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IMPORTANT SAFETY INFORMATION: People with known hypersensitivity to penicillin or cephalosporins should avoid exposure to CLAVAMOX. Do not use in animals with a history of allergic reactions to penicillins or cephalosporins. See Brief Summary of full Prescribing Information on the back.

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1. Zoetis Multibrand A&U Final Report, June 2014. Ipsos Agricultural and Animal Health. 2. Zoetis Data on File, 2005-2015. 50 million estimated from units sold and dispensed at label dose

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Brief Summary of Prescribing Information

CLAVAMOX® (amoxicillin trihydrate/clavulanate potassium)

Veterinary Tablets

For use in dogs and cats

CAUTION: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

INDICATIONS: Clavamox Tablets are indicated in the treatment of:

Dogs: Skin and soft tissue infections such as wounds, abscesses, cellulitis, superficial/juvenile and deep pyoderma due to susceptible strains of the following organisms: β -lactamase-producing Staphylococcus aureus, non- β -lactamase-producing Staphylococcus aureus, Staphylococcus spp., Streptococcus spp., and E. coli.

Periodontal infections due to susceptible strains of both aerobic and anaerobic bacteria. Clavamox has been shown to be clinically effective for treating cases of canine periodontal disease.

Cats: Skin and soft tissue infections such as wounds, abscesses, and cellulitis/dermatitis due to susceptible strains of the following organisms: β -lactamase-producing *Staphylococcus aureus*, non- β -lactamase-producing *Staphylococcus aureus*, *Staphylococcus* spp., *Streptococcus* spp., *E. coli*, and *Pasteurella* spp. Urinary tract infections (cystitis) due to susceptible strains of *E. coli*.

Therapy may be initiated with Clavamox prior to obtaining results from bacteriological and susceptibility studies. A culture should be obtained prior to treatment to determine susceptibility of the organisms to Clavamox. Following determination of susceptibility results and clinical response to medication, therapy may be reevaluated.

CONTRAINDICATIONS: The use of this drug is contraindicated in animals with a history of an allergic reaction to any of the penicillins or cephalosporins.

WARNINGS: Safety of use in pregnant or breeding animals has not been determined. Store in a dry, cool place at temperatures not above 25°C (77°F).

Do not remove from foil strip until ready to use.

ADVERSE REACTIONS: Clavamox contains a semisynthetic penicillin (amoxicillin) and has the potential for producing allergic reactions. If an allergic reaction occurs, administer epinephrine and/or steroids.

DOSAGE AND ADMINISTRATION:

Dogs: The recommended dosage is 6.25 mg/lb of body weight twice a day. Skin and soft tissue infections such as abscesses, cellulitis, wounds, superficial/juvenile pyoderma, and periodontal infections should be treated for 5–7 days or for 48 hours after all symptoms have subsided. If no response is seen after 5 days of treatment, therapy should be discontinued and the case reevaluated. Deep pyoderma may require treatment for 21 days; the maximum duration of treatment should not exceed 30 days.

Cats: The recommended dosage is 62.5 mg twice a day. Skin and soft tissue infections such as abscesses and cellulitis/ dermatitis should be treated for 5–7 days or for 48 hours after all symptoms have subsided, not to exceed 30 days. If no response is seen after 3 days of treatment, therapy should be discontinued and the case reevaluated.

Urinary tract infections may require treatment for 10–14 days or longer. The maximum duration of treatment should not exceed 30 days.

HOW SUPPLIED: Clavamox Tablets in the following strengths are supplied in strip packs. Each carton holds 15 strips with 14 tablets per strip (210 tablets per carton).

Each 62.5-mg tablet contains amoxicillin trihydrate equivalent to 50 mg of amoxicillin activity and 12.5 mg of clavulanic acid as the potassium salt. For use in dogs and cats.

Each 125-mg tablet contains amoxicillin trihydrate equivalent to 100 mg of amoxicillin activity and 25 mg of clavulanic acid as the potassium salt. For use in dogs only.

Each 250-mg tablet contains amoxicillin trihydrate equivalent to 200 mg of amoxicillin activity and 50 mg of clavulanic acid as the potassium salt. For use in dogs only.

Each 375-mg tablet contains amoxicillin trihydrate equivalent to 300 mg of amoxicillin activity and 75 mg of clavulanic acid as the potassium salt. For use in dogs only.

Dispense according to recommendations outlined in Dosage and Administration section.

NADA #55-099, Approved by FDA

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Revised: December 2014 100544I01A&P VOLUME 111, NUMBER 11



November 2016

UBM

David Bowie in Vetrap

MAN'S NEW BESTIE? You have goat to be kidding **p** 4

Thoracic series tips in plain view _{p 16}

Don't get snared: **3 DENTAL TRAPS** p 12

Helpful hacks for healing ears

p 20

FORE CATES and PRE JOG TIONS

A glimpse into the future of veterinary medicine **p 7**



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THE GUIDE November 2016





20 Aural hematoma hacks

20 Can you save this client?

21 Read! Books you need!22 Healing holistic spaces

In the year 2020 ... "predogtions" for the future



The art of healing

Vetrap as art? Better believe.

If art is good for the soul, perhaps it's good for healing too. In the daily drag of practice, it's easy to be overwhelmed by sick and injured animals and the strain of difficult clients and pet owners who can't afford to pay for their pets' care. But Jenna Buley, DVM, found a way to make bandages more than, well, bandages. These mini pieces of art bring a lightness to the workday and put smiles on pet owners' faces too.

