

Obenski's final bow

After 37 years of veterinary practice laughs, popular columnist bids adieu.
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Good news, bad news for profession's economics

AVMA analysts predict improving employment situation, but picture is bleak on lifetime ROI for veterinary degree. *By Kristi Reimer*

A survey conducted by the American Veterinary Medical Association (AVMA) Veterinary Economics Division shows that 51 percent of veterinarians are working at full capacity vs. 35 percent in 2012. AVMA economists presented the findings at the annual AVMA Economic Summit Oct. 28 in Chicago.

Overall excess capacity in the profession is at 13 percent (meaning 13 percent of veterinarians' capacity to provide services is going unused), down from 17 percent two years ago, and predictions are that it will continue to decline over the next few years and stabilize at about 6 percent through 2025. Food animal and equine veterinarians have seen the greatest return toward full capacity.

A number of factors—or “macroeconomic assumptions”—are at play in this forecast, but most important are improved projections in consumer spending from the Congressional

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I PAID OFF my student loans in FIVE YEARS

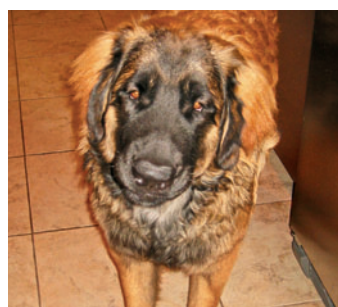
This young veterinarian got free of her six-figure debt fast—and she's loving the freedom it brings. *By Brooke Dooley, DVM*

I paid off my veterinary school debt just shy of my five-year graduation anniversary. It was one of the happiest days of my life—but it was no easy feat. There were sacrifices, of course, along with a series of decisions I made with my financial goals in mind. Those things, along with a little bit of good fortune, made it possible. I'd like to share my story

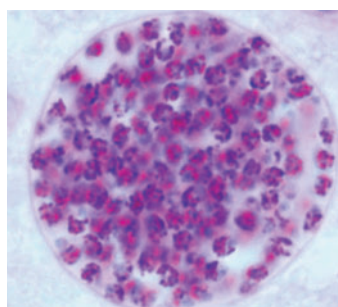
in the hopes that it will inspire my colleagues to take control of their debt and to help students and veterinarian-hopefuls see that it can be done.

While I completely agree that veterinary school debt is out of control, it isn't going to stop being a problem tomorrow. For that reason, it's impera-

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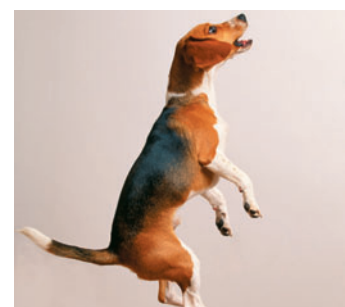
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Is that dog hyper? Or is something else going on?
page M1

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Important Safety Information: As a class, cyclooxygenase inhibitory NSAIDs may be associated with gastrointestinal, kidney or liver side effects. These are usually mild, but may be serious. Pet owners should discontinue therapy and contact their veterinarian immediately if side effects occur. Evaluation for pre-existing conditions and regular monitoring are recommended for pets on any medication, including PREVICOX® (firocoxib). Use with other NSAIDs, corticosteroids or nephrotoxic medication should be avoided. Refer to the prescribing information for complete details or visit www.PREVICOX.com.

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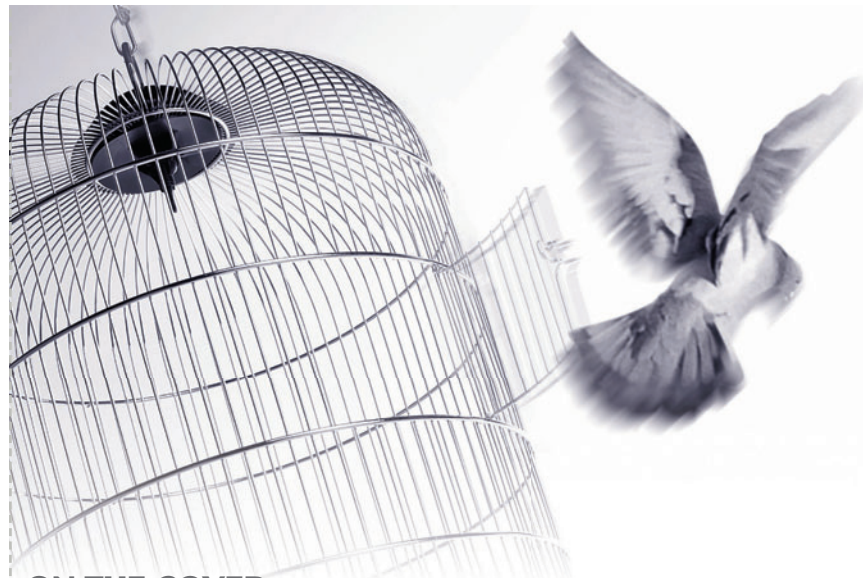
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» This young veterinarian got free of her six-figure debt fast—and she's loving the freedom it brings. **Cover, page 32**

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“It’s my job to turn your frown upside down.”

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AVRL

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WHERE DID I GO WRONG?

| Michael A. Obenski, DVM

Obenski's *final* bow

Longtime columnist bids farewell to this page after 37 years.

It was 1977. Back then, when clients presented us with a purebred dog, it meant both parents were the same breed. Peek-a-poops, Spit-a-pugs and Weimer-doodles were considered mutts. Occasionally we fielded questions such as, "Do you have to go to school to be a veterinarian?" And donning a stethoscope sometimes led to this client observation: "Look, just like a real doctor!"

As you know, my friend Arnie is the greatest veterinary practitioner I have ever known. We all know that our clients never say anything important until you put the stethoscope in your ears. But it was Arnie who invented a fake version of the instrument so that he could hear what they were saying. He is usually very calm and collected. However, in December of 1977, he became the voice of doom.

"Well," he said, "it looks like the end of the line for veterinary medicine. I just read an idiotic article about practice management. It was one of the dumbest things I've ever seen. This skinny little upstart magazine won't stay in business long if they keep printing drivel like that."

He was referring, of course, to the first time my column appeared in this publication. Since then, his words have proven to be less than prophetic. The magazine has thrived, and I can only hope that my meager contributions have helped lead to that success. All this time, though, Arnie has remained my chief critic. (Sometimes tongue-in-cheek, other times foot-in-mouth, but he is always uncomfortable about what I have said in print.)

What have I ever said that would upset anyone? When have I ever been politically incorrect? I suggest you take a stiff dose of Dramamine and buckle your seat belt, because we're about to take a nauseating trip down memory lane to review the things I've shared over the years.

First, I have revealed the 14 absolute truths of veterinary practice. To name a few:

- > There is no correlation between the amount of talking a client does and the amount of useful information that you are going to get out of it.
- > When someone comes to your office, you cannot automatically assume that person has any brains.
- > There is no direct connection between what a client wants and what they are willing to pay for it.

> And, a basic rule of practice management: You can catch more flies with honey than you can with vinegar, but you can catch the most flies with bull****.

My writing about these truths would always elicit a phone call from Arnie. "You can't say things like that in print, Mike. If your clients see it, your practice will go down the tubes. That magazine will feel the feedback too. They'll get rid of you if they have any sense."

Wrong again, Arnie. Many of my clients read my column regularly, and I'm proud to say that several major writing awards have come my way.

I can't take all the

credit (or blame) for things I've written, though. Many colleagues have contributed to my ramblings. Do you remember my retired friend Dr. Leonard D. Hardway, who lives at the Cold Ember Home for burned-out veterinarians in Ropes End, Wisconsin? It was Leonard who revealed the client conversations to avoid.

