned Dr. Herron.

There are many common oral premeds for dogs, including combinations of trazodone with clonidine, gabapentin, acepromazine, or trazodone plus clonidine + gabapentin, or acepromazine + gabapentin. Lorazepam can be added to any of these combinations in non-fractious patients. For cats, oral premed combinations include lorazepam + acepromazine, or acepromazine + gabapentin.

For injectable chemical restraint, protocol selection should be based on the clinician’s judgment. For dogs and cats the following can be administered in appropriate dosages: Dexdomitor® (dexmedetomidine), Torbugesic® (Butorphanol), Ketamine (Ketaset®), Midazolam or mg/kg IM or Telazol® (teletamine/ zolazepam).

Oral transmucosal sedation (OTM) is preferred over IM administration for patients who are pain sensitive and who will allow handing of the mouth by owners or staff. Slow application is key, and increased viscosity (add honey, maple syrup) helps. Often, an additional IM dose of dexmedetomidine + morphine will be required.

Sedating highly aggressive animals

For highly aggressive dogs needing essential treatment, drive-by sedation (aka ‘Ninja stab’) may be the only option. Ideally, the owner should practice walking the dog down a hallway, turning a corner, stopping and pressing the dog’s body against a wall and giving it a treat. A few dry practice runs with treats only are recommended by Dr. Herron. For aggressive cats, and IM injection can be given through a soft, mesh carrier.

Canine handling tools

Sleeve style muzzle

These should be used only for short periods (<5 minutes) and stiffer muzzles are better. Dr. Herron reminded everyone that dogs wearing this type of muzzle are able to lick from the front and are also able to bite!

Basket style muzzle

These muzzles allow the dog to eat, drink and pant. It’s best for owner to condition their dogs at home. They cannot bite with their incisors while wearing a basket style muzzle.

Thunder (calming) cap

Thunder caps are helpful for moving dogs with dog-aggression problems. They are made of soft, sheer fabric and limit visual stimuli, helping to prevent the stress of procedure anticipation.

Adaptil™ (D.A.P.™)

Dog Appeasing Pheromone has a calming effect in nervous puppies and dogs and is available in spray, collar or diffuser form.

Easy slip lead - homemade easy slip leash

This allows you to remove a collar/leash without getting close to the dog. Tie a string to the ring that determines the size of the noose. When you pull on the string it causes the noose to loosen and fall off. No leaning in required.

Snare leash

This is a stiff, durable leash with a loop for safe leashing of fractious/fearful dogs.

Thundershirt

A Thundershirt provides firm, balanced pressure that is comforting for many dogs. It can be sprayed with DAP.

Feline handling tools

Muzzles

For cats, the muzzle should cover the mouth and the eyes. Stiff leather or plastic is best for especially fractious cats. Soft muzzles help reduce stress by blocking visual access.

Towel restraint

Wrapping the cat in a towel will help to control its head and provide lateral support. Multiple towels can be used, and gloves can be worn for added protection (but less dexterity).

Cat carrier

The cat’s own carrier will keep the cat corralled while providing it with a familiar place and scent. The lid can be closed quickly if needed for safety.

Feliway™

This facial pheromone is available in a diffuser and spray. It can be sprayed on a towel placed on the table or in a carrier or cage. The diffuser is practical for exam rooms or the cat ward.

EZ Nabber

This can be a useful tool for feral or fractious cats to help capture them for chemical restraint injection. It’s also a safe method of capturing fleeing cats.

Conclusion

Fear Free techniques and tools help us treat fearful or anxious patients while keeping both them and the veterinary clinic staff safe. Further information on Fear Free Certification can be found at www.FearFreePets.com

Dr. Meghan Herron is an Associate Professor in the Department of Veterinary Clinical Sciences and heads the Behavioral Medicine Clinic at The Ohio State University Veterinary Medical Center. She graduated from The Ohio State University College of Veterinary Medicine and became board-certified as diplomate of the American College of Veterinary Behavior after completing a residency at the University of Pennsylvania School of Veterinary Medicine. She is actively involved in the teaching curriculum for veterinary students, providing educational opportunities in all four years. A seasoned international speaker, she has given lectures and seminars on animal behavior around the United States, Canada, Europe and Australia.