"I started doing striped bandages, then graduated to small designs like paw prints and stars," Dr. Buley says. "Then one day a Yorkie came in with severe bite wounds over his thorax from an encounter with a German shepherd. The Yorkie

had jumped over his smaller brother to protect him. He needed a pretty large bandage, and I decided to give him a superhero look. The response I got was so positive. This owner, who came in distraught and panicked, left with a grin on her face."

Since then, Dr. Buley has continued to express herself through the designs. "Clients laugh, share the designs with other clients in the lobby, thank me, and I believe that they get a sense that I care a lot about their animal," she says.

Her favorite design so far? "It has to be David Bowie's face a la Ziggy Stardust. I did not think it was going to turn out but as I got further along with it, it really came together," Dr. Buley says. For more go to **dvm360.com/bandageart**.

Calm the collect

ccording to *Benchmarks 2016: A Study* of *Well-Managed Practices*, 95 percent of Well-Managed Practices made changes to reduce pets' fear and anxiety last year. Below, we take a look at what these practices did and how they benefitted.

Top 5 changes implemented by Well-Managed Practices to reduce pets' fear and anxiety:

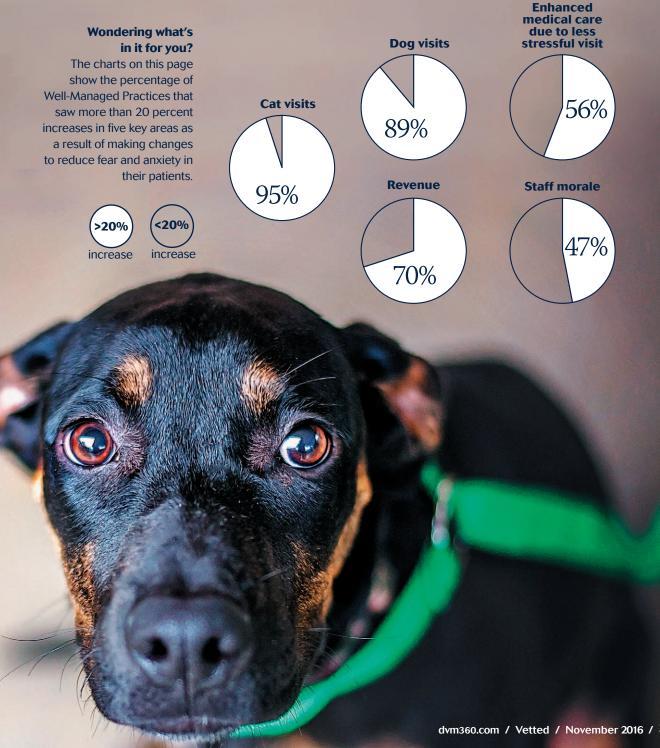
Specific rooms/ Modified rooms Pheromone products/ Calming agents Staff training/Practice certification in Fear Free Gentle handling techniques/ Positive reinforcement (excluding treats) Treats (If modifying exam rooms feels out of reach

for your practice's budget, try the ideas at dvm360.com/fearfreedesign. Anyone—really, anyone!—can do this stuff.



This is merely a tiny peek at the data found in Benchmarks 2016. Scan the code to order your own copy or visit dvm360.com/ benchmarks

fearful and the benefits ...





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Internet: Can goats be the new dogs, please??

THE PICKS

New research out of the U.K. highlights goats' cognitive abilities, and the internet collectively freaks out at the thought of goats becoming man's brand new bestie.

When researchers from the Queen Mary University of London published a study in *Biology Letters* that detailed how some goats' human-directed behavior was strikingly similar to dogs', the internet lost its mind.

The study tasked farm goats with removing a lid from a box to receive a treat. Then researchers made the reward inaccessible.

During the test, the goats were paired with a forward-facing and away-facing person. Researchers found that the goats gazed toward the forward-facing person earlier and for a longer period of time when they realized they couldn't open the box.

"Our results provide strong evidence for complex communication directed at humans in a species that was domesticated primarily for agricultural production, and show similarities with animals bred to become pets or working animals, such as dogs and horses," says Christian Nawroth, PhD.

Pet goats for everybody! (Not so fast ...)

Dr. Nawroth and his colleagues firmly disagree with the media notion that "goats are the new dogs."

Dr. Nawroth does envision a future where goats will become more popular as pets but says that the research conducted on goats will probably have a relatively small impact on pet owners' choices.

Sigh. Well, at least we've always goat the internet. (Sorry, that pun was *baaaaaad*.)

For the study abstract and more information, go to **dvm360.com/thenewdogs**. And please waste a significant portion of your day looking at THE. MOST. ADORABLE pictures of the study participants.

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*Bravecto kills fleas, prevents flea infestations, and kills ticks (black-legged tick, American dog tick, and brown dog tick) for 12 weeks. Bravecto also kills lone star ticks for 8 weeks. IMPORTANT SAFETY INFORMATION: The most common adverse reactions recorded in clinical trials were vomiting, decreased appetite, diarrhea, lethargy, polydipsia, and flatulence. Bravecto has not been shown to be effective for 12-weeks' duration in puppies less than 6 months of age. Bravecto is not effective against lone star ticks beyond 8 weeks after dosing. **References: 1.** Bravecto [prescribing information]. Summit, NJ: Merck Animal Health; 2014. **2.** Rohdich N, Roepke RKA, Zschiesche E. A randomized, blinded, controlled, and multi-centered field study comparing the efficacy and safety of Bravecto[™] (fluralaner) against Frontline[™] (fipronil) in flea- and tick-infested dogs. *Parasit Vectors*. 2014;7:83. **3.** Freedom of Information Summary, NADA 141–426. Approved May 15, 2014.

