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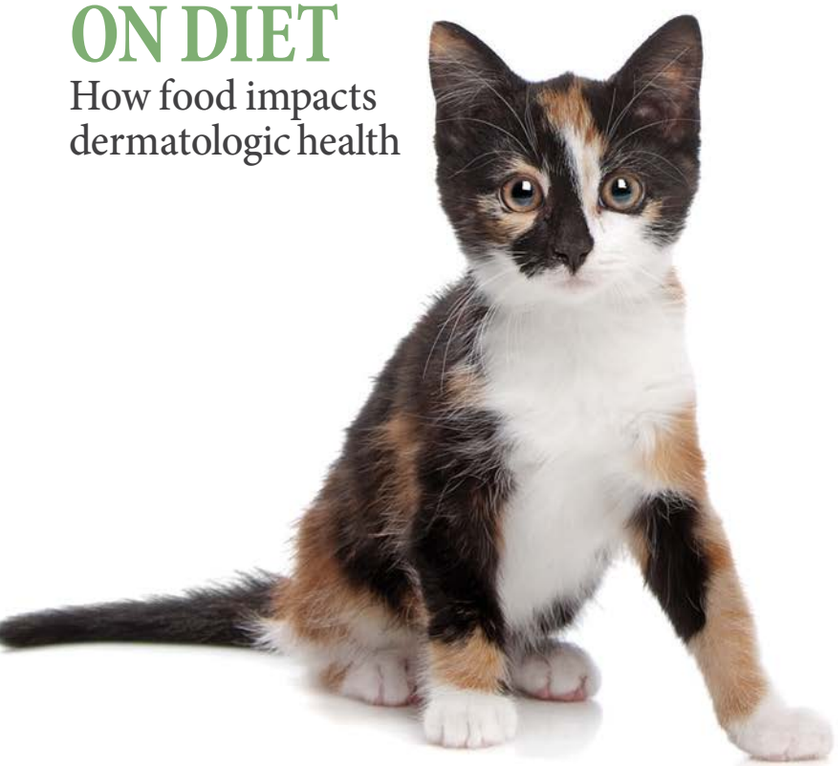

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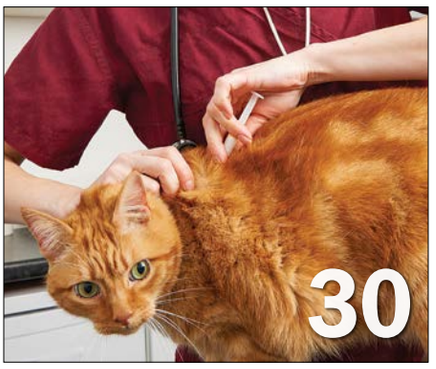


Departments

A dose of reality

I love a good TV show that's entertaining not because it takes you out of reality, but because it puts you right back in it. The kind of show that reflects the conversations, tensions, and uncertainties we are already living through. One recent example? *The Pitt*.

(Warning: spoilers ahead.)

I think a large part of the show's appeal is how realistic it feels. Scroll through social media and you'll find doctors, nurses, and health-care workers giving the medical drama their nod of approval.

In its second season, one storyline that raised a few eyebrows featured the new Dr. Al-Hashimi pushing for the integration of AI within the department. The discussion ran for several episodes because it showed both the promise and the problems of AI in real time. What happens when systems go down? What happens during a server outage? What happens when technology is relied upon too heavily in moments that demand human judgment?

Again, that is reality.

AI has become one of the defining conversations across industries, platforms, and media spaces. Whether in health care, education, business, or veterinary medicine, it seems impossible to avoid discussions about where AI fits and how much space we should give it. We have talked about it since its earliest mainstream emergence, experimented with it ourselves, and now many industries have already integrated it into daily workflows.

The reality is simple: AI is here to stay.

The question now is not whether we use it, but how we use it responsibly.

That is exactly what this issue explores. In this edition, Rebecca Rose, RVT, CCC, discusses how veterinary professionals can work with AI as a team "member" rather than viewing it solely as a replacement or threat.

"In a healthy veterinary team, no one works in isolation. Veterinary technicians rely on veterinarians. Veterinarians rely on technicians," Rose writes. "Client service teams rely on both. AI, when implemented well, functions in much the same way: always available, fast, supportive—but never autonomous or unchecked."

We already know AI is flawed. We know there is still a long way to go before it becomes truly "intelligent." It can miss nuance, misunderstand context, and occasionally produce results that require immediate correction. But again, the reality is that it is not disappearing anytime soon. So, what do we do with that reality?

As Rose notes, "What makes AI transformative is not speed alone; it is responsiveness, reliability, and human verification. When implemented with intention, AI becomes a trusted assistant..."

And to that, I want to reiterate the key phrase: human verification.

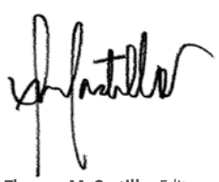
No matter how advanced the technology becomes, there is still tremendous value in human expertise, instinct, oversight, and compassion. That part cannot be automated away.

Read more about Rose's practical tips for working alongside the bots on page 16.

Plus, there is plenty more we are excited to share with you in this issue, including a review of the best periodontal disease treatments, the importance of diet in derm health, and a close look at veterinary vaccines.

We hope you enjoy reading.

Until next time!!



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1. Segarra S, Sanmiguel D, Zuriaga E, et al. Sphingomyelin-rich lipid extract collar for canine atopic dermatitis. *Vet Sci.* 2023;10(6):389.

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From tooth to

A full review of rabbit odontogenic abscesses

By Olivia A. Petritz, DVM, DACZM

Rabbits are becoming increasingly popular in Canadian households.[1] One of the most common disease presentations for this species is dental malocclusion, and a common sequela of this chronic disease is dental-associated (odontogenic) abscesses.

The predisposing factors and treatment options for dental disease and odontogenic abscesses in this species differ significantly from those of other domestic mammals, such as dogs and cats. This article will review the etiology, clinical signs, and treatments of rabbit odontogenic abscesses.

Dental anatomy

All rabbit teeth are high-crowned (hypsodont) and grow continuously throughout their life without developing anatomic roots (aradicular elodont). Their teeth are composed of a clinical crown (visible above the gingiva), reserve crown (sub-gingival), and apex. None of their teeth have anatomic roots; therefore, the term "tooth-root abscess" is not applicable for use in rabbits. Instead, odontogenic abscesses are more accurately referred to as apical or periapical abscesses in this species.

While this may seem like a subtle or even academic difference, it is important as the clinical implications and treatment of a true tooth root abscess in a dog or cat versus a periapical abscess in a rabbit are dramatically different.

Rabbits are normally anisognathic—their maxilla is wider than the mandible. This can lead to uneven wear patterns on their teeth if they are not properly aligned. This is particularly evident if they are fed a pelleted or grain-based diet, as the chewing motion for these foods (more vertical) is different than the chewing motion for their normal vegetation of hay, greens, or grasses (more horizontal).

Rabbit incisors can grow as much as 1 mm per day, and their cheek teeth (premolars and molars) can grow up to 3 mm per week,[2] which further reinforces the importance of proper dental occlusion and wear patterns.

Etiology of dental disease and odontogenic abscesses

There are numerous proposed etiologies for dental disease in rabbits, which indicate this is most likely a multifactorial process. Two broad categories include congenital and acquired dental disease. Congenital dental disease is the least common and encompasses abnormalities such as prognathism and brachygnathism.

There are numerous contributing factors to acquired dental disease, including, but not limited to: dietary factors, calcium/Vitamin D deficiencies, trauma, periodontitis, and aging.

Most importantly, dental disease in rabbits is almost always chronic and progressive, a condition referred to as the progressive syndrome of acquired dental disease (PSADD).[3] Early changes in this disease include elongation of the teeth apices, which may be palpable along the ventral mandible. This can progress to malocclusion and alterations of the shape and structure of the teeth.[4]

In addition, the periodontal space often becomes widened due to inflammation of the periodontal ligaments and/or loss of surrounding alveolar bone.[2,3] This periodontal pocketing can subsequently be colonized by bacteria, which can lead to periapical abscessation.

In severe acquired dental disease, the tooth apex can penetrate through the periosteum of the surrounding alveolar bone, which can also lead to periapical abscessation and osteomyelitis.[5] Uncommonly, penetrating foreign bodies, such as blades of hay or other ingesta, can become lodged in the periodontium and cause odontogenic abscessation.

Clinical presentation

According to a recent retrospective article on odontogenic abscesses in rabbits from

Figure 1

Photo courtesy Dr. Olivia A. Petritz

Three rabbits, each with varying degrees of right-sided facial swelling secondary to odontogenic abscesses.

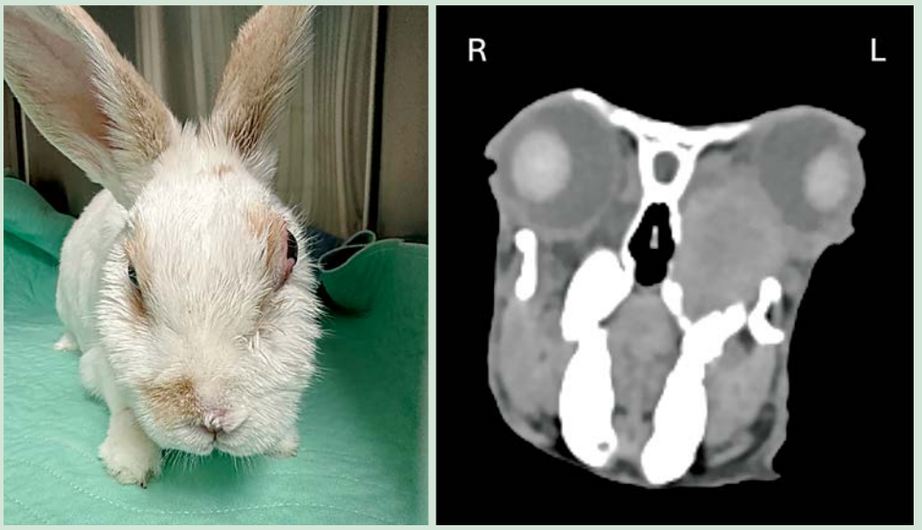
tissue

a single institution, the average age of rabbits presented for this condition was 4.5 years (range 6-134 months), with no sex predilection. Lop-eared rabbit breeds were the most common, and hyporexia/anorexia was the most common presenting complaint.[6] Rabbit odontogenic abscesses often cause variable degrees of focal facial swelling (Figure 1) and can be found in a variety of locations. However, abscesses are most often found on the ventrolateral aspect of the mandible or the lateral maxilla.[5] This is in concordance with another study that found 71 per cent of odontogenic abscesses in rabbits occurred in the mandibular quadrants, while only 29 per cent affected the maxillary quadrants.[6]

Odontogenic abscesses can also form in the retrobulbar space, leading to unilateral exophthalmos (Figure 2). Palpable abscesses are often firm, spherical, non-mobile, and non-painful. Rabbits may display a variety of other clinical signs, depending on the location and extent of the abscessation and concurrent dental disease. These include dysphagia, ptyalism, and reduced appetite/fecal output. However, even a rabbit with a large odontogenic abscess could have no systemic signs. Interestingly, it is rare for a rabbit to be pyrexic with dental-associated abscesses. While uncommon, not all focal facial swellings in rabbits are abscesses, and neoplasia should always be a differential (Figure 3).

In addition, not all facial abscesses in rabbits are odontogenic (Figure 4) in origin; however, this is also rare.

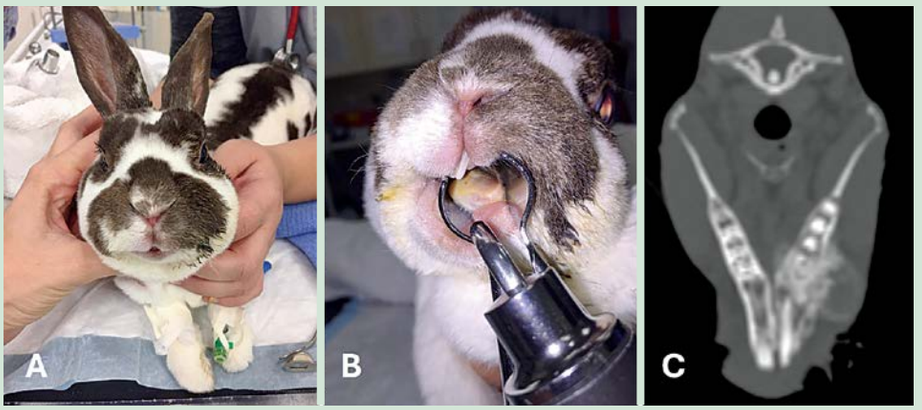
Figure 2



An adult rabbit with unilateral exophthalmos secondary to a retrobulbar abscess confirmed on skull CT.

Photo courtesy of Dr. Sarah Ozawa

Figure 3



A nine-year-old rabbit presented for reduced appetite and a firm left-sided lateral mandibular swelling was noted (A) that was also visible on intraoral examination (B). A large lytic mandibular mass was confirmed on CT of the skull (C), and fine needle aspiration was consistent with an osteosarcoma.

Photo courtesy Dr. Olivia A. Petritz

Diagnostics

If accessible, fine needle aspiration (FNA) of a suspected odontogenic abscess could be considered for initial diagnosis to confirm the presence of purulent material. A complete blood count is often not useful in the diagnosis of odontogenic abscesses in rabbits, as they rarely mount a significant inflammatory response, even in the presence of significant abscessation.

Plasma biochemistries could be considered if anesthesia is planned for the diagnostic and/or treatment of an odontogenic abscess.

Imaging is one of the most important diagnostic tools for odontogenic abscesses, typically including skull radiographs and/or a skull CT scan. As radiographs are insensitive for evaluation of the soft tissues of the skull, a skull CT scan is highly recommended, especially for potential surgical planning and overall prognosis.

Increasing numbers of general practices have access to cone-beam CT, which offers higher resolution for bones and teeth, but provides poor soft-tissue contrast compared to a conventional CT. Therefore, a cone-beam CT may still be superior to a skull radiograph, but it still has significant limitations compared with a conventional CT.

A retrospective article published in 2020 reviewed CT findings from 100 rabbits with dental disease from a single institution.[7] Those authors found widening of both the periodontal ligament space and the interproximal dental space was statistically correlated with periapical abscess formation, and 76 per cent of all rabbits had signs of periodontal ligament space widening, suggesting that a CT scan could detect early dental abscessation before it became clinically evident.

Another retrospective study found 85 per cent of rabbits with odontogenic abscesses confirmed on CT also had concurrent dental malocclusion, which fits with the etiology of this disease. In addition, that study found 21 per cent of rabbits had concurrent rhinitis or sinusitis, and 16 per cent had concurrent otitis media—both of which are diseases that are challenging to diagnose based on radiographs alone.[6] This further reinforces the benefits of performing a skull CT compared with standard skull radiographs in rabbits with suspected dental abscesses.