Tiny tapeworm that can make people seriously ill is now common in Alberta

In 2012, a parasitic tapeworm called *echinococcus multilocularis* (*E. multilocularis*) common in Europe, was first detected in wildlife in western Canada. A year later, the first human case of a tumour-like disease caused by the tapeworm, human alveolar echinococcosis (AE), was diagnosed. Since 2016, six more people in Alberta have been diagnosed with this potentially fatal disease, which develops slowly over several years and causes multiplying lesions in the body, usually in the liver. People with compromised immune systems are most at risk. Undetected, AE can spread to other organs and, if diagnosed too late, can be fatal, explained Colleen Ferguson, DVM, University of Calgary, Faculty of Veterinary Medicine (UCVM) in an article on the UCVM website.

Research, led by Dr. Alessandro Massolo, PhD, adjunct professor of wildlife health ecology at UCVM, Dr. Claudia Klein, DVM, PhD, UCVM associate professor, and Dr. Kinga Kowalewska-Grochowska of the

University of Alberta, shows that these AE cases are locally acquired, and they are caused by an invasive strain that is known to be very virulent for people, and now is everywhere in wildlife and even in dogs.

Recent studies of coyotes, foxes, and rodents have found a high incidence of infected wild animals in areas across Alberta, including urban off-leash dog parks in Calgary. The infection is spread through the feces of coyotes and foxes that have eaten infected rodents. Dogs get the infection through contact with feces or eating infected rodents, then developing adult worms and passing eggs in their feces.

People can become infected by eating fruit or vegetables contaminated with parasitic eggs. The eggs aren’t visible to the human eye, so the infection can also happen from hand to mouth contact after handling contaminated soil or an infected pet’s fur. “For pet owners, careful hygiene is important, as is regular veterinary care for their dogs,” says Massolo. **CVP**

Alberta Veterinary Technologists Association News



By Amanda Barker, RVT, 2019 ABVTA President

It's crazy to think that summer is already here. It feels like it was just yesterday when we were scraping ice off of our windshields and bundling in multiple layers to venture out to work. Now we're enjoying the beautiful weather, with patio lunches and camping trips. I hope everyone has an opportunity to take some

time off this summer to spend with their loved ones, even if just for a weekend getaway!

The '40 and Fabulous' conference was a huge success! I would like to thank everyone again for attending; we couldn't have done it without you! But...our celebration doesn't end there, and we invite you to continue

celebrating with us throughout 2019. Please join us at our CE event in October that will be held prior to the CanWest Veterinary Conference, in Banff. We are pleased to announce our speaker will be Dr. Marty Becker, founder of the Fear Free Initiative. We are also planning a 40 Year Anniversary cocktail reception - stay tuned for details!

Nominations will be opening soon for positions on our Board and both committees. Being involved with the association has been an amazing experience for me. I have learned so much about the veterinary profession in Alberta, made lifelong connections with so many incredible people, and have seen my passion for the industry continue to grow. It is definitely something I would recommend, and I encourage each of you to reach out to your provincial associations about volunteering.



Eastern Veterinary Technicians Association News



By Stephanie Hall, RVT

Our EVTA 30th anniversary conference just wrapped up in Truro, Nova Scotia and was a huge success! Thank you to all that were involved to make it happen and to those that registered!

On Friday was our dinner and awards. We presented a *Tech of the Year* award to one technician from each

province. Winners of these awards were:

Nova Scotia Tech of the Year: Amy Birchall

New Brunswick Tech of the Year: Jacqueline Duguay

Newfoundland Tech of the Year: Stephanie Oliver

PEI Tech of the Year: Ben Little.

We also presented a brand, new award - the 'Laurel Macintosh' award. Laurel has taught many of us and has been our mentor and coach in so many ways. She will decide the standards for future winners.

Shannon Brownrigg, our RVTTC Executive Director, attended and spoke during our supper. Dr. Ernie Prowse helped us celebrate, representing the APVC committee. We ended the night with our keynote speaker, Kathleen Dunbar. She gave an amazing talk to remind us why we should be so proud of our profession.