Please see Brief Summary on following page.06

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NADA 141-426, Approved by FDA



BRIEF SUMMARY (For full Prescribing Information, see package insert)

Caution:

Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

Indications:

Bravecto kills adult fleas and is indicated for the treatment and prevention of flea infestations (*Ctenocephalides felis*) and the treatment and control of tick infestations [*Ixodes scapularis* (black-legged tick), *Dermacentor variabilis* (American dog tick), and *Rhipicephalus sanguineus* (brown dog tick)] for 12 weeks in dogs and puppies 6 months of age and older, and weighing 4.4 pounds or greater.

Bravecto is also indicated for the treatment and control of Amblyomma americanum (lone star tick) infestations for 8 weeks in dogs and puppies 6 months of age and older, and weighing 4.4 pounds or greater.

Contraindications:

There are no known contraindications for the use of the product.

Warnings:

Not for human use. Keep this and all drugs out of the reach of children. Keep the product in the original packaging until use, in order to prevent children from getting direct access to the product. Do not eat, drink or smoke while handling the product. Wash hands thoroughly with soap and water immediately after use of the product.

Precautions:

Bravecto has not been shown to be effective for 12-weeks duration in puppies less than 6 months of age. Bravecto is not effective against Amblyomma americanum ticks beyond 8 weeks after dosing.

Adverse Reactions:

In a well-controlled U.S. field study, which included 294 dogs (224 dogs were administered Bravecto every 12 weeks and 70 dogs were administered an oral active control every 4 weeks and were provided with a tick collar); there were no serious adverse reactions. All potential adverse reactions were recorded in dogs treated with Bravecto over a 182-day period and in dogs treated with the active control over an 84-day period. The most frequently reported adverse reaction in dogs in the Bravecto and active control groups was vomiting.

Percentage of Dogs with Adverse Reactions in the Field Study

Adverse Reaction (AR)	Bravecto Group: Percentage of Dogs with the AR During the 182-Day Study (n=224 dogs)	Active Control Group: Percentage of Dogs with the AR During the 84-Day Study (n=70 dogs)
Vomiting	7.1	14.3
Decreased Appetite	6.7	0.0
Diarrhea	4.9	2.9
Lethargy	5.4	7.1
Polydipsia	1.8	4.3
Flatulence	1.3	0.0

In a well-controlled laboratory dose confirmation study, one dog developed edema and hyperemia of the upper lips within one hour of receiving Bravecto. The edema improved progressively through the day and had resolved without medical intervention by the next morning.

For technical assistance or to report a suspected adverse drug reaction, contact Merck Animal Health at 1-800-224-5318. Additional information can be found at www.bravecto.com. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.fda.gov/AnimalVeterinary/ SafetyHealth.

How Supplied:

Bravecto is available in five strengths (112.5, 250, 500, 1000, and 1400 mg fluralaner per chew). Each chew is packaged individually into aluminum foil blister packs sealed with a peelable paper backed foil lid stock. Product may be packaged in 1, 2, or 4 chews per package.

Distributed by: Intervet Inc (d/b/a Merck Animal Health) Summit, NJ 07901

Made in Austria

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141487 R2 Reference: Bravecto [prescribing information] Summit, NJ: Merck Animal Health; 2014 Available by veterinary prescription only.





Check it: Here's what Vetted's sister publications are up to:

You're not crazy. Change and innovation are happening faster everywhere, including veterinary practice. In dvm360, a veterinary from so you're not left out of the glorious future of pet care.

firstline

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S top for a moment and imagine the world 25 years in the future, specifically the world of veterinary medicine. Babies being born at this minute might be the new veterinary graduates ready to venture

into the world of pet healthcare. We asked some veterinary specialists to dream of the days ahead and picture what the world of veterinary medicine might look like in 2041 and beyond in their areas of expertise.

Some fantastic stuff is due to happen, folks.

The topic of cancer

Sue Ettinger, DVM, DACVIM (oncology) I dream of a cure for cancer, like every veterinarian, cancer specialist and pet



owner. Or a one-time treatment, injectable or, even better, pill that would be it for treatment! But it may be more reasonable to ask for treatments that are less toxic

for the team to give and have fewer side effects for patients. I would love treatment to be less expensive so everyone who wanted to treat could. I am excited we have more treatment options, like immunotherapy and metronomic chemotherapy. And I am hopeful we will have more personalized treatments that we tailor to the individual. Finally, I hope we will can #kickcancersbutt!

Critical care on another level

Garret Pachtinger, VMD, DACVECC It will be interesting to watch the evolving role of American College of Veterinary Emergency and Critical Care (ACVECC) diplomates in the hospital. Are they in the ICU evaluating serial lactate measurements on every patient? Are they receiving on the front line of the ER? Are they becoming true "hospitalists," overseeing the ER, ICU and development of management and leadership skills? I predict busy specialty hospitals will

employ fewer emergency room doctors, replaced by criticalists. In turn, emergency room medicine will become more advanced because trained

specialists are recommending, using and interpreting new technology.