For example, he told us how he once promised Mrs. Fester that nothing could go wrong with Tigger's operation. "Don't worry, nothing ever goes wrong with a routine spay," he said. The incision drained for two years. No wonder he wound up at the Cold Ember Home.

Leonard also gets credit for asking some of our profession's most puzzling questions. Things such as, why are there always more journals piled up on your desk waiting to be read than you remember putting there? Why do clients who are spending good money for an office call



Interesting fact: If you gathered all of my columns in one place and laid them end to end, you and I would both be declared mentally incompetent.

WHERE DID I GO WRONG? I Michael A. Obenski, DVM

converse with their children, daydream out loud and babble baby talk to their pets instead of listening to the advice they’re paying for? Why do people call the veterinarian when a dog bites them? Do they call the florist when the dog eats a poisonous plant? And, my favorite: Why do the kids have to come along to my office? Do they take the dog along when they go to the pediatrician?

Another collaborator I should recognize is Earl Lee Senility. Earl helped me categorize our clients as members of

specific groups based on behavior (i.e., pet owner taxonomy). This taxonomy includes the last-minute dog trainer (this guy pounds the table and tells his dog to jump up), the swift-running thump-mortis (the deadbeat), *Nomissa thingum* (the free-roaming hall stander who doesn’t stay in the exam room), and *Infantus lingo* (the baby talker).

Arnie’s reaction was one of concern. “You can’t classify people like that,” he said. “You are profiling based on behavior. You’re going to get into big

trouble one of these days.”

As much as I respect his opinions, I chose, once again, to ignore his advice.

One idea that never drew criticism was my invention of the Veterinary Olympic Games. With the help of Althea Atha Games and Dee Cathelon, we created games for veterinarians and animals, large and small. Eventually, Chainsaw Necropsy was removed from the list of events, but Find the Thermometer (from inside the cow) and The Electric Slide (getting through

charged fences) remain popular today. Small animal events include Pill Hockey (corralling a wayward wafer as it careens across the floor), Large Dog/Slippery Floor Patient Transport, Cat Roping and Dog Wrestling.

Despite his concerns and criticisms, Arnie has been a key contributor. It was he who helped me uncover the existence of the Pet Owners Handbook—a secret guide veterinarians are never allowed to see. During a clandestine operation where we met with an agent known only as “Deep Pharynx,” we obtained a copy. Tips included:

- > Allow you pet to jump off of the table frequently.
 - > Ask for a bowl of water.
 - > Take children with you even if you have to borrow some from a neighbor.
- Be sure they swing from the exam table or open any drawers they see.
- > Make a computer-assisted home diagnosis beforehand and stick to it.
 - > Do not walk your pet outside before entering the office. Veterinarians expect an occasional mess on the floor.
- Besides, they might need a sample to test for disease.

There were, of course, countless other helpful tips in the book, which Arnie and I shared with you over a two-month period.

Now, I have some bad news. If you have been with me from the beginning, you’ve wasted at least a full week of your time reading my take on veterinary practice. You will never be able to get that time back—it is gone forever. (Interesting fact: If you gathered all of my columns in one place and laid them end to end, you and I would both be declared mentally incompetent.)

Over these decades I’ve shared hundreds of barely believable stories with you. They were all true. And *dvm360* magazine has moved its home office four times—possibly trying to get away from me—but I tracked them down each time. I’ve outlasted five editors, or perhaps I wore them out.

This month, on the 37th anniversary of my first column, Arnie chose to share some words of wisdom with me. “Mike,” he said. “You’ve written darn near 500 columns. If you haven’t gotten your point across by now, it’s time to quit.”

In this case, Arnie was right. It’s been long enough. So this is my final written venture into the often-surreal world of veterinary practice. I thank you, my friends and colleagues, for following my adventures these 37 years. **dvm360**

Dr. Michael Obenski owns Allentown Clinic for Cats in Allentown, Pa. He has written 431 columns for this magazine.

Previcox® (firocoxib) CHEWABLE TABLETS

Brief Summary: Before using PREVICOX, please consult the product insert, a summary of which follows:

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

Indications: PREVICOX (firocoxib) Chewable Tablets are indicated for the control of pain and inflammation associated with osteoarthritis and for the control of postoperative pain and inflammation associated with soft-tissue and orthopedic surgery in dogs.

Contraindications: Dogs with known hypersensitivity to firocoxib should not receive PREVICOX.

Warnings: Not for use in humans. Keep this and all medications out of the reach of children. Consult a physician in case of accidental ingestion by humans.

For oral use in dogs only. Use of this product at doses above the recommended 2.27 mg/lb (5.0 mg/kg) in puppies less than seven months of age has been associated with serious adverse reactions, including death (see Animal Safety). Due to tablet sizes and scoring, dogs weighing less than 12.5 lb (5.7 kg) cannot be accurately dosed.

All dogs should undergo a thorough history and physical examination before the initiation of NSAID therapy. Appropriate laboratory testing to establish hematological and serum baseline data is recommended prior to and periodically during administration of any NSAID. **Owners should be advised to observe for signs of potential drug toxicity (see Adverse Reactions and Animal Safety) and be given a Client Information Sheet about PREVICOX Chewable Tablets.**

For technical assistance or to report suspected adverse events, call 1-877-217-3543.

Precautions: This product cannot be accurately dosed in dogs less than 12.5 pounds in body weight. Consider appropriate washout times when switching from one NSAID to another or when switching from corticosteroid use to NSAID use.

As a class, cyclooxygenase inhibitory NSAIDs may be associated with renal, gastrointestinal and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Dogs that have experienced adverse reactions from one NSAID may experience adverse reactions from another NSAID. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully approached and monitored. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such anti-prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Since NSAIDs possess the potential to produce gastrointestinal ulceration and/or gastrointestinal perforation, concomitant use of PREVICOX Chewable Tablets with other anti-inflammatory drugs, such as NSAIDs or corticosteroids, should be avoided. The concomitant use of protein-bound drugs with PREVICOX Chewable Tablets has not been studied in dogs. Commonly used protein-bound drugs include cardiac, anticonvulsant, and behavioral medications. The influence of concomitant drugs that may inhibit the metabolism of PREVICOX Chewable Tablets has not been evaluated. Drug compatibility should be monitored in patients requiring adjunctive therapy. If additional pain medication is needed after the daily dose of PREVICOX, a non-NSAID class of analgesic may be necessary. Appropriate monitoring procedures should be employed during all surgical procedures. Anesthetic drugs may affect renal perfusion, approach concomitant use of anesthetics and NSAIDs cautiously. The use of parenteral fluids during surgery should be considered to decrease potential renal complications when using NSAIDs perioperatively. The safe use of PREVICOX Chewable Tablets in pregnant, lactating or breeding dogs has not been evaluated.

Adverse Reactions:

Osteoarthritis: In controlled field studies, 128 dogs (ages 11 months to 15 years) were evaluated for safety when given PREVICOX Chewable Tablets at a dose of 2.27mg/lb (5.0 mg/kg) orally once daily for 30 days. The following adverse reactions were observed. Dogs may have experienced more than one of the observed adverse reactions during the study.

Adverse Reactions Seen in U.S. Field Studies		
Adverse Reactions	PREVICOX (n=128)	Active Control (n=121)
Vomiting	5	8
Diarrhea	1	10
Decreased Appetite or Anorexia	3	3
Lethargy	1	3
Pain	2	1
Somnolence	1	1
Hyperactivity	1	0

PREVICOX (firocoxib) Chewable Tablets were safely used during field studies concomitantly with other therapies, including vaccines, anthelmintics, and antibiotics.

Soft-tissue Surgery: In controlled field studies evaluating soft-tissue postoperative pain and inflammation, 258 dogs (ages 10.5 weeks to 16 years) were evaluated for safety when given PREVICOX Chewable Tablets at a dose of 2.27 mg/lb (5.0 mg/kg) orally approximately 2 hours prior to surgery and once daily thereafter for up to two days. The following adverse reactions were observed. Dogs may have experienced more than one of the observed reactions during the study.