Saturday was a day of CE the involved our own RVT specialists speaking on various topics. Specialty topics included anesthesia, dentistry, post-op care, and pearls of wisdom for RVTs. We ended the day with a roundtable discussion with our speakers sharing details of their journey to obtaining their specialty, and they answered the many questions that were asked. We also had a trade show with our industry reps showing us their newest products and information. All in all, it was a great weekend to see old friends and teachers and have a great time learning.

The annual RVTTC AGM is coinciding with WSAVA and CVMA conference in Toronto this July. Christine Masson and myself are the EVTA representatives and are so excited to meet the other reps from across Canada and strategize for the upcoming year!



Saskatchewan Association of Veterinary Technologists News



By Tamara McLoughlin, RVT, SAVT President-Elect

Usually the focus of these articles is to inform everyone of what is happening with the Saskatchewan Association of Veterinary Technologists (SAVT). I actually had a really hard time this month as in my last update I explained what our committees are up to. So instead, I would like to tell you about broader improvements that have been made within our association.

I first started on the SAVT board in 2006. I did several roles : CAAHTT representative (now the Registered Technologists and Technicians of Canada -RVTTC), Secretary, President-Elect, President and Past President. In 2012, I took a break after my first son was born so I could focus on raising my family.

In November 2018, I joined the board again as President-Elect. I wasn't sure what to expect when I returned but I can honestly say I did not expect it to have changed so much. The progress that has been made in 6 years has been amazing!

Our membership numbers have increased substantially and as such our board has adapted. We moved from an Office Administrator to an Executive Director with an actual office space. The board has now updated and revised their role to become more of the governance board that we had always hoped to be, as opposed to an operational one. Gone are the days of "who wants to order t-shirts?", who wants to type out individual proclamation letters for NVTW week, who wants to look into ordering trophies?" Now we sit down at the beginning of the year and form committees, delegate tasks to those committees, meet for monthly conference calls to discuss agenda items, and let our Executive Director work on the everyday operations of a growing organization.

In this time where social media is a huge method of communication, the SAVT has greatly increased our presence with Facebook (Saskatchewan Association of Veterinary Technologists), Instagram (saskvettechs) and

Twitter (@SaskVetTech). We also have an SAVT member communication site on Facebook that is used for everything including CE announcements, informative articles, and RVTs being able to ask other RVTs for advice.

We have also seen more of a collaboration between the SVMA and the SAVT. The SVMA now has an RVT as part of their office staff who connects with our Executive Director on a regular basis. Registration is now a joint effort with both associations working to ensure that all of our members are registered and their continuing education is up to date. We have an RVT serving as a liaison between our two boards that delivers reports between the two. The SVMA registrar sits on our SAVT Advisory Committee. RVTs are SVMA members and are treated as such. We receive all of the SVMA e-blasts, newsletters and we now have a much wider array of CE available to us as offered by the SVMA. We're eligible to attend the SVMA annual conference and through our RVT representative that now sits on the SVMA council we have a voice at their meetings.

At first, all of this was a big adjustment for me; I felt like I wasn't pulling my weight on the board since I didn't have a million little tasks to do. It seemed wrong to just be going on a call once a month and then only checking emails. Over the last 8 months I have really begun to see the value in the new system. Being a member of the board is a lot less daunting when you're not expected to spend a lot of time taking on what can be perceived as mundane tasks. With the focus on assessing situations and making decisions on behalf of our members and their needs, it feels like being a board member carries more responsibility but in a way that doesn't feel overwhelming.

The SAVT understands that there are always areas where we can update and improve on so we are always open to suggestions and welcome feedback at all times. Our Executive Director, Jasmin Carlton, is waiting to hear from you! savt@savt.ca.



TEAM CSI and animal forensics

By Brad Nichols, Senior Manager, Animal Cruelty Investigations, Calgary Humane Society and Dr. Margaret Doyle, BSc, MVB, MSc, MRCVS, Forensic Veterinarian, VCA Canada Riverbend Animal Hospital

Whether veterinarians know it or not, they may already be performing veterinary forensics. Forensics refers to the use of science to collect evidence of crime. It may be something as simple as a physical exam of an animal that is later called as evidence in a cruelty or neglect case. Pathology, toxicology, entomology, radiology, DNA, blood spatter and countless other specialties can be utilized to develop a successful prosecution case of animal cruelty.