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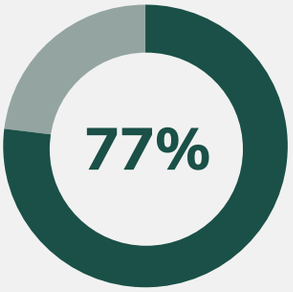

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3. Forster S. *et al.* Vet Dermatol. 2025;36(2):165–176

CASE STUDY: Oliver

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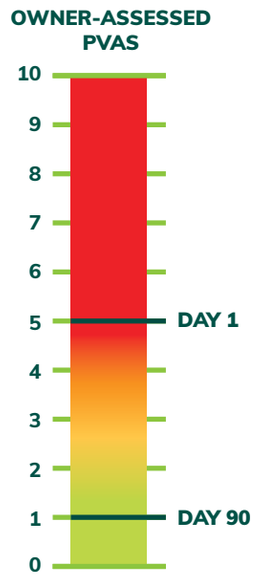

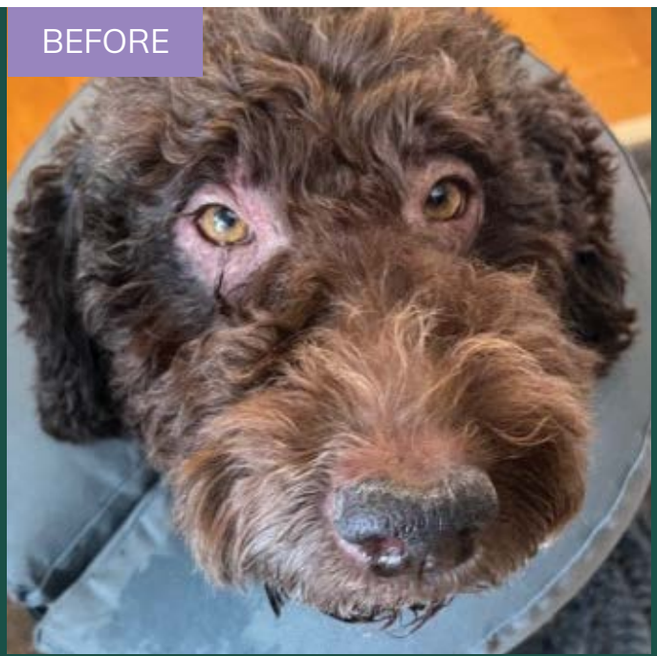

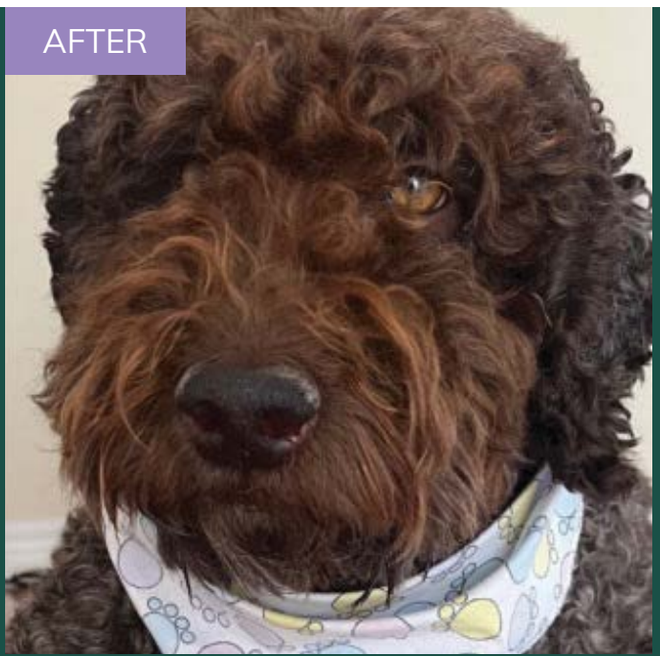

Read Oliver's full case report and learn how Zenrelia delivers **fast, visible relief** at **Zenrelia.ca/success-stories**

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Figure 4

Photo courtesy Dr. Olivia A. Petritz

A five-year-old rabbit was referred for a chronic facial abscess (A). The abscess was surgically debrided (B), and no underlying dental involvement was noted on radiographs (C) nor on CT of the skull.

Medical treatments

Rabbit abscesses are typically well encapsulated with a thick, poorly vascularized capsule, which limits systemic antibiotic penetration into the abscess. As rabbits have heterophils rather than neutrophils, their purulent material is much thicker than other domestic mammals. Therefore, lance and drain placement for treatment of any abscesses is not recommended in rabbits.

Even if surgical intervention is elected for treatment of an odontogenic abscess, systemic antibiotics are still recommended. Ideally, antibiotic selection should be based on both aerobic and anaerobic cultures.

A recent review article on odontogenic abscesses in pet rabbits summarized the most common aerobic bacterial species isolated from rabbit abscesses based on six peer-reviewed studies—core pathogens included *Pseudomonas aeruginosa, Pasteurella multocida, Escherichia coli, Staphylococcus* spp., and *Streptococcus* spp.[2] Several previous studies also recovered anaerobic bacteria (*Fusobacterium* spp., *Peptostreptococcus* spp., and others) from rabbit abscesses, highlighting the importance of both testing for and treating anaerobes.[6,9]

Crăciun *et al.* also summarized the antibiotic resistance patterns in all previously published studies of rabbit odontogenic abscesses to date and found concerning patterns of multidrug resistance in certain bacterial species, most notably *Stenotrophomonas maltophilia* and *Burkholderia* spp. However, low or no resistance was reported for *Pasteurella multicide, Streptococcus* spp., and *Staphylococcus* spp.[2]

Due to a plethora of reasons, medical management with long-term systemic antibiotics may be the only treatment option available for an odontogenic abscess in a rabbit. In one retrospective study of 35 cases, the success rate of medical therapy alone for the treatment of rabbit odontogenic abscesses was 25 per cent.[6] If a culture and sensitivity of the abscess is not an option, the most commonly prescribed empirical antibiotics are azithromycin, enrofloxacin, metronidazole, parenteral penicillin G procaine, trimethoprim-sulfamethoxazole (TMS), or a combination thereof.[2,6,8] Unfortunately, there are too many variables to make broad recommendations on empirical antibiotic selection for all rabbits with odontogenic abscesses.

The current retrospective data on treatment outcomes and culture results are primarily from single institutions, which inherently may reflect institutional bias in antibiotic selection and potential differences in bacterial flora amongst different patient populations.

Surgical treatments

Surgical intervention, in addition to systemic antibiotics, is the treatment of choice for most odontogenic abscesses in rabbits.[2,5,6,9-11] However, similar to many common conditions in companion animals, there is no consensus statement on the recommended treatment for this condition.

The most common surgical approach reported is incision into the abscess capsule, debridement and flushing of the abscess contents, followed by marsupialization of the capsule to facilitate continued flushing of the abscess capsule post-operatively.[5] There are several reported modifications to this surgical approach, including more radical debridement of the diseased tissue,[10] tooth removal via extraoral and/or intraoral approach,[11], and packing the abscess capsule with antibiotic-soaked gauze and or antibiotic-impregnated beads.[2,9]

Combinations of these approaches have also been reported.[5] Each of these techniques has been evaluated retrospectively with variable success rates. However, these successful outcomes are difficult to compare and to extrapolate to individual clinical cases due to patient variability and surgical experience in this species. Lancing and flushing of the abscess without additional debridement or marsupialization anecdotally has a lower success rate and is not recommended in rabbits.[5]

Dental formula:

	INCISORS	CANINES	PREMOLARS	MOLARS
Rabbits	2/1 Elodont, hypsodont	0/0	3/2 Elodont, hypsodont	3/3 Elodont, hypsodont

Olivia A. Petritz, DVM, DACZM, graduated from Purdue University and then completed several internships and a residency in the field of zoo and exotic animal medicine. Dr. Petritz became a diplomate in the American College of Zoological Medicine in 2013, specializing in zoological companion animals (exotic pets). Petritz started an exotics service at a specialty hospital in Los Angeles, Calif., following her residency, and is currently an associate professor of Avian and Exotic Animal Medicine at North Carolina State University.

References

Scan the QR code to view references for this article online.

People in the News

Photo courtesy Lakehead University website

Terri O'Sullivan

■ **Terri O'Sullivan**, DVM, PhD, has been appointed as the program and operations advisor to the dean of the Faculty of Science and Environmental Studies at Lakehead University, as well as to the Ontario Veterinary College (OVC) at the University of Guelph. This appointment marks the next phase of the Collaborative Doctor of Veterinary Medicine Program (CDVMP). Dr. O'Sullivan will continue her role at OVC while also taking on significant responsibilities to support the implementation and operational development of the CDVMP at Lakehead. In addition, she will serve as external adjunct faculty in Lakehead's Department of Veterinary Science. O'Sullivan will collaborate directly with CDVMP leads at OVC to ensure a smooth rollout of the program.

Photo courtesy Independence Pet Holdings, Inc.

Vandana Venkat

■ **Vandana Venkat** is the new president of Independence Pet Group (IPG). Throughout her career, Venkat has held senior positions in which she developed underwriting and operations strategies, promoted advancements in data and AI, and guided organizations through periods of accelerated, profitable growth. Earlier in her career, she also worked in product development, pricing, and risk management. Venkat holds dual master's degrees in industrial engineering and operations research, as well as applied mathematics, from the University of Illinois at Urbana-Champaign.

■ **Muhammad Bilal**, DVM, a PhD candidate at the University of Calgary's Faculty of Veterinary Medicine (UCVM), has earned a competitive residency with the National Centre for Veterinary Parasitology (NCVP)–the only program of its kind in North America. Dr. Bilal is developing a non-invasive method to detect parasites, such as cattle lice, with potential benefits for the livestock industry. Supported by Merck Animal Health, the program combines research and clinical training over three years, followed by a postdoc. Bilal is one of six current residents and will be eligible for board certification upon completion.

■ **Kathleen Delaney**, DVM, assistant professor at McMaster University, has received the Harry C. Rowsell Lifetime Achievement Award from the Canadian Council on Animal Care (CCAC) for her contributions to animal welfare in science. Dr. Delaney started as a clinical veterinarian and then became the associate director of McMaster's central animal facility. Later, she took on the role of executive director of the animal care and use program. Most recently, she has served as the director of McMaster's new Department of Veterinary Services and Compliance. Delaney has developed key protocols, training courses, and educational initiatives, including a pre-veterinary program.

Photo courtesy Hill's Pet Nutrition Canada

Caitlin Grant

■ **Caitlin Grant**, BSc, DVM, DVSc, Dip ECVN, has been appointed as the Hill's Pet Nutrition Professor in Animal Nutrition at the University of Calgary Faculty of Veterinary Medicine (UCVM). This professorship, funded by Hill's Canada, aims to enhance veterinary research and nutritional education within the UCVM curriculum. Dr. Grant, a board-certified veterinary nutritionist with extensive experience, will develop a clinical nutrition service to provide practical learning for students and support for pet parents in Alberta. She has previously worked at the Ontario Veterinary College (OVC) and has a strong background in veterinary nutrition.

■ The American Association of Equine Veterinary Technicians held its inaugural Canadian conference this spring at King Animal Hospital in King, Ont. This milestone event aimed to address the gap in equine veterinary education in Canada and highlighted the country's potential to play a larger role in this area. The conference featured lectures by surgeons Dr. Bonder, Dr. Albert Torrent, and Dr. Natalie Cote, who led hands-on sessions in which technicians practiced with thoracic ultrasounds and dental x-rays.

■ PetSmart Charities of Canada is working to address Canada's growing veterinary care gap through an $18 million commitment aimed at improving access to veterinary services, particularly in underserved communities and for families seeking affordable care. Since 2023, the organization has distributed nearly $10 million in funding to support these efforts. One recipient is the Nova Scotia Society for the Prevention of Cruelty to Animals (SPCA), which recently received a $200,000 grant to help expand access to veterinary care. The funding will be split between increasing appointment availability at Tartan Tails Veterinary Hospital in Stellarton and supporting student education focused on accessible care at the Nova Scotia SPCA College of Animal Welfare in Dartmouth.

■ A presumptive positive case of rabies has been identified in a raccoon in Little Ridge, near St. Stephen. The New Brunswick Provincial Veterinary Laboratory is conducting further testing to confirm the case. Vaccine baits are being distributed along routes 725, 730, and 735, as well as in nearby areas. Mayor Allan MacEachern informed the community after receiving a notification from the chief veterinary officer. Residents are advised to keep their pets on leashes for two weeks after bait distribution and to avoid handling the bait, as it is not harmful to pets.

■ The N.W.T. Society for the Prevention of Cruelty to Animals (SPCA) is urging the territorial government to legally recognize domestic animals as sentient beings instead of property, as current laws, like the *Dog Act*, classify dogs as owners' property. The SPCA has received ongoing concerns from both tourists and residents regarding animal care and conditions, noting that existing legislation limits authorities' ability to intervene.

■ The Wilder Institute/Calgary Zoo is set to introduce a new species this summer as part of the initial phase of its Imagine Asia initiative. Zoo officials announced the Sichuan takin, which is said to resemble a mix of a goat, an antelope, a muskox, and a moose, will be part of the new Asian Highlands section. Kyle Burks, the president and CEO of the zoo, shared that the institution will bring in four takins from zoos across the country. These animals are expected to arrive in Calgary before the summer launch. This announcement is part of a $8 million funding pledge from Travel Alberta aimed at enhancing tourism activities throughout the province, including the long-term development of the Imagine Asia project. .

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Raise value when you raise fees

BUSINESS BUILDER

By Wendy S. Myers, CVJ

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A practice owner raised the exam fee from $78 to $95 to cover rising costs and meet the local average. How will clients react to the 18 per cent hike?

When you raise fees, you must increase value and client experience. Value perception influences buying decisions, client satisfaction, and loyalty.[1] Here are opportunities to communicate value:

Preview services at the start of appointments

For a wellness visit, technicians or assistants will say, "I am <technician name>, who will assist Dr. <Name>. <Pet name> needs an exam and vaccines for distemper/Parvo, Rabies, Bordetella, Leptospirosis, and Lyme. We will test for intestinal parasites and heartworm/tick diseases. <Pet name> needs refills of flea/tick and heartworm disease protection. I will tell you about rebates so you may save the most. What questions can I answer before we begin?"

Use the action word "needs" rather than the wiggle word "recommend." Clients may hear that a service or product is just a recommendation and is not medically necessary.

Explaining the list of services and products upfront allows pet owners to ask about the cost of care if they have financial concerns.

If the client asks, "How much will everything cost?" the technician can access fees on a computer in the exam room. Share the total rather than individual prices—or you risk having the client decline services before the veterinarian performs the exam. Say, "Let me review the medical services and fees with you. Before deciding, let's have the doctor perform the exam, and then he/she will help you prioritize which services and products your pet will need."