Adverse Reactions Seen in the Soft-tissue Surgery Postoperative Pain Field Studies		
Adverse Reactions	Firocoxib Group (n=127)	Control Group* (n=131)
Vomiting	5	6
Diarrhea	1	1
Bruising at Surgery Site	1	1
Respiratory Arrest	1	0
SO Crepitus in Rear Leg and Flank	1	0
Swollen Paw	1	0

**Sham-dosed (pilled)*

Orthopedic Surgery: In a controlled field study evaluating orthopedic postoperative pain and inflammation, 226 dogs of various breeds, ranging in age from 1 to 11.9 years in the PREVICOX-treated groups and 0.7 to 17 years in the control group were evaluated for safety. Of the 226 dogs, 118 were given PREVICOX Chewable Tablets at a dose of 2.27 mg/lb (5.0 mg/kg) orally approximately 2 hours prior to surgery and once daily thereafter for a total of three days. The following adverse reactions were observed. Dogs may have experienced more than one of the observed reactions during the study.

Adverse Reactions Seen in the Orthopedic Surgery Postoperative Pain Field Study		
Adverse Reactions	Firocoxib Group (n=118)	Control Group* (n=108)
Vomiting	1	0
Diarrhea	2**	1
Bruising at Surgery Site	2	3
Inappetence/ Decreased Appetite	1	2
Pyrexia	0	1
Incision Swelling, Redness	9	5
Oozing Incision	2	0

A case may be represented in more than one category.
*Sham-dosed (pilled).
**One dog had hemorrhagic gastroenteritis.

Post-Approval Experience (Rev. 2009): The following adverse reactions are based on post-approval adverse drug event reporting. The categories are listed in decreasing order of frequency by body system: Gastrointestinal: Vomiting, anorexia, diarrhea, melena, gastrointestinal perforation, hematemesis, hematachezia, weight loss, gastrointestinal ulceration, peritonitis, abdominal pain, hypersalivation, nausea
Urinary: Elevated BUN, elevated creatinine, polydypsia, polyuria, hematuria, urinary incontinence, proteinuria, kidney failure, azotemia, urinary tract infection
Neurological/Behavioral/Special Sense: Depression/lethargy, ataxia, seizures, nervousness, confusion, weakness, hyperactivity, tremor, paresis, head tilt, nystagmus, mydriasis, aggression, uveitis
Hepatic: Elevated ALP, elevated ALT, elevated bilirubin, decreased albumin, elevated AST, icterus, decreased or increased total protein and globulin, pancreatitis, ascites, liver failure, decreased BUN
Hematological: Anemia, neutrophilia, thrombocytopenia, neutropenia
Cardiovascular/Respiratory: Tachypnea, dyspnea, tachycardia
Dermatologic/Immunologic: Pruritis, fever, alopecia, moist dermatitis, autoimmune hemolytic anemia, facial/ muzzle edema, urticaria

In some situations, death has been reported as an outcome of the adverse events listed above. For a complete listing of adverse reactions for firocoxib reported to the CVM see: <http://www.fda.gov/AnimalVeterinary/SafetyHealth/ProductSafetyInformation/ucm055394.htm>

Information For Dog Owners: PREVICOX, like other drugs of its class, is not free from adverse reactions. Owners should be advised of the potential for adverse reactions and be informed of the clinical signs associated with drug intolerance. Adverse reactions may include vomiting, diarrhea, decreased appetite, dark or tarry stools, increased water consumption, increased urination, pale gums due to anemia, yellowing of gums, skin or white of the eye due to jaundice, lethargy, incoordination, seizure, or behavioral changes. **Serious adverse reactions associated with this drug class can occur without warning and in rare situations result in death (see Adverse Reactions). Owners should be advised to discontinue PREVICOX therapy and contact their veterinarian immediately if signs of intolerance are observed.** The vast majority of patients with drug-related adverse reactions have recovered when the signs are recognized, the drug is withdrawn, and veterinary care, if appropriate, is initiated. Owners should be advised of the importance of periodic follow up for all dogs during administration of any NSAID.

Effectiveness: Two hundred and forty-nine dogs of various breeds, ranging in age from 11 months to 20 years, and weighing 13 to 175 lbs, were randomly administered PREVICOX or an active control drug in two field studies. Dogs were assessed for lameness, pain on manipulation, range of motion, joint swelling, and overall improvement in a non-inferiority evaluation of PREVICOX compared with the active control. At the study’s end, 87% of the owners rated PREVICOX-treated dogs as improved. Eighty-eight percent of dogs treated with PREVICOX were also judged improved by the veterinarians. Dogs treated with PREVICOX showed a level of improvement in veterinarian-assessed lameness, pain on palpation, range of motion, and owner-assessed improvement that was comparable to the active control. The level of improvement in PREVICOX-treated dogs in limb weight bearing on the force plate gait analysis assessment was comparable to the active control. In a separate field study, two hundred fifty-eight client-owned dogs of various breeds, ranging in age from 10.5 weeks to 16 years and weighing from 7 to 168 lbs, were randomly administered PREVICOX or a control (sham-dosed-pilled) for the control of postoperative pain and inflammation associated with soft-tissue surgical procedures such as abdominal surgery (e.g., ovariohysterectomy, abdominal cryptorchidectomy, splenectomy, cystotomy) or major external surgeries (e.g., mastectomy, skin tumor removal <8 cm). The study demonstrated that PREVICOX-treated dogs had significantly lower need for rescue medication than the control (sham-dosed-pilled) in controlling postoperative pain and inflammation associated with soft-surgery. A multi-center field study with 226 client-owned dogs of various breeds, and ranging in age from 1 to 11.9 years in the PREVICOX-treated groups and 0.7 to 17 years in the control group was conducted. Dogs were randomly assigned to either the PREVICOX or the control (sham-dosed-pilled) group for the control of postoperative pain and inflammation associated with orthopedic surgery. Surgery to repair a ruptured cruciate ligament included the following stabilization procedures: fabellar suture and/or imbrication, fibular head transposition, tibial plateau leveling osteotomy (TPLO), and ‘over the top’ technique. The study (n = 220 for effectiveness) demonstrated that PREVICOX-treated dogs had significantly lower need for rescue medication than the control (sham-dosed-pilled) in controlling postoperative pain and inflammation associated with orthopedic surgery.