Calgary Humane Society's peace officers, and forensic veterinarian Margaret Doyle, have been working together for several years and have found success thinking outside the box and utilizing a heavy dose of veterinary forensics. Outlined here is a chronological timeline of case studies where veterinary forensics were crucial to the prosecution and conviction of animal abusers.

Case 1: Swab sample evidence leads to a conviction

In November of 2009, an injured Doberman puppy was found abandoned in the parking lot of a veterinary clinic. The puppy was emaciated and was suffering from a fractured leg and blunt force head trauma. Public tips pointed to a residence where a similar puppy had just gone missing from. A search warrant was executed on this home to secure evidence of ownership or DNA. A tip from Doberman breeders came in advising that they had recently sold a pup to the subject of our investigation. Officers took buccal swab samples from the tipster's breeding pair and from the injured puppy. The samples were sent to UC Davis Veterinary Genetics Laboratory (VGL) for parentage analysis. The result established the victim was offspring of the tested pair. This evidence bolstered the case against Cynthia Guan and led to a conviction.

Case 2: Entomologist analysis leads to a guilty plea by owner

In 2011, a cat, suffering a large maggot infested wound was seized from its owner's doorstep. The owners alleged that the cat had just been hit by a car and they were about to seek veterinary care. The cat was euthanized by shelter veterinarians as there was no prognosis for repair or recovery, but maggots! Maggots were sent to an entomologist at Simon Fraser University for analysis. From this analysis, species, age and stage of the maggots were established and the wound aged to contradict the story of the owner. This report led to a guilty plea and a conviction, prohibiting future animal ownership.

Case 3: Blood, hair and fecal samples yield positive DNA matches to dead Husky and cat

In January of 2014, a dead husky and cat were found discarded in an alley with their muzzles taped shut; both had suffered injuries ranging from fractures to emaciation. Necropsies of the animals revealed that the husky's cause of death was starvation. The dog had also suffered blunt force trauma to the chest at an earlier date. The cat's cause of death was strangulation; it had also suffered from a fractured tail and blunt force trauma to the face and limbs. An area canvas garnered only that there was a Husky dog that lived at a nearby home and that it hadn't been seen lately. That paired with an officer's involvement with the resident of that home on a previous animal abuse file, having seen a cat similar to the deceased in the unit while seizing an injured puppy, led to an application for a search warrant.

Once the warrant was granted, officers gathered blood, hair and fecal samples from the home. A tissue sample of the Husky and the seized fecal sample were sent to VGL for analysis and yielded a definitive DNA match. With this positive result in hand, hair samples suspected to belong to the dog and cat found inside the house were sent with paired muscle biopsies from the animals to the VGL. These samples yielded positive DNA matches between both deceased animals and hair seized from the scene. These forensics led to the arrest, charge and subsequent conviction of Nicolino Camardi, who was sentenced to a record 22 months incarceration for animal cruelty.

Case 4: Blood spatter analysis and necropsy reveal vicious attack on landlord's dog

Later in 2014, investigators were alerted to a home when a downstairs ten-

ant confessed to having buried his landlords' dog in the backyard. The suspect alleged that he had accidentally hit the dog with his car and had then put the injured dog out of its misery and buried it. Forensics at the scene were able to determine that the vehicle in question had not moved in several hours, calling the story of the dog's demise into question. Using blood spatter analysis, despite attempts by the suspect to clean up the blood trail, it was determined that the dog had been attacked in the garage of the home initially and then had attempted to evade her attacker, running around the yard while being attacked. A necropsy revealed a vicious attack initially with an axe and then with multiple sharp knives, ultimately resulting in the dog's death by exsanguination. Presented with forensic evidence to refute his story, the suspect confessed to having killed the dog in a fit of rage over suspected theft of his property by his landlord.