The fantastic feline

Elizabeth Colleran, DVM, DABVP (feline) As North American cities continue to grow and urban migration increases, the conflict between demand for feline companionship and well-meaning efforts to sterilize cats will escalate.

Chemical sterilization techniques will improve and fewer colonies of cats will be found. This will create a shortage of cats just



when more people want to adopt. Recognizing this, veterinarians, geneticists, ethologists and other scientists will start working to build a population of cats that people want. The protection of cats will become a worldwide undertaking with every country working to create a healthy gene pool of cats for whom homes can easily be found. And that's how cats will be responsible for world peace.

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Destiny of dermatology

Melissa Hall, DVM, DACVD

There are many changes going on in dermatology—some great and some scary. On the positive side, numerous advances have been made in available treatments, from flea prevention to

symptomatic allergy control options. As veterinarians, our ability to make patients more comfortable is improving every day, which also saves our clients from many sleepless nights. And these new treatments are more targeted, which means many fewer side effects, so less



frustration and higher success for these chronic cases. On the flip side, antimicrobial resistance is on the rise. Methicillinresistant *Staphylococcus pseudintermedius* and multidrugresistant *Pseudomonas aeruginosa* are just two bugs that will continue to plague our cases. It is going to become trickier and trickier to treat skin and ear infections. We are losing the fight

> when we just rely on systemic antibiotics. The good news is we understand more and more about the epidermis and the importance of topical therapy!

A pearly white future

Jan Bellows, DVM, DACVD, DABVP Within 25 years, all veterinary schools will embrace the importance of dentistry to the veterinarian, patient, client and practice. Dentistry will receive as much foundation and clinical time as surgery and medicine. All state practice acts will require those who advertise the practice of dentistry have intraoral radiology available. The standard of care will require full-mouth radiographs on all dental procedures. Dental extractions

will be recognized as oral surgery only performed by a veterinarian. Easily instituted and efficacious plaque prevention processes will begin in



puppyhood and kittenhood. And no longer will small pocket pets routinely loose teeth after a few years of life.

The perils to public health

Jason Stull, VMD, MPVM, PhD, DACVPM, and Andrew S. Bowman, MS, DVM, PhD, DACVPM



Our prediction: More zoonotic diseases will become breakfast discussions. As animal-human interfaces change, pathogens considered rare or sequestered will

make their way into our backyards. Fortunately, advances in molecular diagnostics will enable us to identify determinants of disease and answer questions currently stumping us: What role do animals play in transmitting disease to us? What practices can we employ to decrease disease

risks? Unfortunately, getting people to actually wash their hands will still be a challenge.



A vital future with one caveat

David S. Bruyette, DVM, DACVIM

The value of pet ownership and the human-animal bond will only become stronger. Electronics will deepen the desire to



become attached to a smaller number of closely held family members and pets. And reliance on technology will never overcome the core requirements of being a successful veterinarian. To be able to listen carefully to a client's concerns and perform a thorough physical examination will be needed more than ever to target technology appropriately. But if we do not solve the economic crisis facing graduates regarding student indebtedness vs. salary, I see fewer and fewer of the best and brightest entering the field.

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A utopian future: How tech will get us there

An honest assessment of veterinarians' hang-ups with technology and a path to move forward.

> By Jessica Vogelsang, DVM, and Adrienne Wagner

dam Little, DVM, says you can offer better service and veterinary care while requiring less money and time from the pet owner. Skeptics, are you rolling your eyes yet?

OK, so Dr. Little, director of veterinary innovation and entrepreneurship at Texas A&M University, agrees that hasn't always been the case. But the means to that end lies right in the palm of your hand—literally, your phone—and it's the key to the future of veterinary practice.

Merging tech + vetmed

Dr. Little has worked at the intersection of emerging technology and veterinary medicine for the entirety of his career, giving him unique insight into the possibilities for tomorrow's veterinary practices.

He predicts a future where many sample collections take place in the home instead of the clinic. Using advanced collection techniques and smartphone apps to help acquire and interpret data frees veterinarians up to focus on what matters—building a relationship with the client. But the key is to view these technologies collaboratively, not competitively.

Dr. Little notes that many veterinarians enjoy using "chat apps," with their combination of human and artificial intelligence, for things like travel booking and fitness tracking. But when clients do it? Whoa, no good.

Case in point: An email from a *Vetted* reader criticizing the magazine's coverage of Petnostics, an in-home urine monitoring kit for pet owners (August 2016). The letter read,

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in part, "Let's recognize the product for what it is: another end-run around a consultation with the veterinarian. This product isn't marketed to veterinarians; it's marketed directly to the consumer."

Coincidentally, Dr. Little addressed the Petnostics conundrum during a presentation to the Royal College of Veterinary Surgeons this past July in the U.K.: "[Petnostics] is a great example of the friction, and at the same time, a lack of a pathway for these types of innovations."

Petnostics was first featured on TV show Shark Tank. In his lecture at RCVS, Dr. Little played a clip of the show's judges reacting to the product. It boiled down to: "My vet wants me to bring my animal in as much as I possibly can. So why is he going to give me this really convenient thing?"

Dr. Little doesn't disagree with this assessment—but he also doesn't think veterinarians can avoid the issue.

"Today, discussing technology and evolving the veterinary business model is a very difficult conversation to have," Dr. Little says. "And yet the information that's being generated is going to transform the way we think about animal health—so we need to form partnerships."

Who wants change? ME! Who wants to change? NOT ME!