To increase affordability, more clients may turn to preventive care plans with monthly payments and third-party financing to spread the cost of care over time.[2]

If the client does not ask about fees, the technician can ask a clarifying question: "What questions can I answer before we perform these services, or shall we get started?"

Verbalize physical exams

Exams are the starting point of care. Communicator Dale Carnegie taught the presentation structure of "Tell them what you're going to tell them, tell them, and then tell them what you just told them."[3] Break the exam experience into three parts:

1) *Before you start the exam, tell clients what you're going to do.* Say, "Hello, <client name> and <pet name>. I'm Dr. <Name>. My technician shared your pet's vital signs and the information you discussed. Thank you for completing the online health form in advance. I read your answers and will ask you follow-up questions about your pet's health. Then I will perform a nose-to-tail exam and will explain what I find. Does your pet have any health or behaviour concerns you want me to address today?"

   Praise clients for submitting online health forms in advance—what gets rewarded gets repeated. Ask about health or behaviour concerns upfront so you can prioritize services and efficiently use appointment time.

2) *Tell them what you are doing, verbalizing your exam with play-by-play descriptions.* Convey the exam's value through words said with a caring tone of voice and non-verbal cues, such as open body posture and eye contact, according to Ryane E. Englar, DVM, DABVP (Canine/Feline), and author of *A Guide to Oral Communication in Veterinary Medicine*.[4] Body language is how clients formulate opinions about veterinarians, including perceived compassion, competence, and confidence, says Dr. Englar.

Say, "During <pet name>'s physical exam, I will focus on 12 areas, including eyes, ears, nose and throat, teeth and gums, coat and skin, heart, abdomen, limbs and paws, urogenital system, lungs, gastrointestinal system, and weight." Explain what you are examining with statements such as:[5]

- "I am listening to your pet's heart and lungs."
- "I am palpating your pet's body, feeling for any signs of swelling, evidence of lameness, such as limited range of motion, and signs of pain."
- "I am examining your pet's teeth for periodontal disease, damage, or decay."
- "I am looking at your pet's ears for signs of bacterial infection, ear mites, wax build-up, or polyps."

Consider AI scribe tools to document electronic medical records while keeping clients engaged. If you have your back to clients while typing on the computer, you risk appearing uninterested in their perspectives or that you don't value them as members of the health-care team, warns Dr. Englar.

3) *Tell them what you told them.* Explain exam findings, diagnosis of any health concerns, and need treatments. Pet owners want to know, "What should I do next?"

Show value when collecting payment

Close the visit in a way that adds meaningful value—it is the final moment of the client's experience. If clients will pay at the front desk, client service representatives (CSRs) should follow five steps:

1) *Stand up and make eye contact.* This sounds basic, but it is powerful. If the CSR stays seated, swipes a credit card, and passes back a receipt, there is no service experience. Do not risk making clients feel they are being "processed." Standing shows you are ready to help. Getting on the same eye level indicates courtesy and respect.

2) *Use client and pet names.* To personalize the checkout experience, say, "Hi <client name>. I'm ready to help you check out for <pet name>'s wellness appointment today."

3) *Summarize services and products.* This is the most important step to create value. Use easy-to-understand terms to explain medical services, such as "intestinal parasite screen" instead of "fecal test." Summarize medications and products to double-check all items are in the client's hands. Mention rebates to show the benefit of buying drugs from your hospital.

   Say, "Dr. <Name> gave <pet name> a nose-to-tail exam and vaccines to protect him from distemper/Parvo, Rabies, Leptospirosis, Lyme, and Bordetella. <Pet name> had an intestinal parasite screen and heartworm/tick test. You have refills of 12 months of flea/tick and heartworm disease protection. I applied the rebate of $XX."

4) *State the total and ask for payment.* Don't say individual fees, which may cause clients to question charges or struggle to add numbers in their heads. Share the total amount after summarizing services and products. Say, "Your total is $__. Which payment method do you prefer?" Asking about preferred payment methods subtly yet professionally communicates payment is due now.

5) *Close with appreciation.* Say, "<Client name>, thank you for the opportunity to care for <pet name>. I emailed your receipt and updated reminders. We look forward to seeing you and <pet name> again."

When your team emphasizes value in every interaction, you will build client trust, retention, and loyalty. Define your practice by higher experiences, not higher prices.

Wendy S. Myers, CVJ, trains veterinary teams to communicate with clarity and confidence, inspiring client trust and better medical care. Founder of Communication Solutions for Veterinarians, she teaches proven skills through online courses, conferences, and consulting. Myers' experience as a partner in a specialty and emergency hospital gives her insight into practice challenges. Explore her online training at CsvetsCourses.com.

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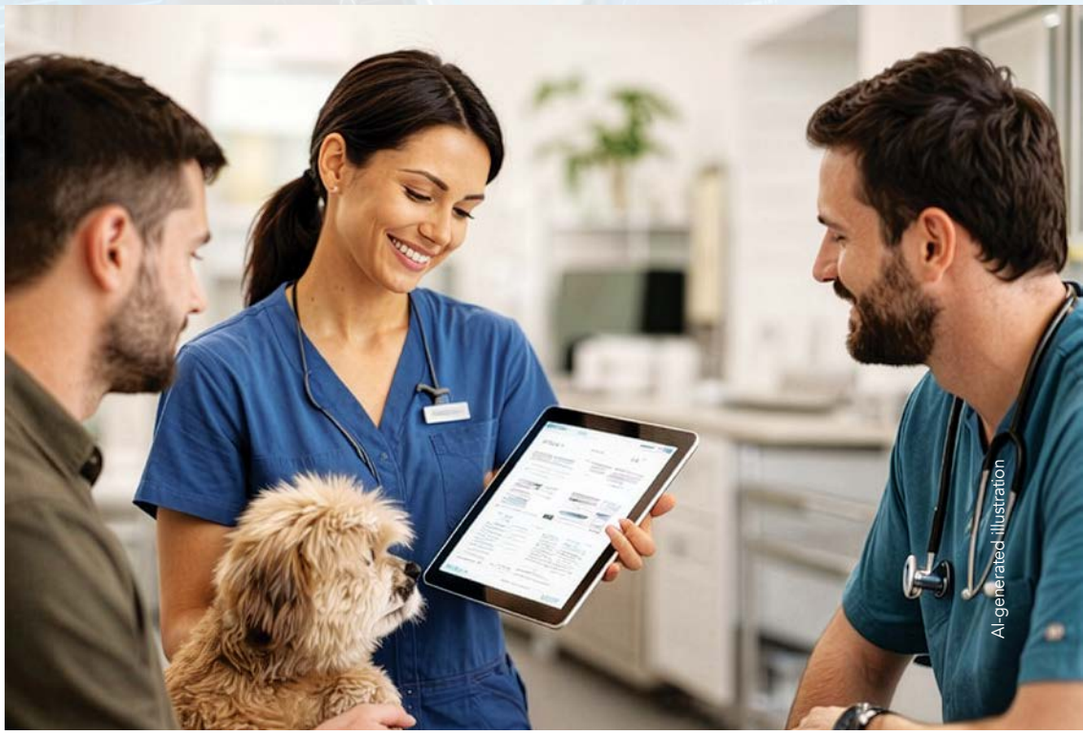
Integrating AI as a team 'member'

By Rebecca Rose, RVT, CCC


AI-generated illustration

Artificial intelligence (AI) has rapidly moved from an abstract concept to an everyday reality within veterinary medicine. What was once discussed as "the future" is now actively shaping how medical records are created, how veterinary teams communicate, how clients understand care, and how veterinary professionals protect both their time and well-being.

However, the real story of AI in veterinary practice is not about software—it is about relationships.

Over the past several years—and especially through recent deep collaboration integrating AI into education, writing, and workflow design myself—I have experienced firsthand what happens when the technology is implemented not as a replacement for people, but as a responsive, reliable, and accountable team "partner." When I need support, it is available. When efficiency matters, it delivers. Everything it produces is reviewed, refined, and fact-checked by a human professional. That experience mirrors what successful veterinary teams are discovering inside their practices.

AI is available when needed (for me, that can be a quick audio memo at 3 a.m.), works efficiently, supports accuracy, and remains guided by human expertise; it does not erode trust—it builds it.

We will explore how AI can be integrated into veterinary teams as a true team member: improving patient care, strengthening team engagement, supporting well-being, enhancing client understanding, and reducing professional risk.

A supportive team 'member,' not a replacement

In a healthy veterinary team, no one works in isolation. Veterinary technicians rely on veterinarians. Veterinarians rely on technicians. Client service teams rely on both. AI, when implemented well, functions in much the same way: always available, fast, supportive—but never autonomous or unchecked.

One of the most striking benefits of working with AI has been its availability. When I need to organize complex information, synthesize ideas, or refine content, it is there immediately. That same principle applies in practice when AI is used for documentation, medical record support, and communication. There is no need to recreate the wheel when systems already exist to support the work, so long as the team remains firmly in control.

AI assists; humans decide.

Where AI works best in veterinary teams

Medical records and referrals

Accurate, thorough medical records are foundational to good medicine. AI-assisted documentation—particularly when paired with clearly narrated, audible physical exams—improves clarity, consistency, and completeness. When records are stronger, referral partners receive better information, continuity of care improves, and patients ultimately benefit.

Veterinary technicians and assistants play a pivotal role in this process: ensuring recordings are initiated, key details are captured, and records accurately reflect what occurred in the exam room. Clear documentation reduces delays, improves referral acceptance, and supports better patient outcomes when moving between general practice, specialty care, and emergency care.

After the client has given proper consent to audio recording at the beginning of the consultation, magic is in the air. AI can remove fillers, clean up a conversation, and integrate into adaptive veterinary software.

Standard operating procedures

Your team may have placed "Update SOPs" on last year's goals list. This is quite an undertaking, in anyone's experience. Now, with the aid of AI, what may have taken months may take a matter of a few hours. Seriously, the epitome of efficiency.

Team efficiency and well-being

One of the most immediate benefits of AI integration is reclaimed time. Reducing the administrative burden of documentation allows team members and veterinarians to leave closer to the end of their scheduled shifts, decreases after-hours charting, and lowers cognitive load.

Efficiency alone, however, is not the goal. Efficiency with support feels sustainable. It creates space for patient care, mentoring, collaboration, and recovery—critical factors in addressing burnout and compassion fatigue throughout veterinary medicine.

Client understanding and compliance

AI also supports clearer, more consistent communication with clients. When physical exam findings and treatment plans are accurately captured, discharge instructions align with what was discussed in the exam room. Clients are more likely to understand

recommendations, follow through with care, and feel confident in the veterinary team's services.

Veterinary technicians—often responsible for discharge education—benefit from having structured records that support clear, confident conversations and reduce miscommunication.

Where AI does not work alone

AI should never function independently in veterinary medicine. It does not replace clinical judgment, ethical decision-making, emotional intelligence, or accountability. It cannot read nuances, interpret emotional distress, or make value-based decisions.

Just as in my own work, AI is most effective when it drafts and organizes, while trained professionals review, correct, and finalize every output. Human oversight is not optional—it is essential.

Common pitfalls and how teams avoid them

Several challenges commonly arise during AI implementation. Poor audio quality or unclear narration can compromise documentation. Over-reliance on AI without review can introduce errors. Team resistance may develop if change feels imposed rather than collaborative. Reclaimed time may be misused to increase volume rather than improve care and team well-being.

These pitfalls are avoided through intentional planning: training teams to speak clearly for documentation, establishing firm review protocols, involving team members early, piloting systems gradually, and using regained time to support well-being and quality—not simply productivity.

Regulatory protection through better records

Clear, complete documentation provides an often-overlooked benefit: reduced risk. Accurate medical records that reflect what was examined, discussed, recommended, declined, and agreed upon protect the entire team in the event of client complaints or state veterinary medical board review.

Strong records support transparency, defensibility, and professional confidence—benefits that extend far beyond efficiency.

The veterinary team as the bridge

Veterinary team members serve as the bridge between technology and care. Their engagement, training, and trust determine whether AI integration succeeds or fails. When teams are respected and involved in implementation, adoption is smoother, and outcomes are stronger.

Final reflection: Trust is the real technology

What makes AI transformative is not speed alone; it is responsiveness, reliability, and human verification. When implemented with intention, AI becomes a trusted assistant that allows veterinary professionals to focus on what matters most: patient care, client relationships, and sustainable team well-being.

The future of AI in veterinary medicine is not automation for its own sake. It is about honouring the intelligence, experience, and humanity of veterinary professionals—while building systems that truly support them.

Rebecca Rose, RVT, CCC, has a diverse background serving the veterinary community as a credentialed team member and leader, with more than 38 years of experience. Rose has worked in and managed veterinary clinics, collaborates with industry partners, authors articles and books, and facilitates engaging team workshops. She was recently appointed to the Colorado State Board of Veterinary Medicine as one of the first RVT members.

Closing the care gap

A look at pet insurance as a clinical tool

By Eric Coulson

Photos courtesy Trupanion

As someone who has spent the past 25 years at the intersection of pet health and finance, I have seen the veterinary profession reach incredible new heights. Today, veterinary teams have diagnostic tools and surgical expertise to manage even the most advanced cancers and critical care cases. However, as clinical capabilities soar, the bridge between a veterinarian's expertise and a patient's recovery is increasingly being severed by a harsh economic reality.

The *2025 PetSmart Charities of Canada-Gallup State of Pet Care Study* revealed 50 per cent of Canadian pet owners have declined or skipped necessary care, with nearly 70 per cent citing cost as the primary factor.[1] Perhaps even more solemn is that one in three pet owners reported knowing someone whose pet died simply because they could not afford the bill.[2]

As a profession built on compassion, this places a heavy emotional burden on veterinary teams. While nearly all veterinarians report client finances limit the recommended care they can provide, 73 per cent find it difficult to watch clients struggle to pay, and nearly three in four cite "economic euthanasia" as the most painful part of their career.

With veterinary service prices rising by six to eight per cent annually—continually outpacing general inflation—it is now necessary for the industry to adopt a more sustainable approach to the business of care.

Pet insurance is not just a financial product; it is a practical clinical tool. When a pet is insured, the conversation in the exam room shifts from "What can the owner afford?" to "What does this patient need?" It empowers veterinary teams to recommend the medicine they were trained to practice, ensuring a pet's survival is based on its physiology and the medical team's skill, rather than the client's credit limit.

Here are three case studies that show how changing the conversation from finances to patient-focused care can lead to better alignment between veterinarians and pet owners, thriving pets, and ultimately, lives saved.

1) Orthopedic intervention versus salvage surgery

Location: Cox's Cove, Nfld.
Condition: Distal femur fracture (trauma)
Insurance paid: $10,142.75

Clinical presentation and emergency stabilization

A young goldendoodle was presented to a local clinic in Newfoundland following a high-impact motor vehicle accident. On presentation, the patient was in a state of traumatic shock, and diagnostic radiographs revealed a fracture of the right femur.