Robert Nicholson submitted a guilty plea to animal cruelty charges and was sentenced to 90 days incarceration and a lifetime prohibition from owning, caring for or residing with animals. This case was eye opening to the toll that other peoples' cruelty can have on the mental well-being of investigators. Many law enforcement officers say that children and animals are the only true victims, and crimes against them can cause mental trauma to those responding. This case resulted in two officers being unable to continue front line work due to resulting mental health issues.

Case 5: A link between animal cruelty and other crimes

In March of 2016, a disoriented stray pit bull with no identification was admitted to an emergency veterinary clinic. The veterinarian suspected a drug overdose and euthanized the dog based on a poor prognosis. A rapid drug test was done, hitting on all five common illicit drugs. Based on this presumptive bedside test, a confirmatory test was sought through VGL. The resulting toxicology report listed presence of fentanyl, heroine, methamphetamine, cocaine, BGE, ephedrine and nicotine. There were more drugs concurrently in the system of a dog than the specialty lab had ever seen. With no leads, investigators posted on social media a stray dog and requests for an owner to contact them to redeem the animal. When they were contacted by an individual claiming to be the owner, he was promptly arrested. The owner led police to a motel where they found a U-Haul full of stolen goods, drugs, associates with warrants for attempted murder and an underage prostitute. While animal cruelty charges were not pursued, many other criminal offenses proceeded; this was an example of the link between animal cruelty and other crimes.

Brad Nichols attended Mount Royal University, obtaining a degree in Justice Studies. Once graduated, he worked municipal enforcement for a rural county before joining the Calgary Humane Society team in 2005 as a Special Constable. Over the last decade he has been promoted to field supervisor, Department Head of Protection and Investigations and most recently, Senior Manager, Animal Cruelty Investigations. During his 12 years with CHS, he have investigated thousands of animal cruelty files and seized hundreds of animals toward prosecutions and convictions. In the last several years, his department has obtained a high public profile and is internationally recognized as a leader in animal cruelty investigations. He has been able to forge strong strategic partnerships with local Police agencies and forensically inclined veterinarians toward constant improvements in animal cruelty investigations.

Dr. Margaret Doyle graduated from the University College Dublin in 2009 before moving to Calgary to practice in small animal primary care. She began working with animal protection officers from the Calgary Humane Society in 2010 and has since completed a Masters in Veterinary Forensics through the University of Florida to help address a need for better veterinary evidence and involvement in animal abuse cases. She currently consults with multiple law enforcement agencies in Alberta on animal abuse and neglect files and focuses on improving inter-agency cooperation. Dr. Doyle has worked on hundreds of cases, from crime scene analysis to necropsies to providing expert witness testimony at trial. She is passionate about increasing the awareness of the connection between animal abuse and domestic and interpersonal violence as a means to combat violence of all kinds in society.

Case Study: Animal Welfare and Ethical Issues

Ethical Case Study #7: Workplace jokes

I am a vet assistant at a busy small animal practice. I love my job but right now I am uncomfortable around the owner of the clinic. He has been making 'jokes' that are causing me to feel very uncomfortable; they are usually followed by a light smack or punch and then laughter. I haven't said anything at work because everyone else laughs it off, but I don't feel find his jokes very funny. In fact, I find them quite humiliating. I am afraid to tell our office manager because I am concerned that the jokes will be directed at me more if he finds out that I said something. The jokes are sometimes very subtle, and I wonder if maybe I am being too sensitive. Perhaps it's only me that is bothered by it. The light smacks and punches have also been escalating lately and are hard enough that they sting.

What should I do? I would like to stay working at my clinic.

Response by Zelda Matthee-Johnson, RVT

The Canadian Human Rights Commission defines harassment as, "a form of discrimination. It includes any unwanted physical or verbal behaviour that offends or humiliates you. Generally, harassment is a behaviour that persists over time."

Your employer has an ethical responsibility to provide a work environment which is safe, welcome and one in which you can be productive. This type of environment requires open communication where employees feel they can speak up and that their concerns will be addressed without fear of reprisal. There are, of course, a wide variety of management styles and scenarios in the veterinary clinic setting.