Animal Safety: In a targeted animal safety study, firocoxib was administered orally to healthy adult Beagle dogs (eight dogs per group) at 5, 15, and 25 mg/kg (1, 3, and 5 times the recommended total daily dose) for 180 days. At the indicated dose of 5 mg/kg, there were no treatment-related adverse events. Decreased appetite, vomiting, and diarrhea were seen in dogs in all dose groups, including unmedicated controls, although vomiting and diarrhea were seen more often in dogs in the 5X dose group. One dog in the 3X dose group was diagnosed with juvenile polyarthritis of unknown etiology after exhibiting recurrent episodes of vomiting and diarrhea, lethargy, pain, anorexia, ataxia, proprioceptive deficits, decreased albumin levels, decreased and then elevated platelet counts, increased bleeding times, and elevated liver enzymes. On histopathologic examination, a mild ileal ulcer was found in one 5X dog. This dog also had a decreased serum albumin which returned to normal by study completion. One control and three 5X dogs had focal areas of inflammation in the pylorus or small intestine. Vacuolization without inflammatory cell infiltrates was noted in the thalamic region of the brain in three control, one 3X, and three 5X dogs. Mean ALP was within the normal range for all groups but was greater in the 3X and 5X dose groups than in the control group. Transient decreases in serum albumin were seen in multiple animals in the 3X and 5X dose groups, and in one control animal. In a separate safety study, firocoxib was administered orally to healthy juvenile (10-13 weeks of age) Beagle dogs at 5, 15, and 25 mg/kg (1, 1, 3, and 5 times the recommended total daily dose) for 180 days. At the indicated (1X) dose of 5 mg/kg, on histopathologic examination, three out of six dogs had minimal periportal hepatic fatty change. On histopathologic examination, one control, one 1X, and two 5X dogs had diffuse slight hepatic fatty change. These animals showed no clinical signs and had no liver enzyme elevations. In the 3X dose group, one dog was euthanized because of poor clinical condition (Day 63). This dog also had a mildly decreased serum albumin. At study completion, out of five surviving and clinically normal 3X dogs, three had minimal periportal hepatic fatty change. Of twelve dogs in the 5X dose group, one died (Day 82) and three moribund dogs were euthanized (Days 38, 78, and 79) because of anorexia, poor weight gain, depression, and in one dog, vomiting. One of the euthanized dogs had ingested a rope toy. Two of these 5X dogs had mildly elevated liver enzymes. At necropsy all five of the dogs that died or were euthanized had moderate periportal or severe panzonal hepatic fatty change; two had duodenal ulceration; and two had pancreatic edema. Of two other clinically normal 5X dogs (out of four euthanized as comparators to the clinically affected dogs), one had slight and one had moderate periportal hepatic fatty change. Drug treatment was discontinued for four dogs in the 5X group. These dogs survived the remaining 14 weeks of the study. On average, the dogs in the 3X and 5X dose groups did not gain as much weight as control dogs. Rate of weight gain was measured (instead of weight loss) because these were young growing dogs. Thalamic vacuolation was seen in three of six dogs in the 3X dose group, five of twelve dogs in the 5X dose group, and to a lesser degree in two unmedicated controls. Diarrhea was seen in all dose groups, including unmedicated controls. In a separate dose tolerance safety study involving a total of six dogs (two control dogs and four treated dogs), firocoxib was administered to four healthy adult Beagle dogs at 50 mg/kg (ten times the recommended daily dose) for twenty-two days. All dogs survived to the end of the study. Three of the four treated dogs developed small intestinal erosion or ulceration. Treated dogs that developed small intestinal erosion or ulceration had a higher incidence of vomiting, diarrhea, and decreased food consumption than control dogs. One of these dogs had severe duodenal ulceration, with hepatic fatty change and associated vomiting, diarrhea, anorexia, weight loss, ketonuria, and mild elevations in AST and ALT. All four treated dogs exhibited progressively decreasing serum albumin that, with the exception of one dog that developed hypoalbuminemia, remained within normal range. Mild weight loss also occurred in the treated group. One of the two control dogs and three of the four treated dogs exhibited transient increases in ALP that remained within normal range.



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Texas nurse is Ebola-free; healthy dog returned to her

A nurse and her Cavalier King Charles both tested negative for the disease throughout their quarantines. *By Julie Scheidegger*

Free and clear post-quarantine, Bentley, a Cavalier King Charles spaniel, reunited with his owner, Nina Pham, in October after both were declared Ebola-free. Pham exited her own treatment and quarantine for the disease first at the National Institutes of Health's Clinical Center in Bethesda, Maryland. Anxious to see Bentley, the emotional reunion was covered extensively by the media as a success story of the 2014 Ebola outbreak.

Cameras captured Bentley's veterinarians and caretakers celebrat-

testing began, Eleanor Green, DVM, DACVIM, DABVP, dean of veterinary medicine at the University of Texas A&M College of Veterinary Medicine and Biomedical Sciences, said the experts assembled to treat Bentley did not expect the dog to show clinical illness, but they were handing him with an abundance of caution. "They're treating him as if he's shedding virus even though we're hoping he isn't," Green said.

Since public health officials lack sufficient research to rule out dogs

animal," Green said.

The way Bentley is handled is also important for human medicine. "We know people will put their own lives at risk in the interest of their animals," Green said. "We don't want people to be reluctant to report illness out of fear for their animals."

Green says the circumstances of this outbreak underscore the importance of One Health initiatives. "We can't take care of people without taking care of animals," she said. "That's the only way it's going to work."

Pham and Bentley's reunion was celebrated as a great success as Pham is the first person to contract the virus in the United States. A nurse at Texas Health Presbyterian Hospital in Dallas, Pham contracted the virus while caring for Liberian Thomas Eric Duncan, who succumbed to the virus Oct. 8. After being released from quarantine and declared Ebola-free by doctors, Pham was given a hero's welcome at the Oval Office, even receiving a hug from President Barack Obama.

Bentley received much pomp and circumstance when he exited quarantine as well. He left the care of his veterinarians healthy, famous and with a basket of dog toys. **dvm360**

"We know people will put their own lives at risk in the interest of their animals. We don't want people to be reluctant to report illness out of fear for their animals."

— Eleanor Green, DVM, DACVIM, DABVP

ing with Bentley and bathing him in preparation for his quarantine farewell. Photos and videos of Bentley first seeing Pham and her family are posted on the Dallas Animal Service's Facebook page as well. Pham could hardly hold onto the young dog as he licked everyone's faces.

Bentley and Pham were separated Oct. 10 after Pham self-reported symptoms to Dallas health officials and subsequently tested positive for Ebola. Possibly exposed to the virus, Bentley was placed in isolation. His monitoring and care was coordinated by a host of public health and veterinary health groups. University of Texas A&M College of Veterinary Medicine and Biomedical Sciences Veterinary Emergency Team leaders Wesley Bissett, DVM, PhD, and Deb Zoran, DVM, MS, PhD, treated and tested Bentley during his quarantine.

The dog was tested multiple times for Ebola during his 21-day isolation. All tests—PCR tests of blood, urine and feces—came back negative. As

spreading Ebola, Green said a large pool of experts had been assembled to come up with answers for Bentley. Texas A&M, which offers the only veterinary college in the state, worked in partnership with the City of Dallas Animal Services, the Texas Animal Health Commission, the Texas Department of State Health Services, the American Veterinary Medical Association (AVMA) and the Centers for Disease Control (CDC), to oversee Bentley's veterinary care and isolation. "Bentley is the first Ebola exposed dog in the U.S. What we do we have to do thoughtfully and carefully," she said.

U.S. health officials chose to handle Bentley's case differently than Spanish officials who euthanized the pet of nurses' assistant Teresa Romero Ramos—the first person to contract Ebola outside of Africa. Instead, Bentley was quarantined, cared for and monitored. The information learned from Bentley is vitally important to public health. "This won't be the last Ebola-exposed person who owns an



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Reference: 1. Guaguere E, Bensignor E, Carlotti DN, et al. Clinical practice guidelines on the best use of topical glucocorticoids in canine dermatology. *Prat Med Chir Anim Comp*. 2011;46:S1-S20.

See brief summary on page 10.

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PENNSYLVANIA

Penn veterinary professor studies parasite involvement in schizophrenia cases

Toxoplasma gondii may be linked to one-fifth of cases, study finds.

About one-fifth of schizophrenia cases may involve the parasite *Toxoplasma gondii*, according to Gary Smith, BA Honors, DPhil, Cert Ed, professor of population biology and epidemiology at the University of Pennsylvania's School of Veterinary Medicine. Smith has used epidemiological modeling

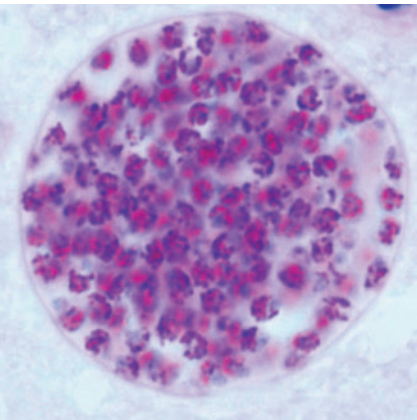


Gary Smith

methods to determine the proportion of cases that may be linked to infection with the parasite, according to a university release. His study was published in the *Journal of Preventive Veterinary Medicine*.