The problem with new technology is that one must first accept it and then learn to use it. (Adoption—it's not just for puppies!)

Karen Felsted, DVM, CVPM, MS, CPA, acknolwedges that this is hard: "If veterinarians don't see an immediate positive impact on their practice, they tend to get scared, which conflicts with change and innovation. Much of the pushback on technologies that empower the pet owner comes from a place of fear. Change is hard. We're not well-wired for change."

Dr. Little has some ideas to flip that mentality. Here are few:

> Think like an entrepreneur. Next-gen veterinarians need to adopt an entrepreneurial mindset. Vet schools don't always update their models to reflect new technologies. Students need the freedom to think outside the box—and fail.

> Find the early adopters. Create a network of veterinary hospitals to lower the initial investment in new ideas for everyone.

> Get help everywhere. Frame industry challenges as targeted problems whose solutions can be crowdsourced. We're smarter together.

"I think we'll look back in 15 years and say, why did we practice like this? There was so much missed potential," Dr. Little says. But relationships remain at the heart of his vision.

Tech that reinforces your role as the trusted partner? Imagine that.

What would make your job easier?

We asked CVC attendees what changes they'd like to see in veterinary practice.

wish they'd deregulate controlled drug reporting to the bharmaceutical board. Each prescription has to be reported."

> I'd like a voice-activated transcription system for charting."

A cut-less spar and neuter machine." An automated treat dispenser."



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3 dental traps... and how to avoid them By Sarah J. Wooten, DVM

ho here has fractured a root during a tooth extraction? Everyone? If you've ever made one wrong move with a dental elevator or had an expletive-inducing suture dehiscence, Matthew Lemmons, DVM, DAVDC, a veterinary dentist at MedVet Indianapolis, wants you to know that you are not alone. In fact, these mishaps are so common that he created a list, including how to avoid them and how to fix them when things go wrong. He presented at a recent CVC.

TRAP #1: Fractured retained roots

Let's face it: roots fracture during tooth extractions—a lot. Fractured retained roots can go undetected in asymptomatic dogs, but these roots are a source of pain and infection in both dogs and cats and of anorexia in cats. Retained roots in maxillary teeth can abscess and be a source of suborbital swelling and draining tracts. In cats, crown amputations are appropriate only when there is bone replacement resorption.

You can avoid fracturing a tooth root by following Dr. Lemmons' tips:

- Section multirooted teeth before extracting, even if the tooth demonstrates mobility.
- > Remove adequate buccal bone before elevating.
- > Use a luxator before an elevator to cut the periodontal ligament.
- > Use sharp instruments.
- > When elevating, rotate just a few degrees, and when

you feel resistance, hold for a full 10 seconds to fatigue the periodontal ligament and alveolar bone (one one-thousand, two onethousand, three one-thousand ...).

So you follow all the rules and the darn root still breaks. Now what?

First, identify the root. Suction any blood and obtain a radiograph to get the lay of the land. Then remove the buccal bone approaching the apex of the root.

So you may find root forceps and a root tip elevator helpful in removing the root.

If you're having a hard time accessing the root, a surgical-length burr may help, Dr. Lemmons says. Be aware that the longer shaft puts more torque on the handpiece and that the temperature of the burr needs to be monitored.

What do you do if you discover a retained tooth root on radiographs during a "routine" dental prophylaxis?

Dr. Lemmons says to take the root out, especially if there is any lucency around the root. If there's granulation tissue over the root, remove it with a diamond burr before extracting the root.



Dr. Sarah Wooten divides her time between private practice at Sheep Draw Veterinary Hospital in Greeley, Colorado, and writing articles and filming video content for media outlets. See introverted Dr. Wooten pose as an extrovert at CVC San Diego, Dec. 8-11, where she'll be speaking about introversion, women in leadership and more. Visit **thecvc.com/sd**.

TRAP #2: Iatrogenic trauma, otherwise known as "the big oops"

Two possible iatrogenic injuries that may be caused during extraction are mandibular fracture and orbital penetration with an elevator.

> Mandibular fracture is caused by forceful elevation of a mandibular canine or molar. Dr. Lemmons has three tips to avoid this pitfall:

> Always obtain a radiograph of the jaw before attempting an extraction. This gives the operator an understanding of the anatomy and integrity of the mandible.

> Remove enough alveolar bone before attempting extraction—at least two-thirds buccal alveolar bone for mandibular canines and half for mandibular molars. Incisors usually do not require removal of bone.

> Be cautious when elevating between the mandibular canine tooth and third incisor.

If the jaw fractures during extraction, complete your extraction before addressing the fracture. Flush the alveolus with sterile saline solution, consider using a natural bone graft, close without tension and evaluate the fracture. If the fracture is stable and occlusion is good, jaw fractures can be medically managed with soft food and pain medication. If the fracture is not stable, rigid fixation with interdental wiring is recommended. Interdental wiring is less invasive than plates and does not require drilling through the jaw. And Dr. Lemmons reminds us that small breeds don't have a lot of bone to work with in the first place. If you do repair the fracture with a plate, avoid putting screws in tooth roots.

Orbital penetration with an elevator is more likely to occur with improper grip and dull instruments. Most cases require enucleation. Dr. Lemmons says you can avoid this "oops" by using sharp instruments and handling the elevator correctly. Keep your finger near the working end of the elevator so that if you slip, your finger works as a brake.

trap #3: Suture dehiscence

Dehiscence is usually caused by tension on the suture. Rarely, neoplasia is the cause. Consequences include delayed healing, pain and oronasal fistula with possible turbinate atrophy and chronic nasal discharge.