In this case, you could remain silent; however, the behavior is unlikely to stop and may continue to escalate. Whether you decides to stay in such an environment or leave, I do feel there is an obligation to speak up. It is possible that this has occurred before, and that the person is unaware that their behavior is making others uncomfortable. If it were you, wouldn't you want to know that something you are doing or saying is making others uncomfortable? Once again, you have a right to feel safe in your workplace. So, what you can do?

- *Speak with the person directly. Remain calm. It may be very difficult to tell your practice owner that you feel the joking is inappropriate for the workplace and that it is making you feel uncomfortable.*
- *Consider confiding in a trusted co-worker. It is entirely possible that you are not the only one uncomfortable with the jokes. Seek their advice. Maybe the both of you can approach management.*
- *Speak with the manager. Again, choose a time and place where you will not be disturbed.*
- *If you are truly not comfortable going to the owner or the manager; consult the local or provincial veterinary association for advice.*
- *Document the incidents in detail. This is in case they ask you for specific examples or should there be reprisal.*
- *Ask about the company workplace safety policy.*

Ethical Case Study #8: Excellent service to increase client loyalty and generate positive online reviews

After adopting our puppy, Pearl, we were invited to a puppy class at one of the local veterinary clinics. All the puppies had to have had a vaccination and be under the care of a veterinarian. It was a very positive experience; the puppies learned to love going to the veterinary clinic and to practice basic skills such as sit, go on your bed, lay down, come when called etc. They were also desensitized and conditioned to being touched all over including paws, using clipper, and other veterinary equipment, through positive reinforcement and play. At the end of each class, the puppies were allowed supervised free play time in the veterinary clinic. The class was very reasonably priced, well taught and well supervised.

More importantly, it gave clients, myself included, an opportunity to ask questions about their puppies. In today's world of google, it is key for

veterinary clients to feel comfortable in asking questions about their pet's health, welfare and behavior, rather than turning to

the internet or non-health related pet industry options such as pet stores, groomers, etc. This in turn creates better client compliance and better healthcare for your patients.

Upon sharing my puppy class experience with a friend who is not in the veterinary industry, she asked me why I had chosen to use this particular clinic since they had such bad online reviews, and asked, "hadn't I read the reviews?" "They charge too much and the staff is rude," she commented. In a recent article in *Forbes Technology Institute*, a study by Dimensional Research was quoted as saying that "90 percent of respondents who recalled reading online reviews claimed that positive online reviews influenced buying decisions, while 86 percent said buying decisions were influenced by negative online reviews".

Veterinarians tend to get significant numbers of complaints or negative reviews online, leading to a research study in California that was published in an article in *Veterinarians Money Digest*, October 2017. They found the top 3 reasons clients will post negative reviews on social media were related to a bad experience that involved feeling that they were rushed through their appointment, feeling that there was a lack of communication, or feeling there was a lack of interest in their pets. Poor service quality was also included; some of the complaints were a pet's poor appearance after a hospital stay or boarding, or the odor of urine on their pet when they came to pick it up. The number one reason for negative reviews on social media was financial concerns, specifically when surprised at the amount of their bill.

The puppy class was simple, well-priced and a terrific service! It showed clients that the clinic does indeed care about their pets and provided a safe place for them to seek advice about healthcare and behavior issues, therefore leading to better client loyalty and compliance. I will be recommending it and writing a positive review online!

What excellent service does your clinic provide to increase client compliance and loyalty, and to prevent negative reviews?

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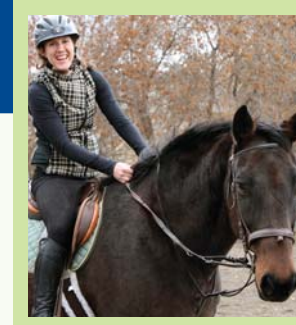
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Bernard E. Rollin (B.A. CCNY, Ph.D. Columbia) is University Distinguished Professor, Professor of Philosophy, Professor of Biomedical Sciences, Professor of Animal Sciences, and University Bioethicist at Colorado State University. He was a major architect of the 1985 U.S. Federal laws protecting laboratory animals. Dr. Rollin is the author of 20 books and over 600 articles. He is considered the "father of veterinary medical ethics," and has written a column dealing with veterinary medical ethics for the *Canadian Veterinary Journal* since 1990.