In the United States just over one-fifth of the population is infected with *T. gondii*. Though it has been believed that most healthy people don't see adverse effects, studies have found evidence of a negative impact, including an association with schizophrenia because the parasite is found in the brain as well as in the muscles. Other studies have found that some antipsychotic drugs can stop the parasite from reproducing, and studies in mice, rats and people have shown that infection triggers changes in behavior and personality, according to the release.

To investigate this connection Smith calculated the population attributable fraction (PAF), a metric used to determine how important a risk factor might be. In this case the PAF is the "proportion of schizophrenia diagno-



>>> Gary Smith, BA Honors, DPhil, Cert Ed, professor at the University of Pennsylvania's School of Veterinary Medicine, studied the correlation between *T. gondii* infection above and schizophrenia.

ses that would not occur in a population if *T. gondii* infections were not present," Smith says. In some countries the prevalence of *T. gondii* is much higher, and there is also a higher incidence of schizophrenia, Smith notes.

State ROUNDUP

A look at the world of animal health

ILLINOIS

Orthopedic surgeons at the University of Illinois Veterinary Teaching Hospital in Urbana are using images captured through computed tomography (CT) to print 3D models used for planning surgeries, according to a university release.

Karanvir Aulakh, BVSC, MS, DACVS, used the technology to treat a Labrador born with a condition that caused the femurs of its rear legs to be bowed and displace the kneecaps. Radiographs were taken of each leg to complete measurements of the angles of each bone and then a CT scan was completed to make the 3D image the printer would use.

The procedure was planned using the measurements and the models. To allow time for strength to be regained only one leg was operated on at a time. Aulakh made a cut into the bone and a wedge of bone was removed to straighten it. Then hardware was placed to help stabilize the bone for weight bearing. After the bone repair was completed, the kneecap displacement was addressed.

At the eight-week recovery check the dog had made enough progress for the second leg to be corrected.

NORTH CAROLINA

A state audit says the North Carolina Veterinary Medical Board (NCVMB) doesn't adequately follow

up on inspection violations or licensing requirements, according to Raleigh-Durham-Fayetteville news website WRAL.com.

The North Carolina veterinary board inspects practices every two years to check controlled substance management, radiation safety and record keeping, among other items. Practice owners must submit written accounts of corrected violations. The audit found that inspections don't take into account severity of violation and there are no criteria for reinspection, according to WRAL.com. Another area the board was lax on is checking the accuracy of continuing education hours veterinarians report. The board's executive director,

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CONTRAINDICATIONS

Do not use in dogs with known tympanic membrane perforation.

EASOTIC® suspension is contraindicated in dogs with known or suspected hypersensitivity to corticosteroids, imidazole antifungals, or aminoglycoside antibiotics.

WARNINGS

Human Warnings: Not for use in humans. Keep this and all drugs out of reach of children.

Humans with known or suspected hypersensitivity to hydrocortisone, aminoglycoside antibiotics, or azole antifungals should not handle this product.

Animal Warnings: As a class, aminoglycoside antibiotics are associated with ototoxicity, vestibular dysfunction and renal toxicity. The use of EASOTIC® suspension in a dog with a damaged tympanic membrane can result in damage to the structures of the ear associated with hearing and balance or in transmission of the infection to the middle or inner ear. Immediately discontinue use of EASOTIC® suspension if hearing loss or signs of vestibular dysfunction are observed during treatment (see **ADVERSE REACTIONS**).

PRECAUTIONS

Do not administer orally.

Concurrent administration of potentially ototoxic drugs should be avoided.

Use with caution in dogs with impaired hepatic or renal function (see **ANIMAL SAFETY**).

Long-term use of topical otic corticosteroids has been associated with adrenocortical suppression and iatrogenic hyperadrenocorticism in dogs (see **ANIMAL SAFETY**).

The safe use of EASOTIC® suspension in dogs used for breeding purposes, during pregnancy, or in lactating bitches, has not been evaluated.

ADVERSE REACTIONS

In a field study conducted in the United States, there were no adverse reactions reported in 145 dogs administered EASOTIC® suspension.

In foreign market experience, reports of hearing loss and application site erythema have been received. In most reported cases, the hearing loss and erythema were transient and resolved with discontinuation of EASOTIC® suspension.

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ANIMAL SAFETY

Aural administration of EASOTIC® suspension to 12 week old Beagle dogs at 1, 3, and 5 times the recommended dose (1mL/ear/day) for 15 days (three times the treatment length) was associated with alterations of the hypothalamic-pituitary-adrenal axis as evidenced by the ACTH stimulation results. Other findings considered to be related to treatment include the development of aural hyperemia; the presence of renal tubular crystals and possibly renal tubular basophilic atrophy; elevated liver weights; the development of otitis externa and media; and elevations in alanine aminotransferase, alkaline phosphatase, total protein, albumin, and cholesterol levels.

STORAGE INFORMATION: Store at temperatures between 20° C-25° C (68° F-77° F), with excursions permitted between 15° C-30° C (59° F-86° F).

HOW SUPPLIED: EASOTIC® suspension is supplied in a polyethylene canister, with a soft applicator canula.

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Thomas Mickey, said the board agreed with the auditor's recommendation to adopt a formal assessment procedure for inspections and a formal process for auditing CE hours reported. Both processes would be implemented by 2015, according to WRAL.com

OREGON

Oncologists at Veterinary Cancer and Surgery Specialists in Milwaukie, Oregon, are looking for participants for a clinical trial for a new drug for dogs with lymphoma, according to the website Oregon-Live.com. The study aims to test effectiveness of a monoclonal antibody, or antibody produced by a laboratory-grown cell clone, for treating dogs with intermediate to high-grade T-cell lymphoma.

Prospective participants will be screened before enrollment to confirm eligibility. Pet owners will be responsible for paying for initial consultation, bloodwork, urinalysis and radiographs. After acceptance to the study all procedures and treatment will be funded by the study. The study is part of a nationwide clinical trial funded by Aratana Therapeutics in coordination with Animal Clinical Investigation.

For more information, including qualifying criteria, call (503) 908-1492 or visit vcspdx.com

TEXAS

Susan Culp, DVM, a lead veterinarian with the Texas Animal Health Commission, has been named recipient of the 2014 Southwest Veterinary Symposium (SWVS) Visionary Award, according to a commission release. The award honors an individual who is recognized in the profession and actively engaged in private, public or corporate veterinary practice and whose contributions elevate the standards and goals of veterinary medicine.

The SWVS is a partnership between the Arkansas, Louisiana, New Mexico, Oklahoma and Texas veterinary medical associations that provides CE for veterinary professionals.

WASHINGTON

The Washington State Department of Agriculture (WSDA) has named a

new state veterinarian, according to a press release. Joe Baker, DVM, who joined the WSDA on Nov. 3, comes with almost 40 years of experience. He served on the New Mexico livestock board beginning in 2006 and also headed the New Mexico Food Safety, Meat and Poultry inspection division, worked as a field veterinarian and served

as interim state veterinarian for a period of time. Baker completed both his undergraduate and veterinary degrees at Washington State University and completed an equine reproduction residency at the University of California-Davis, according to the release. Baker will oversee WSDA's animal health program. [dvm360](#)



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Accused Fort Worth veterinarian indicted, suspended in cruelty case

DVM faces jail time in addition to veterinary board's order. *By Katie James*

The Texas State Board of Veterinary Medical Examiners has suspended the license of Millard Lucien Tierce, DVM, 71, the Fort Worth veterinarian accused of keeping dogs alive months or years after he told their owners the pets had been euthanized. A week after the order of suspension, a Tarrant County grand jury returned a three-count indictment against Tierce that could result in jail time.