Dr. Lemmons avoids suture dehiscence by using a periosteal-releasing incision to reduce tension. When you reflect your flap, the periosteum of the jaw will adhere to the mucosa. Use scissors to dissect between the mucosa and periosteum and incise the periosteum while leaving the mucosa intact. This will allow the elastin in the mucosa to stretch and reduce tension when the flap is sutured. Dr. Lemmons recommends laying your flap down where you want it to go when it is ready to suture. If it stays put, you are good to go. If it snaps back, then you need to release more tension before suturing. Débride epithelium at the edges of the flap before suturing, and take deep bites of at least 3 mm.

When creating a flap to repair an oronasal fistula, Dr. Lemmons advises using a four-corner mucoperiosteal flap and that you create flaps that are one and half times the size of the defect. The flap should be one and half times as wide as it is long. Dr. Lemmons creates "short, squatty flaps—not long, thin flaps."

Don't forget: delicate tissue handling is required. The more you mess with the mucosa, the less likely it is to heal correctly. Stay sutures can help with delicate tissue handling.

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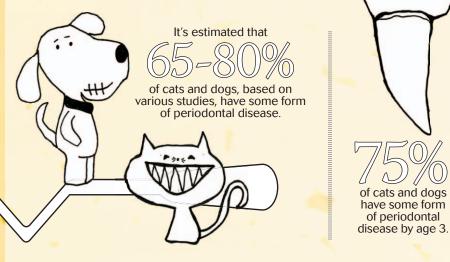
Dental estimates: *It's a trap!*

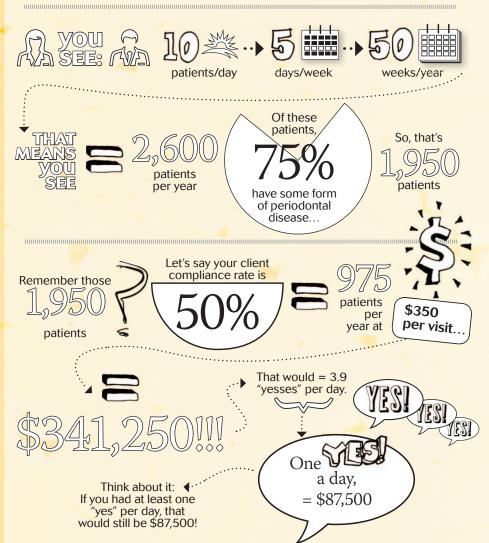
OK, not really. But you may be sick of hearing about those "expensive" veterinary dental cleanings. Even if you don't find any major oral issues, prices may be hitting \$500 to \$600 just for the anesthetized examination and cleaning itself. Mark Opperman, CVPM, of VMC Inc. in Evergreen, Colorado, has two ways you might get hesitant clients to agree to this vital part of a pet's healthcare: 1) Communicate the value by showing a video of the entire intricate process; 2) Offer an in-house payment plan for trusted clients-one-third today, one-third 30 days later, and one-third 30 days after that. (Don't fear accounts receivable!) Hear more at dvm360.com/ moneytraps.



Oh, snap!

Run the numbers on dental care ...





This advice was provided by Candice Hoerner, CVT, VTS (Dentistry), from Big Sky Veterinary Dentistry Education, Columbia Falls, Montana. It was part of a CVC talk titled "Getting Owners to Consent to Dentistry in Your Practice."



Imaging coughing dogs: Thoracic series tips IN DIALD V

When it comes to obtaining thoracic radiographs of coughing dogs, diagnostic imaging specialist Dr. Rachel Pollard has tips for improving your image.

By Kathryn Primm, DVM t a recent CVC session, Rachel Pollard, DVM, PhD, DACVR, an associate professor and researcher at the University of California, Davis, School of Veterinary Medicine, gave a tip-packed talk on obtaining and interpreting thoracic series in coughing dogs. Here are just a few of the things I plan to implement in my own practice:

> Kathryn Primm, DVM, owns and practices at Applebrook Animal Hospital in Ooltewah, Tennessee, and is the author of Tennessee Tails: Pets and Their People.



All coughing dogs are not created equal Don't miss this session by Whit Church, DVM, DACVIM (cardiology), at CVC San Diego! **thecvc.com** has more.

Broaden your views

For Dr. Pollard, three views—right and left lateral and dorsoventral (DV) projections—are standard for all patients undergoing thoracic studies. Why is three the magic number? Including both lateral projections is the most comprehensive way to check for lesions, and the left lateral projection, in particular, aids

in the detection of pulmonary nodules and dependent pneumonia in the patient's right side. The DV projection, according to Dr. Pollard, allows the heart to be in its normal anatomic position and is easier for the animal, minimizing restraint needs and personnel exposure.

If you want to confirm whether or not you've seen a pulmonary lesion on the DV view or if pleural effusion is making it difficult to see the heart, you can add a fourth view: ventrodorsal (VD).

What's your interpretation?

Accurately interpreting patterns in pulmonary parenchyma findings is difficult due to the amount of variation in what's normal. Dr. Pollard described the radiographic lung as having two compartments—one contains air and includes the lumen and alveoli, and the other is composed of soft tissue structures, such as airway walls and vessels (also called the interstitium).