Erica Gray Gowans, RVT, is an instructor in the Animal Health Technology program at Thompson Rivers University. She has worked in both large and small animal practices. She has a strong interest in animal welfare and community outreach and has spent time volunteering in Nicaragua, and at home in Kamloops, BC. She shares her home with a Jack Russell Terrier named Brighty, a Great Pyrenees named Pearl, as well as her husband, Jordan, and sons Wyatt and Colton. She often spends time riding her horses, Buddy and Uno, and is working on an equine behavior research project.



Bernard Rollin,
BA, PhD



Erica Gray Gowans,
RVT

Continuing Veterinary Education Calendar

JULY 16-19

TORONTO, ON
Canadian Veterinary Medical Association (CVMA) Conference in partnership with the World Small Animal Veterinary Association (WSAVA)
admin@cvma-acmv.org
www.canadianveterinarians.net
www.wsava2019.com

AUGUST 7-9

MONT TREMBLANT, QC
Updates in Dentistry and Emergency Critical Care
joel@vetvacationce.com
www.vetvacationce.com

SEPTEMBER 6

REGINA, SK
Saskatchewan Veterinary Medical Association (SVMA) Conference
www.svma.sk.ca

SEPTEMBER 6-10

WASHINGTON, DC
International Veterinary Emergency and Critical Care Symposium (IVECCS)
info@veccs.org
www.veccs.org

SEPTEMBER 10

VAUGHAN, ON
Developments in Dermatology: 2019 and Beyond
Dr. Kinga Gortel
info@tavm.org
www.tavm.org

SEPTEMBER 11

VAUGHAN, ON
Practical Nutrition: Answering Everyday Questions on Commercial, Homemade and Raw Food Diets
Dr. Jackie Parr
info@tavm.org
www.tavm.org

SEPTEMBER 26-28

GLENDALE, AZ
Veterinary Hospital Managers Association (VHMA) Conference
www.vhma.org

OCTOBER 1

VAUGHAN, ON
Soft Tissue Surgery – A Review of Common Procedures
Dr. Ameet Singh
info@tavm.org
www.tavm.org

OCTOBER 3-5

TORONTO, ON
Veterinary Education Today (VET) Conference
registration@veterinaryeducationtoday.ca
www.veterinaryeducationtoday.ca

OCTOBER 19-22

BANFF AB
CanWest Veterinary Conference
Mandi.duggan@abvma.ca
www.canwestconference.ca

OCTOBER 21-22

DELTA, BC
Delta Equine Seminar on Equine Lameness
www.deltaequineseminar.com

OCTOBER 24 -26

SAINT-HYACINTHE, QC
Congres Veterinaire Quebecois
omvq@omvq.qc.ca
www.omvq.qc.ca

OCTOBER 31 – NOVEMBER 3

SAN FRANCISCO, CA
American Association of Feline Practitioners (AAFP) Veterinary Conference
Complex Disease Management
www.catvets.com

NOVEMBER 1-3

SASKATOON, SK
Saskatchewan Association of Veterinary Technologists Conference
samt@samt.ca
www.samt.ca

NOVEMBER 1-3

VANCOUVER, BC
CVMA-SBCV Chapter Fall Conference
www.canadianveterinarians.net

NOVEMBER 2

EDMONTON AB
Putting the Principles of Pain Management into Practice
Dr. Trisha Dowling
www.easav.ca

NOVEMBER 19

VAUGHAN ON
Anesthesia Through The Decades
Dr. Craig Mosley
info@tavm.org
www.tavm.org

NOVEMBER 24

EDMONTON, AB
Managing Your Feline Patients In-Practice and in the Home
Dr. Kelly St. Denis
www.easav.ca

DECEMBER 5-7

MAHO BEACH, SAINT MAARTEN
Updates in Oncology and Geriatrics and End of Life
joel@vetvacationce.com
www.vetvacationce.com

DECEMBER 7-11

DENVER, CO
American Association of Equine Practitioners (AAEP) Convention
www.aaep.org

JAN 30-FEB 1

TORONTO, ON
Ontario Veterinary Medical Association Conference
pdawson@ovma.org
www.ovma.org

Email your meeting announcement to info@k2publishing.ca

Industry News

The pros, cons, and implications of telehealth and animal welfare

The Canadian Veterinary Medical Association (CVMA) explored the issues and challenges pertaining to telehealth and animal welfare in veterinary medicine at its *Global Issues Forum* that took place on July 16 during the World Small Animal Veterinary Association (WSVA)/CVMA Congress in Toronto, ON.