Dr. Millard Lucien Tierce

Complaints against Tierce arose in April when the Harris family of Aledo, Texas, filed a complaint with the board after being told their 4-year-old Leonberger, Sid, was alive at the clinic months after they thought the dog had been euthanized due to a congenital spinal defect. During their investigation, police and board investigators found unsanitary conditions, bugs and other patients that clients thought had been euthanized.

In an October 21 meeting the board discussed the complaints brought against Tierce and found him in violation of rules in the following areas, according to the order document:

- > Professional standard of care
- > Honesty, integrity and fair dealing
- > Patient record keeping
- > Patient records release and charges
- > Minimum security for controlled substances
- > Duty to cooperate with board
- > Maintenance of sanitary premises

In addition to the five-year suspension, Tierce must undergo an evaluation by a mental health professional and receive mental health counseling. He must also complete 20 hours of CE in practice management and record keeping in addition to the yearly



>>> Sid, the Leonberger found alive months after he was thought to be euthanized.

CE required to keep his license, pay \$1,000 as an administrative penalty, and pass the Texas veterinary jurisprudence exam, according to the board order. Tierce signed the order at the meeting, putting the terms into effect. Failing to comply with the terms, violating the Texas Veterinary Licensing Act, or refusing to cooperate with the board could result in further disciplinary action, including revocation of Tierce's license.

Marian Harris, Sid's owner, spoke at the board meeting, saying she was disappointed with the decision, asking what it takes for a license to be revoked in the state of Texas. "My concern is that if he is in proximity to animals, then he will treat them. If he's managing a clinic, he will be treating animals. He should not be allowed to own a clinic," she told the Fort Worth *Star-Telegram*.

In Texas, a veterinarian whose license has been suspended may still own a practice and work in the office in an administrative capacity, according to Loris Jones, public information officer for the board. The veterinarian may not, however, do anything considered to be the practice of veterinary medicine as defined in the Veterinary Licensing Act.

According to the Texas Occupation Code, a person is subject to denial of license or disciplinary action if, among other things:

- > The person engages in dishonest or illegal practices in, or connected with the practice of, veterinary medicine or equine dentistry
- > The person engages in practices or conduct that violates the board's rules of professional conduct
- > The person commits gross malpractice or a pattern of acts that indicate consistent malpractice, negligence or incompetence in the practice of veterinary medicine.

The Harrises have filed a \$1 million lawsuit against Tierce, which is currently ongoing. Other former clients are also suing Tierce after discovering that their pets were kept alive rather than euthanized.

In addition to the board's discipline and civil suits, Tierce is also facing criminal charges. The grand jury's indictment, which was filed on October 29, charges Tierce with three separate counts: one count of theft (\$1,500 to \$20,000), one count of misapplication of fiduciary property, and a third count of animal cruelty, according to a district attorney press release. The first two counts are felonies in Texas, punishable by six months to two years in a state jail. The third is a Class A misdemeanor punishable by up to 1 year in jail. Tierce remains free on \$10,000 bail while awaiting trial. At this time no court date has been set. [dvm360](#)



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Brother now charged with the death of veterinarian and their parents in Ky.

Ryan Champion faces four capital murder charges, one count of kidnapping in deaths of family and initial suspect. *By Julie Scheidegger*

Ryan Champion, brother of murdered veterinarian Emily Champion, has been charged with four counts of capital murder in the deaths of Emily, their parents and Vito Riservato, the initial first suspect in the case, who was found shot to death at the scene along with the other victims.

Trooper Jay Thomas of the Kentucky State Police indicated days after the murder, which took place in the elder Champions' Cadiz, Kentucky, home on Oct. 26, that detectives



Ryan Champion

believed Ryan Champion knew Riservato longer than the brief encounter he told the media.

Champion, 36, was quick to take to Facebook and the media after his sister and parents were murdered that Sunday morning. He recounted to WSMV Nashville that he was "able to turn the tables" and overpower Riservato, making Champion the sole survivor of the encounter. It seems Kentucky State Police have now turned the tables on Champion. Along with the capital murder counts, Champion was also charged with one count of capital kidnapping. Local reports citing court documents say Champion bound his sister's hands, feet and face with duct tape to inflict bodily injury upon her. Detectives charge that Champion killed all four victims with a .45 caliber handgun.

Because the investigation was ongoing, Thomas would not discuss any details of the case. He did credit the diligent work of detectives—interviews, attention to statements made the day of the murders, and the collection of evidence on scene—with Champion's arrest Oct. 31. There is enough evidence against Champion

There is enough evidence against Champion that the Kentucky attorney said the state would seek the death penalty in the case.

that Kentucky attorney G.L. Ovey said in an arraignment Nov. 3 in district court that the state would seek the death penalty in the case.

Champion told local media outlets that he and his sister were home visiting their parents. He said Emily, who worked at Baronne Veterinary Clinic Equine Medical and Surgical Facility in Sunset, Louisiana, was spending time there before starting a new job in November. But details of what actually happened are still sketchy. Initial accounts indicated that Riservato restrained Champion and his sister during the attack, and their parents returned home while the attack was happening.

Champion told WSMV, "He got close enough to me that I could turn the tables and that was it. Every minute the entire thing was going on, that's all I was waiting for. I was waiting for an opportunity." Champion was unharmed in the incident.

After Champion took to the media the day after the incident, a roommate of Riservato felt compelled to speak up as well. Ariel Lower, who introduced herself to WSMV as a longtime friend of Riservato, shared a home in Hopkinsville, Kentucky, with Riservato, his 1-year-old son and six other roommates. She contradicted Champion's statements, saying Champion and Riservato had known each other for years.

Lower told the NBC affiliate that she could tell something was wrong with Riservato the morning of the murders. She said he had been let go from his job and for the past three weeks had been struggling to provide for his son. Riservato had mentioned he was on call for a welding or molding job in Cadiz. Lower also shared that more than a week earlier, Riservato told her someone had approached him about killing someone for what she called an "extreme" amount of money. Champion's arrest now makes Riservato both victim and suspect.

Champion was processed at the Christian County Detention Center on a \$1 million bond Oct. 31 as the community prepared for his family's joint funeral Nov. 2 at the Trigg County High School.

Champion was the notable absence as hundreds of people filled the school gymnasium for the funeral. "They were very well known," Thomas says of the Champion family. "There was a very large turnout for the funeral." Lindsey Champion, 62, had spent 38 years working for Farm Credit Services in Hopkinsville, Kentucky, and served as an elder, lay speaker and Sunday School teacher at Cadiz Church of Christ. His wife, Joy, 60, was a teacher at Trigg County Elementary for more than 30 years and taught Sunday School at Cadiz Church of Christ. Emily Champion, 31, was a veterinarian practicing in Louisiana who specialized in equine medicine. She graduated from Auburn University College of Veterinary Medicine in 2008.

A grand jury was scheduled to hear the state's case against Ryan Champion on Nov. 12. If the grand jury indicts Champion, a preliminary hearing would be scheduled the following day. It may take at least a year for the case to go to trial. [dvm360](#)

Four dead dogs, more in poor condition, found at Ill. clinic

Veterinarian, employee charged with 13 counts each for animal cruelty and violation of owner's duties.

Four dogs were found dead along with several others—including one cat—in poor condition Sept. 21 at Dolton Animal Hospital in Dolton, Illinois. An animal cruelty investigation is underway as multiple



>>> Four dogs were found deceased and others were in filthy conditions at the Dolton Animal Hospital in Dolton, Illinois.

charges have been filed against clinic owner Amardeep Sangha, DVM, and animal hospital employee Sharon Cargile.