In an effort to avoid amputation and recognizing the complexity of the fracture and the risk of permanent lameness or non-union, the primary care veterinarian referred the clients for advanced limb-sparing surgery. The catch was that the nearest surgical specialist was located at a specialty centre in St. John's—a 700-km journey from Cox's Cove.

Surgical and post-operative challenge

Limb salvage in large-breed dogs requires precision and robust hardware. The patient underwent a complex open reduction and internal fixation (ORIF) of the femur. The surgical team used a dynamic compression plate (DCP) secured with nine screws to neutralize the forces acting on the fracture site.

CASE STUDY 1: Goldendoodle from Cox's Cove, Nfld.

The recovery, however, was not linear. Post-operative complications included a persistent febrile response, significant blood loss requiring a unit of whole blood, and the need for intensive intravenous antibiotic therapy. The patient's comfort was managed via a constant rate infusion (CRI) of analgesia likely to facilitate early, controlled mobilization.

Clinical takeaway: Insurance as a clinical enabler

This case illustrates how pet insurance shifts the conversation tom "What is the best treatment path for my pet?" The clients noted that without insurance coverage, the cost of specialized hardware and critical care nursing would likely have dictated an amputation.

By removing the financial barrier, the were able to decide based on what was best for their dog rather than finances, while the surgeons pursued the best medical treatment to preserve the dog's biomechanical integrity.

The patient ultimately regained full weight-bearing mobility, a result only possible because the pet owners had the peace of mind to authorize referral and intensive post-operative care without hesitation.

2) Multimodal oncology and the extended gift of time

Location: Kingston, Ont.
Condition: High-grade soft-tissue sarcoma
Insurance paid: $20,509.70

Diagnosis and staging

A rescue dog in Kingston, Ont., was presented with a mass on the rump. An initial, incomplete excision revealed a high-grade, undifferentiated soft-tissue sarcoma with incomplete margins. Given the aggressive nature of these tumours, the patient was referred to a specialty cancer centre for staging.

The diagnostic workup was exhaustive, including thoracic radiographs, abdominal ultrasound, CT, and MRI. Stage 3 cancer was confirmed. Even with aggressive intervention, the prognosis

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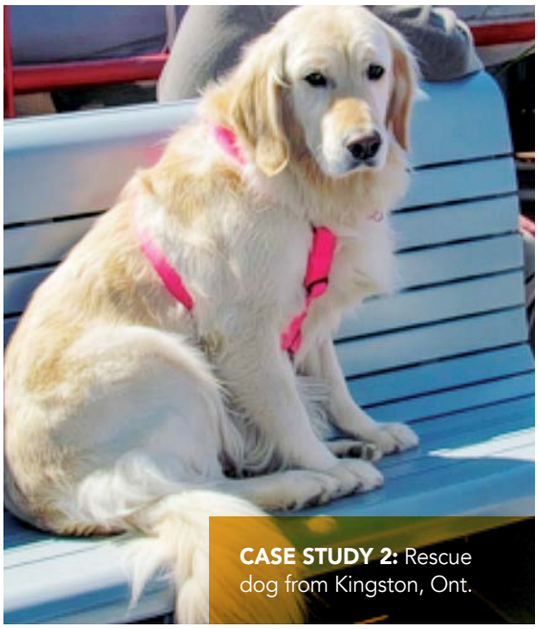
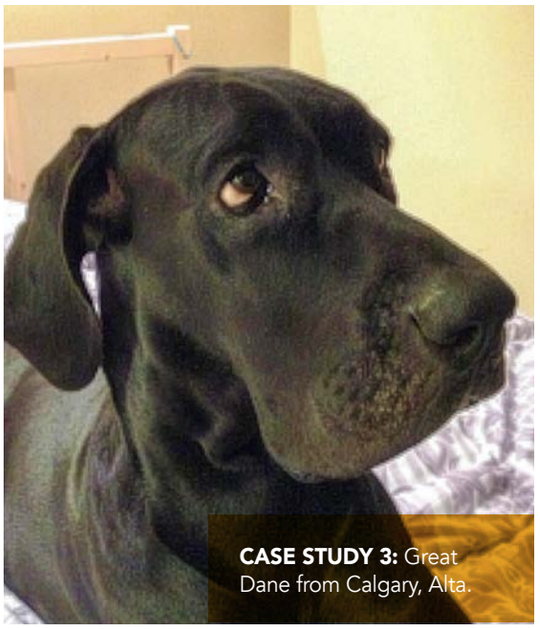
was poor: a 35 per cent survival probability at eight months. In a typical clinical setting, many pet owners would choose euthanasia at this stage due to the cost-to-prognosis ratio.

Multimodal treatment protocol
With their pet insured, the clients elected to pursue a comprehensive multimodal protocol aimed at local control and systemic prevention:

- Radiation therapy: Five weekly fractions of radiation at the previous removal site.
- Chemotherapy: Intravenous doxorubicin administered every three weeks for a five-week duration, followed by a transition to metronomic chemotherapy (daily oral Cyclophosphamide and, later, Chlorambucil after the development of sterile cystitis).



CASE STUDY 2: Rescue dog from Kingston, Ont.



CASE STUDY 3: Great Dane from Calgary, Alta.

Clinical takeaway: Insurance helps defy the odds
Instead of the predicted eight months, the patient lived for over four additional years. When a secondary, unrelated osteosarcoma appeared years later, the clients again were able to elect for a hemipelvectomy. While the patient eventually succumbed to a systemic infection post-surgery, the insurance policy successfully extended its life by years, not just months.

This case demonstrates that high-quality insurance enables the pursuit of aggressive oncology protocols that can significantly outperform average statistical outcomes.

3) Managing the 'perfect storm' of acute crises

Location: Calgary, Alta.
Condition: Sarcoma and gastric dilatation-volvulus (GDV)
Insurance paid: $13,102.96

Sequential critical events
This case involves a Great Dane in Calgary that faced a series of life-threatening events that would challenge any clinical team—and any client's bank account.

It began with a mass on the right hindlimb, diagnosed via cytology as a sarcoma (synovial cell or histiocytic). Following a limb amputation, the patient's recovery was complicated by sustained ventricular tachycardia (130 BPM) that proved unresponsive to initial IV hydromorphone and lidocaine boluses. Coupled with progressive anemia, the patient required a unit of whole blood and a lidocaine CRI to achieve stabilization before being discharged.

Emergency surgical intervention
Just 48 hours after being discharged from the amputation surgery, the patient returned with abdominal distention, poor pulses, and a critically elevated lactate level. The team provided a dose of hydromorphone, fluid resuscitation, and gastric trocharization to facilitate decompression.

A radiograph confirmed gastric dilatation-volvulus (GDV), a surgical emergency with a known high mortality rate, particularly in a patient already compromised by recent major surgery and cardiac arrhythmias. The elected to proceed with surgery.

Anesthesia was exceptionally high-risk due to a PCV of 28 per cent and hypoalbuminemia, requiring a fentanyl and lidocaine CRI for maintenance. During the emergency surgery, the surgeon performed a derotation of the stomach and a gastropexy while supporting the patient with a whole blood transfusion.

Clinical takeaway: Insurance protects amid worst-case scenarios
This "perfect storm"—an oncology diagnosis, a post-op cardiac crisis, and a gastric torsion within 30 days—is a scenario that often leads to euthanasia due to cumulative costs. However, for this family, whose total claim exceeded $13,000, their pet's insurance policy covered the needed diagnostic and treatment procedures.

For the veterinarian, having an insured client meant they could perform the necessary life-saving surgeries without the ethical distress of presenting a bill the client could not pay. Insurance enabled the veterinary team to practice emergency medicine despite multiple, back-to-back crises.

The crossroads

The benefits of high-quality pet insurance coverage are clear, and yet, pet insurance penetration in Canada remains below four per cent.[3] As the annual cost of owning a pet in Canada continues to climb, the industry stands at a crossroads. It can continue to watch 50 per cent of pet forgo care, or it can begin to integrate high-quality coverage into the very foundation of clinical recommendations.

When we advocate for broader payment options, we are advocating for patients to receive high-level medicine and best possible care. Let's ensure the next time patients walk into the clinic, the only decision a client has to make is which treatment they choose.

As SVP of Canada Market Growth for Trupanion, Eric Coulson is dedicated to helping Canadian veterinary teams bridge the gap between high-quality care and client affordability. By focusing on data-driven support and ease of use, Coulson is committed to helping clinics thrive while ensuring more pets get the treatment they need.

Disclaimer: Veterinary costs cited in this article are for illustrative purposes and may not reflect current industry pricing. Costs of care can vary significantly based on geographic region, facility type, and the specific medical needs of the individual patient.

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Why values-driven leadership is the core of a sustainable practice

By Chelsea McGivney, DVM, MBA

Strong practice management is often associated with scheduling efficiency, staffing ratios, financial dashboards, and carefully constructed standard operating procedures. These systems are essential. Yet practices that rely solely on operational mechanics often discover systems alone cannot carry a team through workforce shortages, emotionally complex cases, or periods of rapid change.

Before innovation can flourish and before systems can truly function at their highest level, a practice must establish a shared mission, clearly defined core values, and an environment of psychological safety. Together, these elements form the foundation upon which strong operations–and a strong culture–are built.

Culture as a clinical and operational variable

Veterinary medicine is both technically demanding and emotionally charged. Research consistently demonstrates high levels of occupational stress, burnout, and moral distress among veterinary professionals. Burnout–characterized by emotional exhaustion, depersonalization, and reduced sense of accomplishment–has been linked to decreased job satisfaction, higher turnover, and diminished quality of care.[1-3]

Operational inefficiencies and staffing constraints certainly contribute to this stress. However, culture often determines whether these pressures become manageable or destabilizing. Organizational culture shapes how teams communicate during conflict, how they respond to mistakes, and whether individuals feel supported when navigating ethically challenging situations.

In human health care and other high-reliability industries, strong, positive cultures are associated with better patient outcomes, higher engagement, and greater resilience during crisis.[4] While veterinary medicine has distinct characteristics, similar dynamics apply. Culture is not a soft, secondary concern; it is a clinical and operational variable.

Shared mission: Connecting daily tasks to meaning

A clearly articulated mission aligns daily work with a broader purpose. In veterinary settings, this may center on advancing patient welfare, strengthening the human-animal bond, serving a community, or raising standards of care.

When a mission is consistently reinforced, it becomes more than language on a website. It serves as a decision-making compass. It helps teams prioritize cases during a full schedule, navigate difficult financial conversations with clients, and maintain cohesion during operational strain.

Practices that successfully operationalize their mission often do so through repetition and modelling. Leaders reference it during team meetings. Onboarding materials connect job responsibilities to patient and client impact. Case discussions highlight how actions reflect core values. Over time, the mission becomes embedded in the team's shared identity. Without this clarity, daily pressures can fragment focus. Work becomes transactional rather than purposeful, and morale can erode.

Core values: Moving from aspirational to behavioural

Many practices identify values such as compassion, teamwork, and integrity as core to their operations. The challenge lies in translating these words into observable behaviours.

For example, compassion may mean actively listening during emotionally charged euthanasia conversations while also maintaining appropriate professional boundaries. Teamwork may involve cross-training to support colleagues during peak hours or constructively addressing workflow breakdowns without assigning blame. Integrity may require transparent communication about costs or clinical uncertainty.

"Culture often determines whether pressures become manageable or destabilizing. Organizational culture shapes how teams communicate during conflict, how they respond to mistakes, and whether individuals feel supported when navigating ethically challenging situations."

Defining values behaviourally reduces ambiguity. It clarifies expectations for both new graduates and seasoned clinicians. It also supports accountability. When performance feedback references agreed-upon behaviours rather than vague ideals, it becomes more constructive and less personal.

At the same time, values must remain balanced. A culture that emphasizes self-sacrifice without sustainability may unintentionally contribute to compassion fatigue. Effective leadership recognizes that excellence in veterinary medicine requires empathy and supports healthy boundaries.

Psychological safety: The catalyst for learning and innovation

Among the most studied components of high-performing teams is psychological safety. Harvard professor Amy Edmondson defines psychological safety as a shared belief that team members can speak up, ask questions, admit mistakes, and offer ideas without fear of humiliation or punishment.[5] Psychological safety does not eliminate accountability, nor does it remove performance standards. Instead, it enables learning.

In veterinary practice, psychological safety influences whether a technician feels comfortable questioning a medication dose, whether a new graduate seeks clarification during surgery, or whether a team member reports a near miss. These seemingly small moments accumulate into meaningful differences in patient safety and team cohesion.

Health-care research demonstrates that psychologically safe environments are associated with improved error reporting, stronger team learning behaviours, and better overall performance.[6] In fast-paced veterinary environments, particularly emergency and specialty settings, these dynamics are highly relevant.

Leadership behaviour plays a central role in shaping psychological safety. Leaders who openly acknowledge their own knowledge

Kristin Hernandez, DVM, and Deneige Arguin, RVT, observe a patient together during an in-home comfort care appointment.

Photo courtesy Josh Lewis

gaps model intellectual humility. Those who invite dissenting viewpoints signal that thoughtful disagreement is welcome. Perhaps most importantly, leaders who respond to concerns with curiosity rather than defensiveness reinforce trust. Over time, teams learn whether speaking up is safe. The cumulative pattern of response, not a single policy, defines culture.

Culture as a protective factor against burnout

Burnout in veterinary medicine is complex and multi-factorial. Workload intensity, client expectations, financial pressures, and ethical dilemmas all contribute.[1-3] Culture alone cannot resolve these systemic issues. However, supportive team environments can mitigate their impact.

Studies in health care suggest collegial support, participatory leadership, and meaningful recognition are associated with lower emotional exhaustion.[2,7] When individuals feel respected and heard, stressors are less likely to escalate into chronic disengagement. Within veterinary teams, this may look like structured debriefs after particularly difficult cases, peer mentorship for early-career clinicians, or clear protocols for managing abusive client behaviour. These interventions do not eliminate stress; they help distribute it.

Importantly, culture should never be used to obscure operational deficiencies. Chronic understaffing or inequitable compensation cannot be solved through positivity alone. Sustainable practices address both structural realities and relational dynamics.

Innovation emerges from cultural clarity

Veterinary medicine continues to evolve rapidly. Telemedicine integration, AI tools, changing client expectations, and workforce constraints all demand adaptability. Innovation, however, requires both risk and alignment. Teams are unlikely to propose new ideas if previous suggestions were dismissed or penalized. Conversely, innovation untethered from mission and values can create initiative fatigue and confusion.

Practices that successfully innovate tend to combine clear strategic direction with open dialogue. Leaders articulate why change is necessary, pilot new processes thoughtfully, measure outcomes transparently, openly welcome feedback, and remain willing to adjust course. In such environments, experimentation becomes a structured learning process rather than a destabilizing disruption.