According to Dr. Pollard, the presence of air in the alveolar compartment is the most crucial aspect in determining a lung's particular radiographic appearance, and pulmonary vessels and the walls of large-diameter airways are responsible for the "pulmonary markings" used to establish the lung field's extent. Any deviance in either structure can cause radiographic lung patterns characteristic of pulmonary parenchymal disease, but to accurately interpret these patterns in thoracic radiographs, Dr. Pollard said you must consider:

> Whether or not your study is technically adequate. Consider the presence of positioning artifacts (rotation, limb position, neck position), overexposure, underexposure, processing artifacts and respiration phase.

> Whether or not the radiographs are abnormal. This is difficult because, as mentioned above, what's "normal" widely varies. And the fact that the amount of interstitial density is inversely related to the degree of lung inflation and level of exposure adds further complication. According to Dr. Pollard, overestimating the significance of prominent interstitial patterns in an underexposed or underinflated chest is the most common error.

Keep your eye on the horizon(tal)

Need to confirm whether or not there's fluid within either the pleural space or a pulmonary mass? Take a horizontal beam radiograph. For this view, the dog is placed between the x-ray tube (positioned so that the beam travels across the table) and the detector in either sternal or lateral recumbency.

Dr. Pollard said that most new machines are able to do this, but because the detector has to be out on the table, additional people may be required to keep it secure.



More imaging insight from Dr. Pollard

Aspiration pneumonia is not usually associated with pleural effusion in dogs.

Dogs with pleural effusion do not tend to pocket the fluid in one location (unlike cats).

Pulmonary abscesses cannot be adequately controlled by antibiotic treatment alone, especially in the presence of a foreign body.

4

It can be normal for air to be present in the esophagus of a sedated animal.

What the heck do I charge for digital radiographs?

Calculating the costs of services like DR can be tough, but you're up to the task. By Denise Tumblin, CPA

actoring in labor, the cost of all necessary materials and supplies, facility and equipment costs, and administrative overhead ... This might seem like a lot of work, but it provides a huge reality check for you and your team on the expense side of the pricing equation. Do your fees truly cover your costs, or are you in the red? Traditional thinking related to setting fees looks like this:

Cost + profit = price

When your costs increase, the easy solution is to raise your prices to maintain a reasonable profit. But this strategy might not be feasible if your community is economically challenged or your fees are the highest for the area. These scenarios might require a different approach. You start with the price the clients will accept and manage your costs to maintain the desired profit margin:

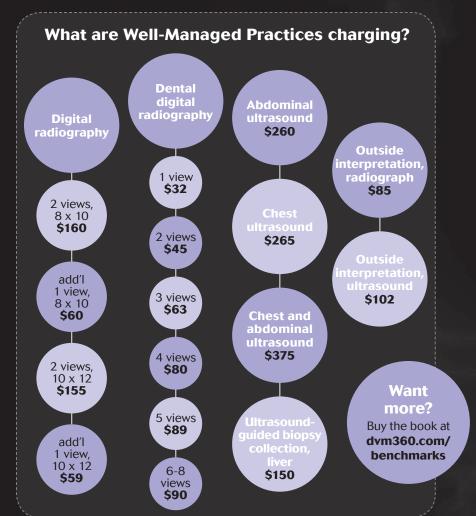
Price – cost = profit

(Also, don't forget that it's essential to talk to your cash-strapped clients—and isn't that really all of us these days? about alternative payment options, such as pet insurance and third-party payment plans.)

Here's another strategy. At WTA Veterinary Consulting we have figured out the ratio between some diagnostic imaging fees and the exam fee for Well-Managed Practices. Here they are:

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Denise Tumblin is president and owner of WTA Veterinary Consulting in Columbus, Ohio, and author of the Benchmarks series of Well-Managed Practice studies co-published by WTA and Veterinary Economics. This article is adapted from Benchmarks 2015: A Study of Well-Managed Practices.

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> Karen Stasky, veterinary assistant Evergreen Park, Illinois

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> Dr. LeAnne Breland Millington, Tennessee

Get ear bandages to stay in place

Ye been using stretch net sleeves to allow air to get into the canal of the ear that we bandage over the head. However, the sleeve has been difficult to tape in place. Taping the cranial edge to the dog's head has not been a problem, but securing the caudal edge with tape is not ideal, because the sleeve tends to creep forward with the loose skin on the neck. Cutting small slits through the stretch net sleeve and feeding the collar through it solves this problem.

> Dr. John S. Parker Novi, Michigan

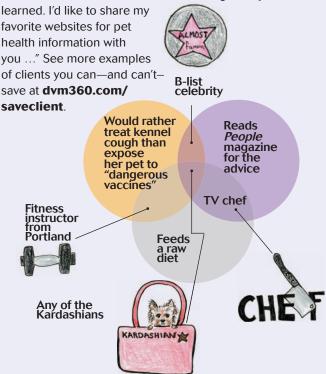
Find 9 more tips for easier cat and dog ear care at **dvm360.com/earcare**



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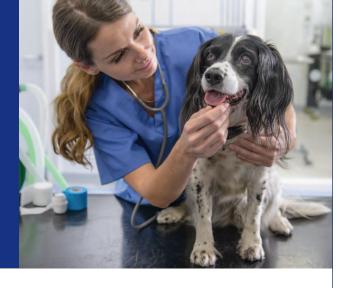
Who doesn't? That's why the crack teams at WTA Veterinary Consultants and *Veterinary Economics* (yep, that's us!) conduct the annual *Benchmarks Study of Well-Managed Practices*.