According to the Cook County Sheriff's Department, a Dolton police officer alerted authorities after dropping off a dog at the facility, which has a municipal contract to house stray animals. The officer reported he observed what appeared to be dead dogs and other animals in poor condition at the clinic. No animal hospital employees were at the facility at the time. The Sheriff's Animal Crimes Unit investigators found four deceased dogs at the facility and took possession of the remaining eight dogs and one cat found in poor condition.

A representative with the sheriff's office said the animals confiscated from the facility were in varied conditions. One dog had to undergo surgery; another was treated for an infection; others were emaciated; and some were considered to be in fair condition. All are in the custody of the Animal Welfare League in Chicago and are said to be improving. Officials are still trying to sort out which animals are owned and un-owned: None have been released at this time.

Sangha was arrested and charged with five counts of misdemeanor cruelty to animals and eight misdemeanor counts of violation of owner's duties. Cargile, who was taken into custody at the animal hospital, received the same charges. More charges may be filed as the investigation continues. In Illinois, a felony charge is only issued in the case of aggravated animal cruelty. Civil charges may be forthcoming as well.

The Illinois Department of Financial and Professional Regulation still lists Sangha's veterinary license status as "active" online. It also notes that he has never been disciplined. Sangha and Cargile were scheduled to appear in court Nov. 19. [dvm360](#)

IN BRIEF | News

Pets Best names top feline illnesses

Pets Best Insurance Services recently released a list of the top five most common cat illnesses based on the number of claims it's received. The company says these five health issues represent approximately 30 percent of the agency's total claims for cats across the nation. The conditions are:

1. Chronic kidney failure
2. Hyperthyroidism
3. Allergies
4. Cancer
5. Diabetes

Pets Best's Feline Illness plan covers the diagnosis and treatment of chronic kidney failure,

hyperthyroidism, cancer, diabetes, pancreatitis and more.

"Indoor cats may not experience emergency accidents as often as other animals, but that doesn't mean they never fall ill or need treatment," says Jack Stephens, DVM, founder of Pets Best. [dvm360](#)

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Introducing the new soft and comfortable BUSTER Body Suit for protection and comfort after surgery or in case of skin disease. It is an ideal solution for patients recovering from surgery or minor injuries or with tender areas caused by excessive licking, biting or chewing.

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Nature's Call

- Undo press studs and the velcro tabs and pull back the fabric
- Roll up the fabric under the abdomen and above the back

The BUSTER Body Suit for dogs is available in 9 sizes from XXXS to XXXL. And for cats in 4 sizes from XXXS to S.



Developed for
veterinary use by
KRUUSE in Denmark



Man goes on stabbing spree at two hospitals in Washington state

Victims—a veterinarian and veterinary staff member—survive with non-life-threatening injuries. *By Julie Scheidegger*

Armed with kitchen knives, Charles Anthony Smith, 57, stabbed two people at two different Bellingham, Washington, veterinary clinics the morning of Oct. 9, angry because of the death of his cat. Both victims—a female veterinarian at Maplewood Animal Hospital and a veterinary team member at Fountain Veterinary Hospital—survived the attack. Smith was taken into police custody shortly afterward and was charged with two counts of first-degree assault and two counts of possessing weapons capable of producing bodily harm.

According to the Bellingham Police Department, Smith entered Maplewood Animal Hospital soon after the clinic opened at about 8:15 that morning. His first victim, a female veterinarian, was greeting him as he came in the door and attacked. She sustained a wound to her upper chest before

forcing Smith to disengage. “The first victim was able to disarm the guy,” Detective Sergeant Mike Scanlon says. She in turn incurred a defensive hand wound that was treated at the scene.

The victim was familiar with Smith. He was a client of the hospital whose cat had died the day before. She was able to disengage from Smith and retreat to the back of the business. Smith then pulled out a second kitchen knife and threatened front desk staff before fleeing from the area in his vehicle, the police report says.

As officers searched for the assailant, a 911 call came from Fountain Veterinary Hospital located less than two miles southeast of Maplewood Animal Hospital and where Smith had been a client in mid-September. “[Smith] had just walked into the business and, without saying a word, had stabbed an employee,” the report states.

He stabbed a female veterinary employee in the neck near her trachea and fled the scene. Scanlon says the wound was above the collarbone on the victim’s left side and made with the tip of the knife. “She was able to lean back as it was coming in,” Scanlon says, protecting her from a more serious injury.

Just 10 minutes between the two attacks, officers began actively calling all local veterinary clinics to alert them about Smith. They told them to lock their doors until police knew more. “Banks have protocol for this type of thing; a veterinary clinic doesn’t,” Scanlon says.

“We got lucky that no one was seriously injured,” he says, “and it wasn’t for lack of trying.” Both victims were alone in the front of the clinic when Smith entered. “[Employees] greeted the guy and they were attacked,” he says. There was no warning or verbal explanation.

At 8:44 a.m. an officer saw a car

matching the description of Smith’s vehicle about three miles northeast of Fountain Veterinary Hospital. Smith willingly pulled over, indicated that he was the person police were looking for and claimed he was heading to the police department to turn himself in. “He was very distraught over his cat dying,” Scanlon says. “Was he done? I can’t answer that, but he wasn’t driving toward the police department.” He said Smith wasn’t driving in the direction of his home, either. But he did give himself up easily to the officer that pulled him over and admitted to the assaults. Scanlon said he indicated he “wanted other people to feel his pain.” (See the graphic below to see the route Smith took.)

Smith was held at Whatcom County Jail. Scanlon says Smith’s other pets, reportedly some birds and kittens, are now in the custody of the local humane society. A search warrant for his vehicle was scheduled to have been served the following week.

Scanlon says there was a lot that the veterinary clinics did right in regard to the attack. It also helped that Smith fled instead of pursuing his victims. The victims were able to disengage quickly; medical training allowed colleagues to administer immediate first aid until first responders arrived and 911 was called promptly. “These folks did a great job,” Scanlon says. “We’re really pleased at how they took care of business.”

Although personnel at both clinics weren’t ready to discuss what happened, after the attack Maplewood Animal Hospital posted on its Facebook page: “Just letting you all know the doctors and staff are all OK (shaken up but OK) following the incident at the hospital today.”

Scanlon said neither clinic reported any prior behavior from Smith that would have indicated the attack. **dvm360**



Dr. Pol picked up by additional network

CW to air clips of *The Amazing Dr. Pol* as part of children's programming.

Dr. Pol could be popping up on your TV screen more than ever thanks to the CW network. As part of a new five-hour block of Saturday morning television for kids, clips of National Geographic Wild's *The Amazing Dr. Pol* will be repackaged under the name *Calling Dr.*



Dr. Jan Pol

Pol and broadcast to certain areas.

The One Magnificent Morning programming premiered Oct. 4, with hopes that socially conscious young CW viewers and their families will be inspired to explore nature's incredible national parks, learn about healthy lifestyle choices and develop a unique appreciation for our pet population and animals around the world, according to its Facebook page.

In addition to *Calling Dr. Pol*, the block contains *Rock the Park*, a show about exploring the nation's national parks, and *Dog Whisperer With Cesar Milan: Family Edition*, where dog trainer Cesar Milan works with difficult behavior cases, and more. [dvm360](#)



Exclusive report: New complaint filed against Dr. Pol

National Geographic's star veterinarian faces another investigation by the Michigan State Licensing and Regulatory Affairs Board. Learn more at [dvm360.com/DrPol](#). Don't want to miss breaking veterinary news? Subscribe to the Full Circle newsletter by visiting [dvm360.com/subscribe](#).

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In race of two veterinarians, Bill Rabon defeats Ernie Ward

First-time candidate, well-known DVM Ward says losing to Republican incumbent doesn't mean he'll stop helping.