The leadership imperative

Culture cannot be delegated solely to human resources policies or staff committees. It is shaped daily by leadership behaviour. Practice owners, medical directors, hospital administrators, and lead technicians influence culture through their response to errors, their communication style under stress, and their consistency in aligning actions with stated values. Even small inconsistencies between words and behaviour can erode trust.

Leadership development, therefore, becomes a critical component of practice management. Clinical expertise does not automatically translate into effective team leadership. Training in communication, conflict resolution, and feedback delivery strengthens a leader's capacity to steward culture intentionally. Culture-building, therefore, is not a one-time initiative–it is an ongoing practice.

It is also important to measure what matters. Although culture may feel intangible, it can be assessed. Engagement surveys, structured feedback sessions, turnover trends, and exit interviews offer valuable insight into team experience. Patient safety reporting patterns may also reflect levels of psychological safety. However, measurement without visible action can undermine trust. When teams provide feedback, they look for evidence leadership is listening. Even incremental change signals commitment.

A strategic advantage in a changing profession

As workforce shortages persist and burnout remains a pressing concern, culture may become one of the profession's most significant differentiators. Veterinary professionals increasingly seek workplaces that offer not only financial stability but also meaning, respect, and collaborative problem-solving.

Operational systems remain essential. Financial stewardship, efficient scheduling, and strong clinical protocols are foundational to viability. Yet without cultural alignment, even well-designed systems can falter. Strong practice management does not begin with software platforms or staffing grids. It begins with a shared mission, clearly defined values, and leaders who foster psychological safety. When culture is intentional, systems function more effectively, innovation becomes sustainable, and patient care reaches its full potential.

In a profession defined by both scientific rigour and human connection, culture is not an accessory to practice management—it is its foundation.

Chelsea McGivney, DVM, MBA, attended veterinary school at Colorado State University. She has practiced general medicine, emergency medicine, and in-home end-of-life veterinary care. Currently, Dr. McGivney is the executive director of operations of Caring Pathways, a multi-practice in-home end-of-life veterinary company focused on providing compassionate hospice and palliative care, as well as in-home euthanasia at life's end.

References

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How AI-Enabled Diagnostic Platforms are Buying Back Time for Veterinarians and Clinicians

As veterinary practices operate at full capacity, quick access to reliable in-clinic diagnostics has become invaluable—giving teams precious time back and easing workflow pressure.

From the moment a patient arrives, clinicians move through a sequence of assessment, investigation, and decision-making. The diagnostic stage is where uncertainty narrows, differentials are refined, and treatment plans take shape. Point-of-care tools can deliver results within hours, or even minutes, helping clinicians move to treatment plans with minimal waiting.

As a result, new diagnostic technologies are gaining traction, especially those integrated with artificial intelligence (AI) to support reliable and accurate decision-making in practice.

The Evolution of In-Clinic Hematology

Complete blood count (CBC) analysis remains one of the most important diagnostic tools available to veterinarians. Hematology results can provide valuable insights into a patient's health, helping clinicians detect infection, inflammation, anemia and other systemic conditions.

Historically, however, point-of-care hematology analyzers have not been prioritized in clinical practice. Concerns about accuracy and reliability led many veterinarians to continue relying heavily on external laboratory testing.

The shift we're seeing in veterinary diagnostic technology towards AI-enabled platforms makes a lot of sense when you consider the benefits it provides in terms of performance, usability and clinical insight over time.

Rather than replacing equipment when capabilities improve, many modern AI-enabled diagnostic systems are designed to evolve through software-driven updates and algorithm enhancements. This approach allows practices to benefit from ongoing innovation without disrupting day-to-day workflows.

Are AI-Enabled Platforms the Future of Diagnostics?

Dr. Rory Cowlam, Clinical Director at Pickles & Co in London and a member of the Veterinary Diagnostics Innovation Council, believes it is essential for practices to adopt this kind of technology to keep pace with demand and operate efficiently. At Pickles & Co, the team integrates AI where it can make a meaningful difference, and when it comes to point-of-care diagnostics, Dr. Cowlam says confidence in technology has been a key factor shaping its adoption.

"So, there's always been a slight mistrust in hematology analyzers at point of care, and what OptiCell™ addresses is that confidence for me," he remarks.

Beyond convenience, this model also reflects a broader shift in how diagnostic tools are designed: moving from static instruments to connected platforms that can continually evolve alongside clinical needs.

"I think the benefits of this type of technology are the fact that you don't have to replace it," says Dr. Cowlam. "We don't have time for people to be coming and installing new things every few years. We've got this piece of tech, it can be developed live, remotely, and it can continue to get better and better and better."

More Meaningful Client Conversations

Veterinary teams are also seeking diagnostic tools that integrate easily into everyday practice and support clearer communication with pet owners.

Dr. Michelle Larsen, Head of Medical Platforms, Clinical Studies, and Medical Education, Global Diagnostic Platforms at Zoetis, says improving workflow and reliability has been a central focus in the development of newer in-clinic technologies.[1]

"Feedback on Vetscan OptiCell has been overwhelmingly positive with respect to workflow and performance," she explains.

Results veterinarians can rely on when dealing with complex or critical cases is where clinicians are experiencing OptiCell's benefits. "The other area where we're really hearing positive feedback is the performance and reliability for those sick patients results," Dr. Larsen says. "Vetscan OptiCell has kind of created another level of reliability when it comes to providing reliable hematology results for sick patients that can easily be coupled with Vetscan Imagyst AI Blood Smear

> As veterinary diagnostics continue to evolve, AI-enabled platforms are helping practices move towards a model where in-clinic testing is not only faster and more accessible, but also continuously improving over time (and without disruption)!"

and Digital Cytology for the most comprehensive hematologic case support at the point of care."

Systems that are easier for the wider clinical team to operate help streamline workflows, freeing up time for veterinarians to focus on patient care and clinical decision making.

"It eliminates the major pain points of earlier in-clinic hematology: bulky, messy reagent packs, extensive training for pack changes and analyzer maintenance; and routine quality controls. Now, with minimal training, anyone can use the equipment."

When clinicians can trust the results generated in-clinic, it reduces time spent troubleshooting unexpected findings or repeating tests, freeing up valuable time for patient care.

Supporting Meaningful Conversations

Veterinary Cancer Specialist Dr. Sue Ettinger says in-clinic CBC analysis plays an important role in both patient monitoring and client communication at Guardian Veterinary Specialists in Brewster, New York. "I love OptiCell," she says. "It's effective, and it's cost-efficient for my clients."

As veterinary diagnostics continue to evolve, AI-enabled platforms are helping practices move towards a model where in-clinic testing is not only faster and more accessible, but also continuously improving over time (and without disruption)!

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Michelle Larsen
Head of Diagnostic Medical Platforms & Education at Zoetis

Rory Cowlam
Clinical Director at Pickles & Co

Sue Ettinger
Veterinary Cancer Specialist at Guardian Veterinary Specialists

Reviewing best treatment options for periodontal disease

By John R. Lewis, VMD, FAVD, DAVDC

Life is straightforward, albeit boring, when medical decision-making is "cut and dried." Healthy teeth? Clean and polish. A severely diseased tooth? Extract. However, as in every aspect of life, there are shades of grey when making decisions in treating periodontal disease.

Making the diagnosis of periodontal disease is not typically a challenge. The challenge is quantifying each tooth's disease severity and understanding the options for treating each of them individually. In dogs and cats, periodontal disease is typically a slowly progressive condition that may present at varying stages of severity.[1]

When I teach students, I tell them there are 42 patients in a dog's mouth and 30 in a cat's mouth. Each "patient" requires an assessment and a plan, and documented justification for the recommended plan.

Types of periodontal bone loss

Periodontal bone loss can be divided into two categories: horizontal and vertical. Horizontal bone loss refers to alveolar bone loss that occurs along the alveolar margin of the mandible or maxilla, resulting in root exposure and furcation exposure of multirooted teeth (Figure 1). Vertical bone loss is alveolar bone loss that occurs along the long axis of a root (Figure 2). These two processes may occur simultaneously around the alveolar bone of the same tooth, or even the same root. Of the two processes, vertical bone loss is easier to combat than horizontal bone loss, since there are often three walls of bone surrounding the vertical defect that can retain osteoconductive or osteoinductive substances.

When to recommend advanced therapy

Has the periodontal disease progressed to the point where endodontic disease is now also likely? If so, the "double whammy" of periodontal disease and endodontic disease makes extraction the only practical choice.

Before deciding whether to pursue periodontal therapy for borderline teeth, it is important to have a heart-to-heart conversation with the pet owner. Is the affected tooth functionally important based on the patient's role in life (police dog or couch potato?) Is the owner concerned about tooth loss? Is the patient healthy enough to undergo future anesthetic follow-up and treatment, since advanced periodontal disease often requires multiple treatments? Is the owner able and willing to perform daily home care? If not, even the best periodontal surgeries may fail over time due to the progression of periodontal disease. Another factor to consider is if you have the equipment, materials, and experience to provide advanced periodontal therapy.

Tools of the trade

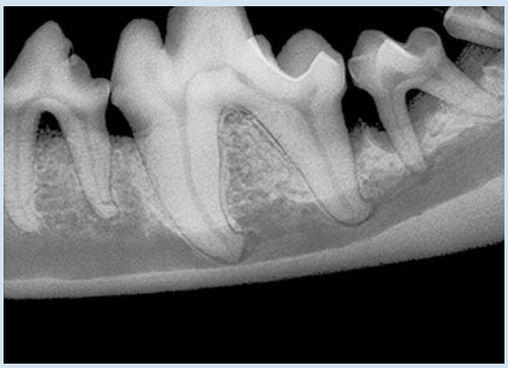
In next month's column, I will discuss the growing variety of periodontal products/devices that can be used in periodontal pockets. However, it is important to know what you put into a periodontal defect is less important than what you remove from the pocket. Prior to placement of any product, it is very important to perform a thorough ultrasonic scaling with an ultrasonic tip designed for subgingival scaling. Next, hand curettes should be used to perform root planing to remove remaining calculus deposits from the root surface and to make it as smooth as possible. Next, the hand curette is used to perform subgingival curettage, where the cutting surface of the curette is used on the soft tissue of the walls of the pocket to remove diseased granulation tissue, resulting in freshly cut surface of gingival connective tissue to reattach to the root surface. The site is then irrigated to flush debris.

Such techniques are not for every patient or every pet owner, but good outcomes can be seen, especially in cases of vertical bone loss in the absence of concurrent endodontic disease and tooth mobility. Consider attending a wet lab on the techniques of advanced periodontal therapy before performing these procedures.

Figure 1

Horizontal bone loss of the right mandible of a dog, extending from the mandibular first premolar (tooth 405) to the fourth premolar (tooth 408). Teeth 406, 407, and 408 have stage 3 furcation exposure.

Figure 2



A combination of horizontal and vertical bone loss of the left mandible of a dog. The teeth show varying degrees of horizontal bone loss, but vertical bone loss is also seen along the roots of teeth 309, 310, and 311. In this case, extraction of 308, 310, and 311 would be reasonable, with a focus on saving the more functionally important tooth 309 via open root planing and guided bone regeneration.

Photos courtesy Dr. John R. Lewis

John R. Lewis, VMD, DAVDC, Fellow-AVDC OMFS, practices at Veterinary Dentistry Specialists and teaches at Silo Academy Education Center, both in Chadds Ford, Pa.

Reference

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The importance of diet in derm health

By Jason Gagné, DVM, DACVIM (Nutrition)

Photo courtesy Purina Institute

Every veterinary visit should include a complete diet history to help catch preventable dermatoses and guide diagnostic diet choice.

Skin and coat quality are among the most visible reflections of a pet's overall health.[1] Pets may present for dull coat, scaling, increased shedding—but those observations often indicate deeper issues in nutrition, barrier function, or early allergic skin disease. A thorough dietary history, coupled with a standard dermatologic exam, can prevent missed diagnoses and place nutrition where it belongs: as a routine component of dermatology care for both healthy and allergic pets.

Taking a complete history, including a diet history at every visit—well and sick alike—helps clinicians identify problems early and tailor the plan.

The nutritional foundation of healthy skin

Fatty acids: Building the barrier

Essential fatty acids (EFAs) are cornerstone nutrients for cutaneous health. Linoleic acid (LA; omega-6) supports ceramide synthesis in the stratum corneum; adequate intake improves skin hydration and coat gloss and reduces transepidermal water loss (TEWL)—a measurable marker of skin barrier competence in healthy dogs.[2]

Long-chain omega-3 polyunsaturated fatty acids (PUFAs) (eicosapentaenoic acid [EPA], docosahexaenoic acid [DHA]), while not essential for the adult, modulate inflammatory pathways and stabilize membranes, contributing to skin homeostasis in healthy pets and serving as a valuable adjunct when inflammation is present. Because dogs—and especially cats— inefficiently convert precursors, such as alpha-linolenic acid (ALA) preformed EPA/DHA sources matter in practice.[3]

While true EFA deficiency is uncommon in complete and balanced diets, it can occur with unbalanced or unconventional feeding and conditions leading to malabsorption. Clinically, pets may present with dry, flaky skin, dull coat, seborrhea, alopecia, or increased TEWL; targeted dietary correction restores barrier function and coat quality.[4,5]

Protein and amino acids: Architecture for hair and skin

Hair is composed of approximately 95 per cent protein; meeting amino acid needs is necessary for normal keratinization, pigmentation, and follicular cycling.[1] Methionine and cysteine (sulfur amino acids) are heavily incorporated into hair; phenylalanine and tyrosine drive melanin synthesis.[4] Protein shortfalls or amino acid imbalances can manifest as a brittle coat, altered color, or slowed growth.[1] Most complete and balanced commercial diets provide adequate protein for healthy skin and hair, but a diet history is crucial to assess intake and catch at-risk pets.

Zinc, vitamin A, vitamin E: Micronutrients with macro effects

Zinc is critical for keratinocyte turnover, fatty acid metabolism, immune function, and wound healing; ~20 per cent of total body zinc resides in skin, especially in keratinized tissues, including nose, paw pads, and tongue.[6] Deficiency can produce parakeratosis, scaling, and a lackluster coat. Certain northern breeds, including Siberian huskies, Alaskan malamutes, and Samoyeds, are predisposed to zinc-responsive dermatosis[4]—making zinc bioavailability an important selection criterion when choosing diets or supplements.[7] More bioavailable forms of zinc include zinc sulfate, gluconate, and methionine.

Vitamin A regulates follicular turnover and epithelial differentiation;[8] both deficiency and chronic over-supplementation are dermatologically detrimental (*e.g.* follicular hyperkeratosis with deficiency; dry, flaky skin and alopecia with excess).[9]

Vitamin E plays vital roles in the skin and immune system. It is essential to protect PUFA-rich membranes, and it may need to increase when total dietary PUFA rises (*e.g.* fish oil–enriched diets or high-fat diets).[10]

Clinical takeaway: For well pets, most "coat problems" resolve with complete and

balanced feeding and consistent owner adherence; supplementation is case-by-case and should be evidence-based.