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HOSPITAL DESIGN

Here's to healing holistic spaces

By Geraldine Diethelm, DVM

In holistic veterinary medicine the atmosphere is a key component in treatment. I am proud of our acupuncture and holistic exam room. We are a general medicine and referral hospital also, so having a special room dedicated to holistic practice is very important. It is in a quiet area of the hospital, separate from the other exam rooms, next to the manager's office and file room.



We made a stained glass window to specifically fit my vision of recreating "The Flower Seller" by Diego Rivera. It casts a wonderful light into the room at certain times of the day. The furniture in the room is just that, furniture, so you feel at home rather than in a hospital. The walls are a warm orange-yellow and lights are on a dimmer, so that we can choose the intensity of the lighting depending on the situation. We built a niche for the work desk to keep it from becoming a focal point.



A louver door next to the work desk opens into a small room where I store

my herbs and homeopathic remedies. There is a folding table—hidden behind a wicker blind—for our small patients, but otherwise I use homemade quilted blankets on

the floor to work on the

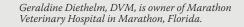
animals there.

The focal point in the room is the water fountain that adds a sense of calm and relaxation to the space. There are lights pointed just toward the fountain to draw the eye. Hidden behind the fountain is a diffuser for calming aromatherapy if needed. There are also large crystals and healing stones all over the room.





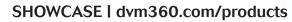
The door to the holistic room is an indicator that this is a special area. It is a lead glass door with flowers, which is elegant and calming.





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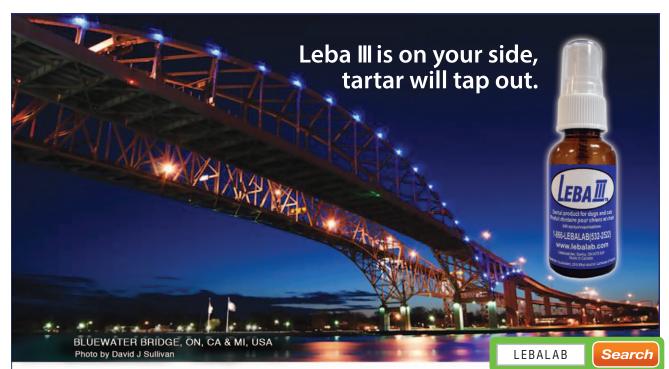


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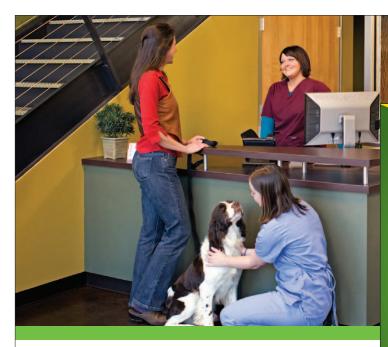


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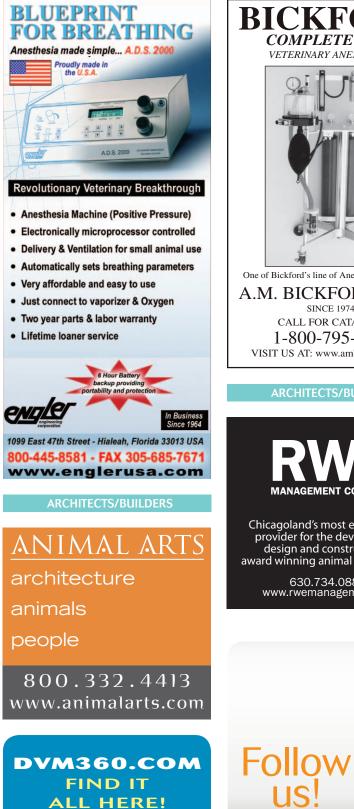
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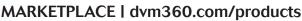
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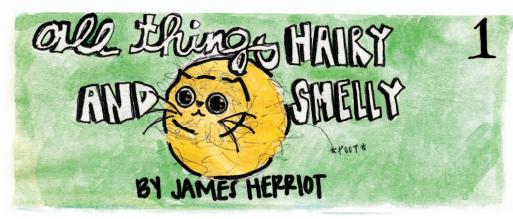
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WTAVETERINARY c o n s u l t a n t s

In the year **2020** ...

"Predogtions" for the not-so-distant future, by Dr. Marty Becker.



The manuscript of James Herriot's unpublished novel, *All Things Hairy and Smelly*, is discovered in a Yorkshire, England, attic.



A major pet food company announces an adult-active-indoor-multicatsenior-long-coat-multidoghairball-control-sensitivestomach-outdoor-oral-carehealthy-weight-puppy-kittenand-backyard-chicken-grainfree diet. I mean, finally!



Oh, there's more where this came from—check out Dr. Becker's additional pre(dog)tions for the not-so-distant future at **dvm360.com/year2020**. And speaking of the future of veterinary medicine ... don't miss Dr. Becker's sessions on Fear Free veterinary care at CVC San Diego Friday, Dec. 9. For more info, go to **thecvc.com/sd**.

The federal government

announces that it will stop lending money it doesn't have to veterinary students who can't repay and who are studying for jobs that do not exist. Undeterred, prospective veterinary students continue to enroll and pledge the future earnings of their yet unborn children.

December 8-11, 2016



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Reference: 1. Nobivac[®] Canine Flu Bivalent [product label]. Madison, NJ: Merck Animal Health.





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