- **Dr. Heather Bacon**, Veterinary Welfare Education and Outreach manager at the Jeanne Marchig International Centre for Animal Welfare Education at the University of Edinburgh, outlined the UK experience of telemedicine, including areas of concern for the profession and the veterinary ethical and animal welfare implications.
- **Jan Robinson**, Registrar and Chief Executive Officer of the College of Veterinarians of Ontario, shared the history, expectations, and continuing challenges in relation to practice risks and necessary safeguards in this delivery space from a regulatory perspective.
- **Dr. Lori Teller** of the Texas A & M University, focused on how some veterinarians in small animal and food animal practices in the U.S. incorporate telehealth to deliver veterinary medical services, American Veterinary Medical Association resources for veterinarians interested in integrating virtual care in their practices, and the latest legislative and regulatory guidance in this area.

New educational webinar on feline hypertension

The American Association of Feline Practitioners (AAFP) has released a new educational webinar for veterinary professionals entitled *Feline Hypertension: Essentials in Diagnosis and Management*. The webinar and supplementary resources provide valuable continuing education to veterinary professionals on the causes and consequences of feline hypertension, as well as easy-to-access and apply best practices and protocols. During this webinar, which is RACE approved by the American Association of Veterinary State Boards (AAVSB), Kelly A. St. Denis, MSc, DVM, DABVP (Feline), and AAFP's President-elect, reviews key topics in feline hypertension.

Sponsored by Boehringer Ingelheim, the feline hypertension webinar can be found in the AAFP's new eLearning Center and can be applied toward the CE requirements for the Cat Friendly Practice® Program. Veterinary professionals can learn more about the webinar and accompanying supplemental materials at <https://catvets.com/education/online/webinars/feline-hypertension>.

IMLocum Introduces IMThriving – professional training and mentoring web platform.

IMLocum is revolutionizing how Canadian veterinary professionals and practices deal with staffing and career issues, by introducing IMThriving. Recently launched, IMThriving is helping professionals build lasting careers, while helping veterinary clinics support their teams. IMThriving is a subscription-based community offering on-line veterinary continuing education and live and 'hot-topic' conversations with leaders from within our profession - tackling issues like burnout and compassion fatigue, communication and leadership, professional and financial wellbeing, to name a few.

See www.imthriving.vet and www.imlocum.com or email info@imlocum.com for more information.

Dr. Melanie Hicks appointed 71st CVMA President

The Canadian Veterinary Medical Association (CVMA) is delighted to welcome Dr. Melanie Hicks as its new president. Originally from Prince Edward Island, Dr. Hicks obtained a Bachelor of Science from the Nova Scotia Agricultural College, Dalhousie University, before attending the Atlantic Veterinary College, University of Prince Edward Island. Upon graduation in 2003, she moved with her family to Moncton, New Brunswick, and began her career as a companion animal practitioner. After 10 years of enjoyment in private practice, Dr. Hicks moved to industry and currently works as an International Diagnostic Medical director for Zoetis.

She has been involved with the New Brunswick Veterinary Medical Association as a council member since 2009 and was acting president from 2011–2012. She joined the CVMA as a council member in 2013, serving on numerous task forces including the Business Management Advisory Group, Veterinary Wellness Advisory Group, and an innovation/technology group.

"I am honored to serve as the next president of the Canadian Veterinary Medical Association," says Dr. Hicks. "The years I have spent working on various CVMA groups and Council have confirmed for me how important the Association's role is regarding animal welfare advocacy and leadership on national veterinary issues. I look forward to helping the CVMA play a leading role in these areas in the year to come."

Dr. Hicks currently resides in Moncton with her husband and son on a small alpaca farm. She will serve on the CVMA Council as president from July 2019 until July 2020.

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