Nutrition as a therapeutic adjunct in atopic dermatitis

Atopic dermatitis (AD) is a genetically influenced, inflammatory, and pruritic skin disease triggered by environmental allergens.[11] Nutrition can help modify disease expression by strengthening the skin barrier, tempering inflammation, and supporting immune balance. Studies in dogs demonstrate that EFA-enriched diets, and in some cases, diets fortified with antioxidants/polyphenols, can reduce pruritus scores and lesion indices and decrease reliance on concurrent antipruritics, albeit with variable effect sizes across trials.[12, 13]

Palmitoylethanolamide (PEA), an endocannabinoid-like lipid, has been shown to reduce pruritus and improve remission maintenance in both dogs and cats when used as a component of multimodal therapy.[14,15]

The evidence base for atopy supported by nutrition is varied due to a number of assessment methods, including CADESI, CADLI, SCORFAD, and PVAS, that score skin lesions and pruritus, but a pattern emerges: EFA-enriched nutrition and barrier-supportive formulations can provide clinically meaningful additive benefits over time. For client communication, frame nutrition as a "stabilizer" that helps reduce flare intensity and extend comfortable intervals—not a cure.

Cutaneous adverse food reaction (CAFR): Diet, friend, or foe?

Cutaneous adverse food reactions can be indistinguishable clinically from atopy and frequently coexist with it.[16] Dogs and cats with CAFR may present with nonseasonal pruritus, recurrent otitis, secondary infections, and GI signs (vomiting, diarrhea, increased bowel movements, gas, borborygmus).[17] Because there is substantial overlap with atopy, diagnosis depends on a strict elimination diet trial followed by a dietary rechallenge—serologic, saliva, hair, intradermal, or patch tests are not reliable for confirming food allergy.[18]

Communication with owners: The determining factor

Across nutrition and dermatology references, the strongest predictor of success is not the protein source or degree of hydrolysis—it is owner understanding and adherence. Diet trials commonly fail due to small, repeated "leaks:" neighbours giving treats, flavoured preventatives or medications, pill hiding in cheese, multipet food sharing, dropping food, or scavenging. Bringing these pitfalls into the open normalizes the challenge and prevents unintentional noncompliance

Advances in dermatologic health

Persistent skin issues in companion animals go beyond surface-level concerns. They arise from complex interactions among the skin barrier, immune system, and cutaneous microbiome. Research shows when the skin's protective barrier is disrupted, sensory signals linked to discomfort intensify, fueling an itch–scratch cycle that further weakens skin integrity. Subclinical inflammation and shifts in barrier lipid composition are now recognized as early contributors, often appearing before visible lesions develop. These findings highlight the importance of proactive skin support strategies that strengthen barrier resilience and help calm underlying inflammation, rather than relying solely on symptomatic relief once clinical signs become more pronounced.

Conclusion

Nutrition is inseparable from dermatologic health. In healthy pets, truly complete and balanced diets provide the substrates—EFAs, amino acids, zinc, vitamins A and E—that sustain barrier function and coat vitality. In atopic pets, nutrition adds measurable value by supporting the epidermal barrier and tempering inflammation as part of a multimodal plan. In food allergy, diet serves as both a diagnostic tool and a long-term nutritional management tool, provided trials are conducted strictly and confirmed by rechallenge.

With clear, empathetic communication and a structured approach, veterinarians can turn complex skin cases into manageable, evidence-based successes that improve comfort and strengthen the veterinarian–client relationship.

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References

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Veterinary vaccines unpacked: *Research, regulations, and guidelines*

Human vs. veterinary clinical trials and phases of research for regulatory approval

By Sheila Keay, DVM, MBA, MPH, PhD

Photo © MachineHeadz / iStock / Getty Images Plus

Although much is still unknown, huge gains have been made in understanding of immunity, genomics, and systems biology that have led to the development of new vaccine technologies (*i.e.* new platforms) better positioned to address the need for expedited response to changing and emerging pathogens.[1-3]

In human vaccine research, researchers' objectives differ by research phase (Figure 1).[4–7]

Phase 0 is a "proof-of-concept" stage for candidate vaccines. In Phase I and II clinical trials, researchers identify correlates of protection (CoPs) to measure vaccine efficacy, assess safety, and determine the optimal dose and frequency of administration. CoPs are often validated using Phase IIb challenge trials in animal models (optimally, same-species challenge models).[8–10] Historically, serologic assays are standard CoPs, but understanding of immune responses is incomplete; therefore, multiple outcomes must be assessed to accurately predict vaccine performance.[11,12] Use of live vaccines and newer vaccine technologies means more technically complex cell-mediated CoPs and also direct measures of virus infection are needed to assess protection.[13–16]

Although rare in human medicine,[17,18] same-species challenge trials are frequently reported as a study design and are often pivotal for licensing of veterinary vaccines. Phase III clinical trials are larger, involve natural exposure of the target population, and provide evidence of efficacy and safety. Manufacturers of human and veterinary vaccines must demonstrate efficacy, safety, purity, and potency to obtain licensing and approval for commercial use. Human vaccine manufacturers must additionally conduct Phase IV post-marketing clinical trials to demonstrate that vaccines perform as expected in 'real life' populations (*i.e.* vaccine effectiveness).

Autogenous vaccines are tested for safety and purity but not for efficacy. They are a specific class of conditionally approved veterinary vaccines commonly used in livestock species to protect against viral diseases. Their use is restricted to populations under direct veterinary oversight, and they fill voids where otherwise no commercial vaccine is available or sufficient.[19,20]

In comparison to human vaccines, approval of veterinary vaccines is expedited because: 1) fewer restrictions govern the conduct of same-species challenge trials;[18,20,21] 2) veterinary vaccines are commonly approved based on Phase IIb trials; 3) post-marketing evaluation of vaccine performance (*i.e.* Phase IV trials) is not required,[21] and 4) a regulatory framework exists for restricted use of non-licensed autogenous vaccines.[20]

To vaccinate or not to vaccinate?

Is there a difference between guidelines based on science and evidence-based guidelines? There is, and it is nuanced and important.

The *Oxford Dictionary* defines synthesis as the act of bringing together parts or elements to form a complex whole. "Based on science" is a generic term often used without qualifying the methods used for critical appraisal and synthesis of the scientific evidence upon which recommendations are made. However, within the knowledge translation community of practice, the term "evidence-based" specifically implies application of globally established and standardized methods for synthesizing relevant information to produce recommendations that are inclusive, rigorous, transparent, and accessible.[23,24]

Evidence-based methods for systematic review and meta-analysis were first developed to address contradictory opinions on human medical treatments.[25] Methods have been stress-tested and evolved over decades to become standard practice for informing policy and guideline development in human medicine and, more recently, in other disciplines.[26]

Systematic review is a process to inventory, characterize, and critically appraise the body of available evidence, to identify gaps, trends, or patterns in the evidence, and then finally to pull it all together to help decision-makers understand the overall quality of available evidence and level of certainty of how a treatment is expected to perform when applied in their clinical situation.[27]

Getting our arms around vaccine research

It is challenging to make sense of veterinary vaccine research when developing vaccination guidelines because:

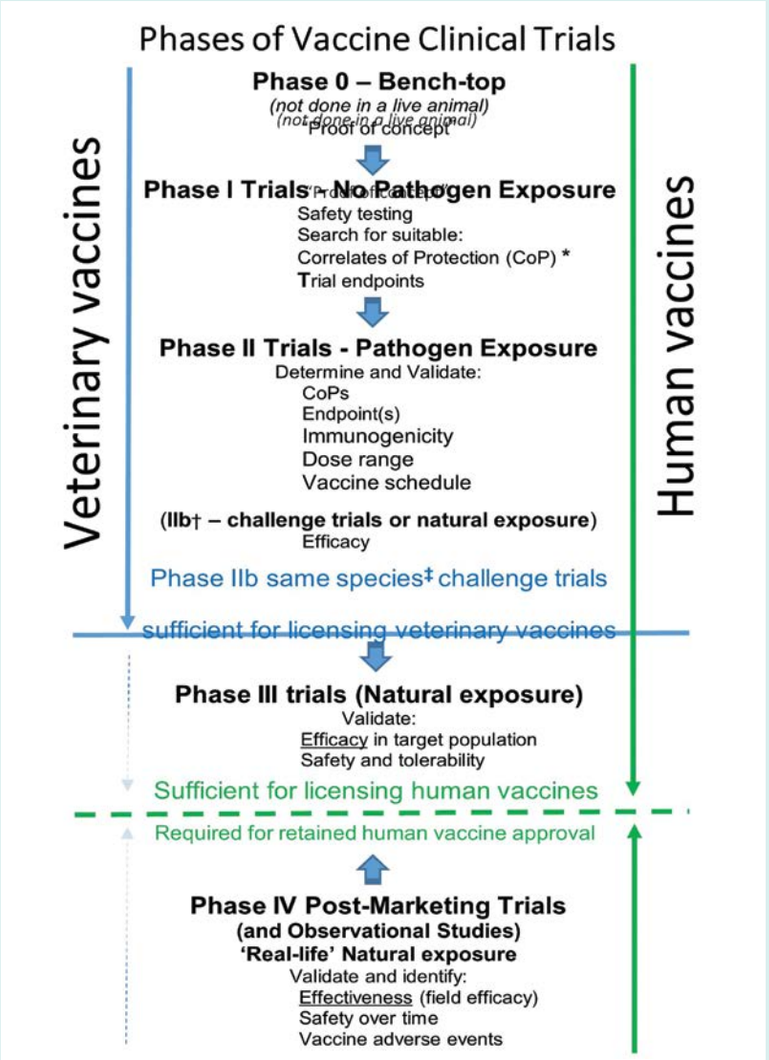
- There is an abundance, or more often, a dearth of available and relevant research (Figure 2)

- Vaccine protection is a broad and often poorly defined term[28–30]
- New and sophisticated vaccine platform technologies have entered the commercial marketplace[2,3] (Figure 3)
- No single outcome can convey protection against infection or disease[31]
- Researchers investigate vaccine performance differently depending on the phase of research and purpose of each study (Figure 4)[4,21,32]
- Researchers are not incentivized to conduct post-marketing vaccine effectiveness studies and therefore too few are available.[4,21]
- Too few systematic reviews of vaccine performance are available

In an ideal world, veterinary vaccination guidelines are evidence-based, regionally specific, and include the full complement of vaccine programs. However, few systematic reviews are available, so pragmatically, vaccine guideline issuers seek other processes for reaching consensus. The authors of the *2024 WSAVA Dog and Cat Vaccination Guidelines* succinctly described this situation as follows:[35]

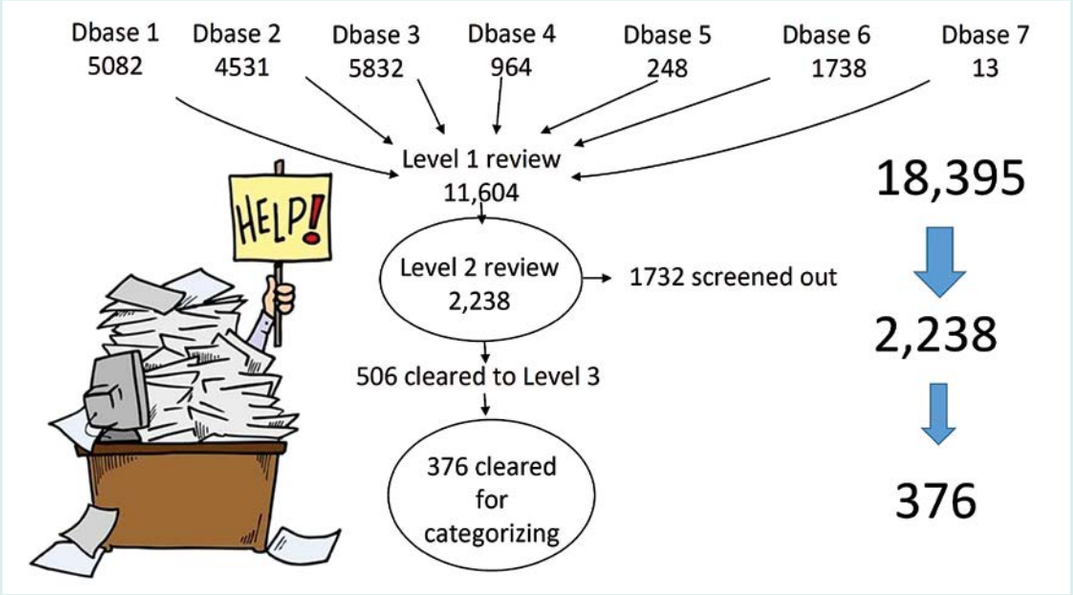
"These guidelines are based on published, peer-reviewed evidence wherever possible, but also, unavoidably, on unpublished or non-peer-reviewed scientific evidence and on expert opinions. Given the remarkable breadth of material to be covered in a single document, a narrative review format has once again been adopted as the only one suitable to the task.[36] The same format has been chosen by all other international companion animal vaccination guidelines authoring teams.[37–39] Use of a systematic review format or a formal, structured approach to reach consensus recommendations based on the Delphi process was considered by the VGG (Vaccination Guidelines Group) when planning this update.[40] These approaches were quickly deemed inapplicable given the breadth of material intended to be covered in a single document and the size of the authoring team. Nevertheless, these recommendations are based on the strongest scientific evidence that was found."

Figure 1



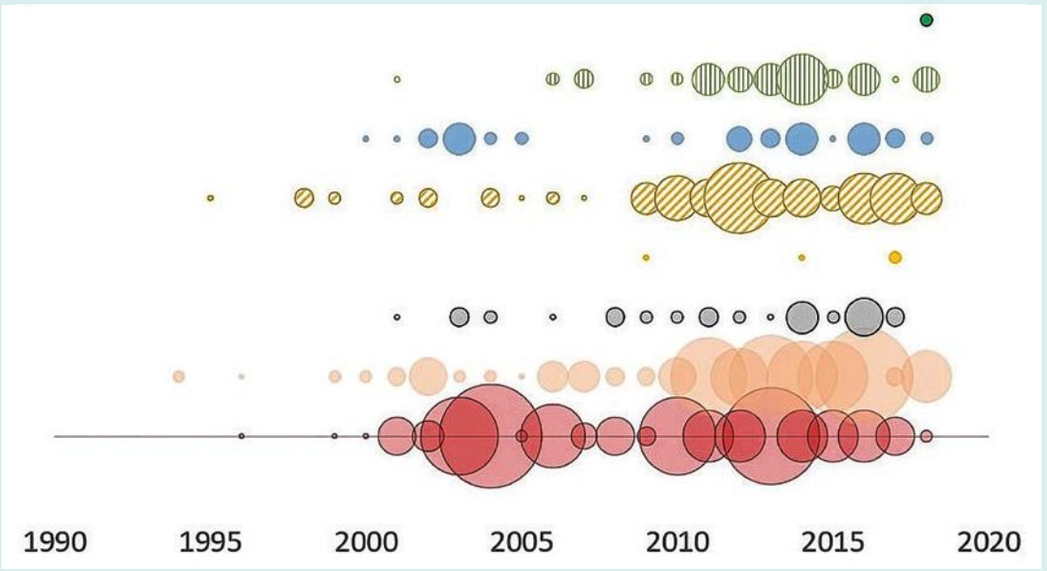
Phases of vaccine clinical trials and their phase-specific endpoints within the process of licensing commercial vaccines for human versus veterinary markets[22]

Figure 2



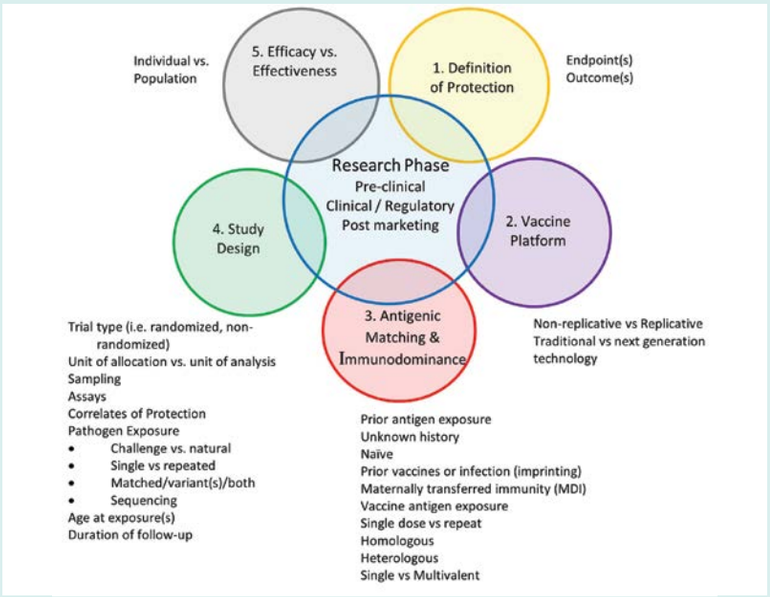
An evidence-based method called a scoping review was used to search, screen for relevance, and characterize the available science on a given medical intervention. The numbers are based on real data from a scoping review that identified and characterized all influenza vaccine studies conducted from 1990 to 2018 in swine species.[33] The online and manual search of six bibliographic databases and conference proceedings netted over 18,000 publications. After screening out duplicates and other 'noise' we were left with 376 relevant studies.

Figure 3



This is the dispersion of the 379 studies identified in Figure 1.[33] Each row of bubbles represents a different vaccine type and platform. Bubbles with hashed lines are commercial vaccine products; solid-shaded bubbles are experimental vaccines. The size of the bubble indicates the number of studies conducted during the corresponding year (x-axis). There was a big increase in the number of studies following the 2009 influenza pandemic. From Keay et al 2020.[33]

Figure 3



Essential research elements considered for each phase of vaccine research. Researchers independently make a myriad of decisions when designing their studies to align selected outcomes with the research phase and stated objectives. This independence contributes to methodologic heterogeneity between studies and complicates efforts to synthesize research. Modified from Keay 2022.[34]

So where does this leave us?

The good news is that awareness and support of evidence-based methods is growing. Systematic reviews are useful not only to inform practice guidelines,[41] but just as importantly to highlight where greater harmonization of the elements of vaccine research is warranted to "allow more reliable comparisons between studies and provide clearer guidance for the development of effective and clinically viable vaccines."[42]

Recently, the European Cooperation in Science and Technology (COST) funded the European Network for Optimization of Veterinary Antimicrobial Treatment (ENOVAT) to develop the first evidence-based antimicrobial use guidelines for the international veterinary community (anticipated to include six treatment guidelines applicable across five species groups).[43–46] The project involved more than 330 persons from 51 countries and was a massive investment to build crucial capacity in the field of guidelines methodology in veterinary medicine, "a field currently dominated by consensus statements."[47] Specifically, a large group of veterinary professionals were trained in conducting systematic and scoping reviews; both are essential components of evidence-based guidelines.[47]

Further, ENOVAT built expertise in the GRADE[48] methodology for assessing the quality and strength of the body of evidence, which is largely unknown in veterinary medicine but has been adopted by many global guideline issuers, including the World Health Organization and the European Society for Clinical Microbiology and Infectious Diseases (ESCMID).

Taken together, ENOVAT's success "helps to ensure capacity for future development of evidence-based guidelines in veterinary medicine, and it constitutes a platform for education of additional experts within this area."[47] The importance of ENOVAT's contribution to veterinary medicine cannot be understated. They provided a template and built the infrastructure needed for future collaborative development of evidence-based guidelines in veterinary medicine.

Sheila Keay, DVM, MBA, MPH, PhD, graduated from the Ontario Veterinary College (OVC), Ontario, Canada, in 1996 and has lived, worked, and studied across four countries, on three continents, and in various capacities. Dr. Keay returned to OVC to complete her PhD in Epidemiology in 2022, with a focus on knowledge translation and influenza A virus vaccine research in swine. Keay currently works for the Canadian Food Inspection Agency and is the president (2025-2027) of the Evidence-Based Veterinary Medicine Association (EBVMA; https://www.ebvma.org/).

References

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Stop the SCRATCH

Current treatment options and recommendations for pruritus management in dogs and cats.

By Erica Tramuta-Drobnis, VMD, MPH, CPH

Photos courtesy Dr. Erica Tramuta-Drobnis

A Pitbull missing for three days was found with porcupine quills and secondary infection. It was pruritic even when the quills were removed. Oral and topical management were used to treat the patient.

So, in 1,700 words or fewer, summarizing the management of pruritus in dogs and cats is a challenge. A lot goes into the neurobiology, immunology, and overall pathophysiology of the various etiologies of itching in dogs and cats. Various conditions trigger pruritus, ranging from primary skin conditions to immune-mediated conditions to systemic diseases. Treating the underlying condition, if feasible, is optimal, but not always realistic. Managing clinical signs, improving health outcomes (pet and pet-parent quality of life), and minimizing negative impacts on the human-animal bond (HAB) drive therapy recommendations, options, and success rates.

Pruritus in the dog and cat

Investigating and, when possible, determining the underlying cause, treating signs, and improving health remain paramount in the management of feline and canine dermatological issues that manifest as pruritus.

Many skin conditions in animals present with pruritus as a primary complaint. The scratching or licking keeps owners up all night; the constant headshaking or ear scratching brings owners to the ER at 2:00 in the morning. Pruritus can be debilitating, leading to self-trauma, behavioural abnormalities, excessive grooming, secondary infections, and more; so, managing that itch is of high priority.

We define pruritus as "an unpleasant sensation within the skin that provokes the desire to scratch."[1–5] However, it is much more than that when we consider the pathophysiology. Itchiness can be painful, unpleasant, irritating, and lead to agitation, anxiety, and distress.[2–4,6]

Pathophysiology of itch

Entire articles are devoted simply to the pathophysiology of pruritus. However, itch can have a similar detrimental effect on quality of life as chronic pain. The pathway of itch is complicated; from the unpleasant sensation (regardless of the underlying etiology) to the ensuing communication among the immune system, skin, nervous system, and brain, we can see why we see such a wide array of responses from our patients.

Itch is complex and involves the thalamus, spinal cord, interleukins, other inflammatory mediators, and C-fibres (which also play a role in the pain pathway). Thus, we can see how complicated this can be and why medical management of pruritus is not as simple as a single medication that will stop the itch for all pets, regardless of etiology. It just isn't that simple.[3–5,7,8]

Differentials

Causes of itchiness are varied and can manifest as a primary problem or as secondary infections in the skin (*e.g.* Cushing's disease, diabetes), neoplastic skin disease, or infectious causes, including ectoparasites, ringworm, or bacterial or *Malassezia* dermatitis. Finally, we can see pruritus secondary to a bite hypersensitivity, such as flea allergy dermatitis, food allergy, atopy, or contact allergies.[1,2,9]

Diagnostics

A deep dive on diagnostics is a topic for another day. However, remember to perform a minimum database, including skin scraping, impression smears, dermatophytosis testing, and/or ear cytology. Consider a food elimination trial, as we are appreciating a greater number of animals have food sensitivities than previously realized, manifesting as primary skin or GI signs, or both.[10–13] Remember, with food elimination trials, advise clients this includes: no outside foods, no treats, no people food, and ensure during the trial, no oral flea/tick/heartworm preventatives, chewable supplements, chewable NSAIDs, or even chewable anti-pruritic meds are administered. Additional diagnostics, such as a skin biopsy or culture, may be warranted later.

Examples of topical therapies, including medicated and soothing mousses, sprays, and wipes.

While a discussion of skin diagnostics is beyond the scope of this article, we should ensure we are not simply throwing medications at a clinical sign; instead, we seek to treat or cure a condition (when feasible). This, therefore, improves our ability to minimize signs, improve quality of life, and, in combination with proper client education (atopy/allergic diseases usually aren't cured but are managed), improve outcomes.

Scratch the itch: Eight therapy options

When it comes to treating pruritus, identifying the underlying condition and treating it, systemic endocrine disease, infection, be it primary or secondary (*e.g.*, *Malassezzia* or bacterial), food allergy, atopic dermatitis, or immune-mediated, improves our success in managing the itch. However, in many conditions, we cannot fully cure the pet (*e.g.* atopy). Ensure owners understand this, as this will ultimately improve expectations and guide treatment goals for the individual client, patient, and you.

Varying evidence exists for the effectiveness of various therapies (from systematic reviews to randomized controlled trials to clinical experience alone. Utilize your knowledge, the 2023 *AAHA Management of Allergic Skin Diseases in Dogs and Cats Guidelines,*[9] and additional references for evidence synthesis to stay informed about the most up-to-date treatment options and recommendations.

Treatments may include:[3,6,14–26]

1)**Topical shampoos and mousses** (with variable ingredients); some simply act by "calming/soothing" the skin while others are medicated (*e.g.* anti-fungals, antibacterials) to manage secondary infections.[1,27–29] However, use proper antimicrobial stewardship and think twice before reaching for antimicrobial-based shampoos without evidence of infection, as you could increase the risk of antimicrobial resistance (AMR) developing in that patient. Note: topicals should be used as first-line over oral agents when feasible, especially when considering antimicrobials, to minimize AMR and limit side effects on the microbiome.[30–36]

2) **Steroids** (**topical, oral, injectable**) with varying degrees of side effects (of which owners must be properly educated and informed, and consent should be obtained before prescribing).

3) **For on-label use in dogs**, we have **modulators of the immune system** that work on cytokines and intracellular signalling pathways, *e.g.* ilunocitinib, oclacitinib, and okivetmab.[9,19–21,26,37–41]

Why no anti-itch meds, like ilunocitinib, oclacitinib, or lokivetmab in cats? The expression of cytokines in feline allergic dermatitis is not as clear-cut as it is in dogs. Dogs express certain cytokines in allergic skin disease; hence, our ability to target these drugs. However, some research suggests cats fail to show a similar expression pattern, or in sufficient quantities, to warrant targeting these cytokines and permit a sufficient reduction in pruritus to support on-label use of these products in cats. Additional work in feline dermatological conditions and medication options is warranted.[26,42] That being said, however, oclacitinib has been used off-label with informed client consent in feline patients that fail other therapies. Research suggests efficacy and overall safety, but additional studies are needed.[21]

4) **Immunosuppressive therapy,** *e.g.* modified cyclosporine,[43] which is FDA-approved in dogs for atopic dermatitis and in cats for feline allergic dermatitis (aka feline atopic skin syndrome). While steroids and immune modulators can be effective within hours to days, this drug takes four to six weeks until therapeutic effects may be realized. Thus, for acute disease, it is not what we reach for; instead, it is used for long-term management and to minimize the recurrence of pruritus and other clinical signs.

Numerous extra-label uses for additional skin, and many other conditions are recognized. Ensure you are using a bioavailable formulation, as several human options are not. Thus, recommendations for a modified (microemulsion) formulation are key to improving success rates.[15]

5) **Allergen immunotherapy**: The allergy shot or oral option.[9,26,44]

6) **Food elimination diet trials** (novel protein or hydrolyzed protein diets): studies demonstrate the prevalence of adverse food reactions manifesting with cutaneous signs, *e.g.* pruritus (licking, scratching, overgrooming, alopecia) suggest it is warranted, if feasible with your pet and pet parent (financially, family co-operation, strict adherence is feasible, commitment).[11,12,45]

7) Thinking along the lines of neuropathic pain and the close tie that pain and itch have neurologically, the use of **gabapentin or its precursor, pregabalin**, may have some benefit in managing pruritus,[46] though additional research is needed. Perhaps it is not working on the itch itself, but it does have anti-anxiety properties, since being itchy can increase arousal and be disturbing to anyone. Have you ever had pruritus? It can be painful. Thus, it is not unreasonable to treat the pain component of itch.[3]

8) **Antihistamines:** What about antihistamines, *e.g.* cetirizine? Most studies suggest antihistamines provide minimal benefit in most dogs and cats.

Most specialists suggest the benefit as an anti-pruritic in animals is minimal. Thus, they are not generally recommended. That said, is it wrong for an owner, given the literature and the risks vs. benefits, to give it a try? That is a conversation for each vet with each individual pet-parent.[1,3,9]

Each drug in our arsenal has pluses and minuses, variable time to onset, potential age restrictions, and contraindications based on possible concurrent or historical diseases. All have side effects and thus, ensuring you read up on each drug and understand the mechanism of action, risks, benefits, and properly educate your client, all can be beneficial in your anti-itch arsenal.[9]

Treatment considerations

When considering therapy, various factors need to be considered:[1,9]

1) Primary disease: Is it treatable or just manageable?

2) Secondary disease, e.g. infection: Have we successfully managed it, or is more needed?

3) Medication selection: Varies with client and patient factors, including cost, ease of administration, frequency of administration, risk of side effects, including immunosuppression, administration concerns, and impacts to the pet's vaccination schedule (*e.g.* ilunocitinib, which carries a black box warning regarding vaccinations).[19,47]

4) The client and family: Their wants, needs, abilities, and end goals

5) Finances

6) Underlying medical conditions: Does the cat you are about to put on steroids have a heart murmur? Is there evidence of hypertrophic cardiomyopathy? Did you warn your pet parent if underlying heart disease exists, use of a long-acting injectable steroid, for example, could increase the risk of congestive heart failure?[48,49] Another consideration is a dog with severe DJD that takes NSAIDs regularly; steroids aren't going to be an option, and other choices need to be reviewed and discussed. What about that untreated canine Cushing's patient? We need to take underlying conditions into account, not just in treatment selection, but also in prognosis and in overall ability to improve health vs. provide a cure.

How do they work?

Key anti-itch drugs and how they work:[9,11-14]

1) Oclacitinib is a JAK-STAT inhibitor that works by preventing proinflammatory and itch-inducing cytokines from signalling.
2) Ilunocitinib is a relatively new JAK inhibitor preventing itch and inflammatory cytokine expression.
3) Lokivetmab is a canine monoclonal antibody that blocks the actions of interleukin-31 (IL-31) known for its role in stimulating pruritus in the dog.
4) Cyclosporine modulates T-cell function, acting as a calcineurin inhibitor

Steroids impact proinflammatory cytokine gene expression.

To scratch or not to scratch

Pruritus management is just that, general management. Ensuring clients understand most pruritus-causing conditions are manageable, not necessarily curable, with a few exceptions, is paramount. Thankfully, numerous options exist for managing our itchy pets. Selecting the right medication is sometimes a bit of a guesswork and trial-and-error process.

Ensure owners are well-informed about any side effects, benefits, restrictions (*e.g.* when doing a food trial), and expectations (cure vs. management). Keep up with the research and evidence-based recommendations for therapies. Ensure you utilize proper antimicrobial stewardship, try topical therapy when feasible first before reaching for orals. Discuss options with pet parents for managing pruritus; cost, frequency of administration, and other factors that may influence an owner's selection of therapy and adherence to our recommendations to ensure a successful health outcome and a much more comfortable pet.

Erica Tramuta-Drobnis, VMD, MPH, CPH, is the CEO and founder of ELTD One Health Consulting, LLC. Dr. Tramuta-Drobnis works as a public health professional, emergency veterinarian, freelance writer, consultant, and researcher. She is passionate about One Health issues and believes pet health, food safety, agricultural health, and more can address the interconnection of human, animal, and environmental health.

References

Scan the QR code to view references for this article.

Importance of a national strategy

The executive directors of Canada's seven veterinary technician/technologist associations are working together on a national strategy to support registered veterinary technicians (RVTs) and get these hard-working professionals the recognition they deserve. Each association has its own reasons for collaborating with its sister associations—from sharing resources and strengthening national advocacy to working together on a national engagement survey.

Élisabeth Lebeau, executive director of the Association des techniciens en santé animale du Québec (ATSAQ), says it is important for them to have a national voice to better advocate for and support their members.

"For ATSAQ, collaboration is essential to ensure strong national advocacy for [RVTs], share resources, and increase the collective impact across Canada," adds Lebeau.

Executive director of the Saskatchewan Association of Veterinary Technologists (SAVT), Lisa-Marie Smith, echoes this sentiment.

"Being part of the collective ensures our association has a seat at the national table," says Smith. "It allows us to advocate for our members' interests, contribute to shared standards and education initiatives, and bring back resources and opportunities that directly benefit our members. This strengthens both our association and the profession as a whole."

The head of the Manitoba Veterinary Technologists Association (MVTA), executive director Donna Taraschuk, looks forward to learning from the experiences of the other associations as it looks to grow its membership.

"It creates a trusted space to share current events and initiatives from across Canada and internationally, and to learn from what is working well in other regions," says Taraschuk. "This national group allows us to support and champion each other, which gives us confidence that we are not working in isolation, but contributing to a co-ordinated, collective effort."

The newly formed collective is still working on how it will function and what its goals will be.

"As is commonly the case with a new collective, the first year is about establishing and aligning on our purpose and the processes that will help us achieve our goals," adds Elise Wickett, executive director of the Ontario Association of Veterinary Technicians (OAVT). "This means defining how we make decisions, what our governance framework looks like, and mapping out one or two achievable actions that deliver value and create momentum."

Smith similarly summed up how she sees the next few months unfolding. "Year one is about building the foundation and delivering quick wins: set up governance, agree on shared priorities, launch one visible joint initiative, and show members real value."

This is already happening. As Wickett points out, they have launched at least two initiatives, "the first-ever national member engagement survey and this column."

Executive director of the Alberta Veterinary Technologist Association (ABVTA), Vanessa George, agrees; in the short time the group has been meeting, they have accomplished a lot.

"This collaboration is already benefiting members through initiatives such as expanding the Togetherall peer support platform to RVTs across Canada and launching a national member survey to better understand shared priorities and challenges," says George. "Working together will also help create greater consistency around standards of practice, regulation, and education. Ultimately, this strengthens professional recognition, mobility, and the overall advancement of RVTs nationwide."

When it comes to the issues each association believes are top priorities, member engagement and retention, and ensuring RVTs can work to their full scope of skills and abilities, top the list.

"RVTs have the skills and training to significantly support workforce shortages and improve team efficiency," says George. "Supporting strong regulation, educational standards, and effective delegation will be essential to elevating the profession and sustaining access to care."

Each province is at a different stage in regulating RVTs, with some, such as Ontario, granting RVTs the same title protection and recognition as their veterinarian counterparts, while in British Columbia, veterinary technologists are not yet regulated.

"While there are only a couple of other provinces that are in the same boat, we are seeing regulatory changes that will affect our work here, labour mobility, and the overall status of the profession in Canada," says Amber Gregg, executive director of the British Columbia Technologists Association. "We feel regular and consistent advocacy for regulation of RVTs across the country is important to the success of all regulatory efforts and the profession in general."

A regulatory change that could make a difference is a new labour mobility framework. This could allow RVTs to work more easily in different provinces. It would simplify credential transfer, making it easier for them to practice in another jurisdiction.

"A thoughtful national strategy will not solve everything overnight, but it is an important step toward a more sustainable RVT profession," says Taraschuk. "By investing our time and resources into this work, we are all helping build a future where every province benefits from collective strength, shared best practices, and coordinated advocacy."

Kate Stockmann-Fetter brings more than 20 years of communications expertise to her role as digital communications specialist at the Ontario Association of Veterinary Technicians (OAVT). A former broadcast journalist, she now leads online communications and digital strategy, while serving as editor-in-chief of the RVT Journal. Stockmann-Fetter holds postgraduate credentials from Fanshawe College. In her spare time, she enjoys hiking with her two rescue dogs, Ziggy and Ruby, and cuddling with her spicy cat, Nacho.

5 questions with… Scarlett Wong, BSc, RVT, VTS(ECC), professor of veterinary technician at Sheridan College

VetLife

Scarlett Wong, BSc, RVT, VTS(ECC), was introduced to the registered veterinary technician (RVT) field in high school.

Before that introduction, she thought the only way to pursue her interest in veterinary medicine was by becoming a veterinarian.

After earning a biochemistry degree from the University of Windsor, Wong graduated from the veterinary technician program at St. Clair College and continued to pursue her professional development, driven by her passion for animals.

Her evolving passions have led her to work as an RVT in various clinics, in emergency and critical care at referral hospitals, and to teach in the veterinary technician program at Sheridan College. Her latest pursuit is a master's in One Health at Ross University School of Veterinary Medicine.

As a professor, her passion for teaching also encompasses research and writing on environmental toxins and their effects on small animals. *Veterinary Practice News Canada* (*VPC*) spoke with her to gain insights into small animal toxicology and the role veterinary practitioners play.

Wong with some of her "furry professors" at the college.

Photos courtesy Scarlett Wong

1) What is small animal toxicology, and why is it important for veterinary practitioners?

Small animal toxicology is the study of toxic substances that can affect companion animals, primarily dogs and cats, and how these substances harm their bodies. It focuses on identifying toxins, understanding routes of exposure, recognizing clinical signs of poisoning, and understanding treatment options.

Toxicology is an important area of veterinary practice because dogs and cats are naturally curious and often exposed to potentially harmful substances. These exposures may involve common household items, such as food, medications, plants, and chemicals. Although gastrointestinal exposure is often assumed, toxins can also be absorbed through the skin or inhaled, making recognition more challenging.

Some toxic exposures are time-sensitive, and outcomes are often directly linked to how quickly appropriate care is initiated. Early recognition, prompt intervention, and a strong understanding of toxin-specific management strategies can significantly reduce morbidity and mortality.

2) What are the most common environmental toxins, and how do they affect pet safety?

Environmental toxins pose a significant threat to pet safety, particularly for dogs, as they are often exposed to natural hazards during outdoor activities such as walking, hiking, and swimming.

Cyanobacteria, commonly known as blue-green algae, are increasingly recognized as an environmental threat. While cyanobacterial blooms are not a new phenomenon, their frequency and geographic spread have increased in recent years, largely due to climate change. These blooms have been linked to illness and death in livestock, birds, fish, wildlife, and dogs. Dogs are at greater risk compared to cats because they often swim in or drink from contaminated water sources during walks, especially during warmer months.

The clinical signs of cyanotoxin exposure can develop rapidly and range from within minutes to a few hours after contact. Common gastrointestinal symptoms include vomiting, diarrhea, abdominal pain, hematemesis, increased salivation, and loss of appetite. Dermal exposure may lead to itching and hives. Depending on the specific cyanotoxin, exposure can also result in acute liver injury, which may cause coagulopathy. In severe cases, death can occur within days due to hypovolemic shock resulting from liver hemorrhage or acute liver failure. It is important to take a careful medical history during triage, including any recent exposure to lakes or ponds, and to closely monitor neurological status, liver function, and kidney parameters.

Toxic mushrooms are another important environmental concern, particularly in regions with extensive forested and green spaces. While many mushroom species are harmless, a small number contain potent toxins known as Amatoxins. These toxic mushrooms typically grow in wooded or semi-wooded areas, but they can also be found in urban and suburban environments such as parks, yards, and garden beds. If ingested, even in small amounts, amatoxin-containing mushrooms can lead to a range of clinical signs, from mild gastrointestinal upset to severe liver failure. Symptoms are often accompanied by coagulopathy and acute kidney injury. Unfortunately, there is no specific antidote for amatoxin toxicity, and supportive care is the most important part of a treatment plan. Management usually involves aggressive fluid therapy, careful monitoring, and gastrointestinal decontamination for patients who are alert and able to protect their airways.

3) How can veterinary practitioners assist in reducing toxin ingestion and educating pet owners, and what role does One Health education play?

Veterinary professionals are uniquely positioned to identify emerging environmental risks and offer practical guidance

Alongside ECC, Wong has a strong interest in anesthesia.

for pet owners. One effective way to reduce the risk of toxin ingestion is through proactive education; veterinarians or RVTs can counsel clients before exposure occurs. For example, warmer temperatures, increased rainfall, and longer outdoor seasons can lead to increased cyanobacterial blooms and other toxic plants. By discussing these risks during routine wellness visits, especially in the spring and summer, veterinarians and RVTs can help pet owners recognize when and where exposure is most likely to happen. Other practical recommendations may include keeping dogs on leash near bodies of water, avoiding stagnant ponds during warm months, discouraging scavenging on walks, regularly inspecting yards for mushrooms or unfamiliar plants, and promptly rinsing pets after swimming in natural water sources. Posters, social media posts, and seasonal reminders also help reinforce these messages.

From a broader perspective, toxin exposure lies at the intersection of animal, human, and environmental health, making it a clear One Health concern. Environmental toxins that affect pets often pose risks to wildlife, livestock, and people as well.

Veterinary professionals contribute to One Health efforts by identifying exposure patterns, recognizing unusual or clustered cases, and engaging in community education. Together, these actions support environmental awareness, strengthen public health surveillance, and reduce risk beyond the individual patient. By understanding how environmental change, human behaviour, and animal management practices interact, veterinary practitioners are well-positioned to advocate for safer shared environments that benefit animals, people, and the ecosystems they share.

4) As an RVT and a specialist in emergency and critical care, what has been your experience with small animals and toxins? Could you provide a case study example?

Toxin exposure is a frequent issue we encounter in emergency medicine. Many cases arise not from neglect but from unintentional exposure or well-meaning pet owners who unknowingly provide foods, plants, or substances that are harmful to their pets. These situations are particularly challenging because they often stem from a lack of awareness rather than intent, and the emotional impact on the owners can be profound.

One case that hit me hard involved a cat exposed to an Easter lily plant. What was intended to be a thoughtful family gift turned into a nightmare. The owners were unaware that lilies are highly toxic to cats. By the time the cat presented to our emergency service, she was already showing signs of acute renal failure. This type of toxicity is especially challenging because the exact pathophysiology is still not fully understood, there is no specific antidote, and the progression of injury can be rapid and severe. The cat remained in the intensive care unit for 11 days, receiving aggressive supportive care, including intravenous fluids and close monitoring. Throughout this period, the owners struggled deeply with guilt and grief and found it very difficult to accept the prognosis. Despite exhaustive efforts, the renal damage was irreversible. Ultimately, with great sadness, the cat was euthanized. It was equally hard for the ICU team that helped and supported the case throughout.

5) What are the clinical signs of toxicosis, how is it diagnosed, and what treatments are available?

The clinical signs of toxicosis vary widely and are influenced by multiple factors, including the type of toxin, route of exposure, dose, and underlying pathophysiology. This variability can make toxic exposures difficult to recognize, particularly in the early stages when signs may be mild or nonspecific.

Following toxin ingestion, clinical signs often begin with subtle gastrointestinal changes such as vomiting, hypersalivation, reduced appetite, lethargy, or diarrhea. While these signs may result from direct gastrointestinal irritation, they may also reflect secondary injury to other organ systems, including the kidneys or liver.

Neurological abnormalities are also frequently observed with certain toxic exposures and may include tremors, ataxia, seizures, and altered mentation. These signs are commonly associated with insecticides, such as improper application or dosing of topical products. It is a well-recognized cause of neurologic toxicosis, particularly in cats.

Diagnosis of toxicosis relies heavily on history taking and clinical evaluation. Identifying potential exposure is often more informative than laboratory testing alone. Obtaining a thorough history that includes recent access to plants, chemicals, medications, and water sources is important. Whenever possible, pet owners should be encouraged to bring product packaging or photographs of suspected toxins, as this can help in identification. Establishing the timing of exposure and the progression of clinical signs is also important for guiding treatment decisions and determining prognosis.

Treatment depends on the specific toxin involved and the patient's clinical status, but it often focuses on limiting further exposure, reducing absorption, and providing supportive care. Gastrointestinal decontamination, such as inducing vomiting or administering activated charcoal, may be appropriate for alert, neurologically stable patients who can protect their airway. This step is time-sensitive and is not suitable for all cases. In cases of dermal exposure, prompt decontamination is critical. This may involve wiping the affected area or bathing the patient with mild dish soap and warm water to remove residual toxins and prevent further absorption. Supportive care, including intravenous fluids, temperature regulation, seizure control, and organ support, is the cornerstone of treatment for many toxicities, particularly when no specific antidote exists.

~ Farheen Sikandar

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