The 2014 North Carolina State Senate race found two veterinarians going head to head. Ernie Ward, DVM, a first-time political candidate, practicing veterinarian and clinic owner for more than 20 years,



Dr. Ernie Ward

speaker, author, lecturer and *dvm360* contributor, took on Republican incumbent, Bill Rabon, DVM, a partner in Brunswick Animal Hospital, Southport Animal Hospital and Oak Island Animal Hospital. Rabon secured his third

term with 57 percent of the vote.

Rabon joined other Republicans across the country in celebrating victories on social media on Election Day. He posted his gratitude to supporters on his Facebook page. Ward took to Twitter the day after: "Thank you to the thousands of supporters of my campaign. Each day is an opportunity to make something better."

Ward expanded his concession in a Facebook post: "We're going to spend the next several days analyzing the results and making decisions. Our goal is to create a strategy that keeps education, seniors, veterans and working families, property rights, healthcare and the environmental and animal welfare issues we were fighting for in the public's mind and heart."

On the day after elections, Ward told supporters, "Losing an election doesn't mean we stop helping."

Ward told *dvm360* in March that Rabon's opposition to a bill to regulate

commercial dog breeding catalyzed his decision to run this year: "If it was just about puppy mills I'd continue to advocate for animal welfare like I always have, but it's about more than that. Mainly, the state of public schools, jobs and the environment."

Rabon ran on his past efforts with transportation and tax reform as well as initiatives related to job creation and education. [dvm360](#)



More on these polls

To see Ward's work on pet obesity and the well-being of veterinarians and their clinics, go to dvm360.com/ernieward.

To keep up with Rabon's work in the North Carolina Senate, follow him on Twitter at [@SenBillRabon](#).

AVMA says veterinary legislation will see little disruption from Republican shift in Congress

D.C. group will focus on what can be done during 'lame duck' session.

While the 24-hour news cycle buzzed about the impact of a new Republican Congress last month, those at the Governmental Relations Division of the American Veterinary Medicine Association (AVMA) say the change will only slightly impact their efforts, because most legislative veterinary efforts on their part are bipartisan issues.

Communications manager Victoria Broehm, author of the AVMA's blog "2014 Midterm Election: What does the outcome mean for veterinary medicine?" writes that one of the most notable changes will be the replacement of Sen. Harry Reid (D-Nev.) with Sen. Mitch McConnell (R-Ky.) as the Senate majority leader.

"The Senate majority leader is primarily tasked with not only speaking on behalf of their party, but managing and scheduling the legislative busi-

ness of the Senate, which means they can prioritize which bills make it to the floor," she writes. Legislative items such as repeal of the Affordable Care Act's medical-device tax that could garner some Democratic support may have a better chance of passage under a Republican majority.

Leadership of many individual committees will also change. "With new committee leadership comes its own set of rules and agendas, meaning once again at the committee level we'll see chairpeople who choose to tackle certain legislation right away, while slowing the process, if not halting it, for other bills. That's just politics," she writes.

Before the 114th Congress formally begins Jan. 3, 2015, the AVMA has promised not to lose sight of what can still be accomplished in the remainder of the session. "During the

lame duck session, the AVMA will be working on finalizing fiscal 2015 funding for key programs, advancing the Veterinary Medicine Loan Repayment Program Enhancement Act as part of any tax legislation that is implemented, and urging passage of both the Marketplace Fairness Act and the Prevent All Soring Tactics (PAST) Act," Broehm writes. If those bills don't pass in the next few weeks, they'll die despite momentum gained during the past two years.

One thing that didn't change with the election is the bipartisan leadership of the U.S. House of Representatives Veterinary Medicine Caucus. Kurt Schrader (D-Ore.) and Ted Yoho (R-Fla.) both won reelection. The pair were co-sponsors of the Veterinary Medicine Mobility Act that Schrader introduced and Congress passed during this session. [dvm360](#)

Introducing FDA Approved



Simbadol™
(buprenorphine injection)



Once-daily



24-hour



surgical pain control



- The first and only buprenorphine **FDA approved for cats**
- Demonstrated safety and efficacy in **more than 200 cats** treated with SIMBADOL
- Up to 3 once-daily subcutaneous doses for a **total of 72 hours of pain control**

INDICATION: SIMBADOL is indicated for the control of postoperative pain associated with surgical procedures in cats.

IMPORTANT SIMBADOL (buprenorphine injection) SAFETY INFORMATION

WARNINGS, PRECAUTIONS and CONTRAINDICATIONS: Due to serious human safety and abuse concerns, including physical or psychological dependence, life-threatening respiratory depression and additive CNS depressant effects, read the full prescribing information before using this drug, including the complete Boxed Warning. **Not for use in humans. Hospital staff should be trained in the handling of potent opioids and should avoid accidental exposure.** For subcutaneous (SQ) injectable use in cats. Opioid excitation has been observed up to 8 hours after anesthetic recovery. Use with caution in cats with impaired hepatic function. SIMBADOL has not been evaluated in breeding, pregnant, or lactating cats, in cats younger than 4 months of age or moribund cats. Do not use in cats with known hypersensitivity to buprenorphine hydrochloride or any of the components of SIMBADOL, or known intolerance to opioids.

ADVERSE REACTIONS: In two controlled field studies, the most frequent adverse reactions with SIMBADOL were hypotension, tachycardia, hypothermia, hyperthermia, hypertension, anorexia, and hyperactivity. Less frequent but serious adverse reactions included two deaths following apnea and two reports of presumptive post-anesthetic cortical blindness. See the full prescribing information for a complete list and additional details of adverse reactions for each field study.

See the Brief Summary of full prescribing information, including the complete Boxed Warning for human safety, on following page.

1.8 mg/mL

For subcutaneous use in cats

BRIEF SUMMARY: Before using SIMBADOL, please consult the full prescribing information, a summary of which follows.

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

HUMAN SAFETY WARNING

Abuse Potential

SIMBADOL contains buprenorphine (1.8 mg/mL), an opioid agonist and Schedule III controlled substance with an abuse potential similar to other Schedule III opioids. Buprenorphine has certain opioid properties that in humans may lead to dependence of the morphine type. Abuse of buprenorphine may lead to physical dependence or psychological dependence. The risk of abuse by humans should be considered when storing, administering and disposing of SIMBADOL. Persons at increased risk for opioid abuse include those with a personal or family history of substance abuse (including drug or alcohol abuse or addiction) or mental illness (suicidal depression).

Life-Threatening Respiratory Depression

Respiratory depression, including fatal cases, may occur with abuse of SIMBADOL.

Additive CNS Depressant Effects

SIMBADOL has additive CNS depressant effects when used with alcohol, other opioids, or illicit drugs that cause central nervous system depression.

Accidental Exposure

Because of the potential for adverse reactions associated with accidental injection, SIMBADOL should only be administered by veterinarians or veterinary technicians who are trained in the handling of potent opioids.

See Human Safety for detailed information.

INDICATION: SIMBADOL is indicated for the control of postoperative pain associated with surgical procedures in cats.

DOSAGE AND ADMINISTRATION: The dosage of SIMBADOL is 0.24 mg/kg (0.11 mg/lb) administered subcutaneously once daily, for up to 3 days. Administer the first dose approximately 1 hour prior to surgery. Do not dispense SIMBADOL for administration at home by the pet owner (see Human Safety).

CONTRAINDICATIONS: SIMBADOL is contraindicated in cats with known hypersensitivity to buprenorphine hydrochloride or any of the components of SIMBADOL, or known intolerance to opioids.

WARNINGS: For subcutaneous (SQ) injectable use in cats.

Human Safety: Not for use in humans. Keep out of reach of children.

Because of the potential for adverse reactions, hospital staff should avoid accidental exposure and contact with skin, eyes, oral or other mucous membrane during administration. SIMBADOL contains buprenorphine, a mu opioid partial agonist and Schedule III controlled substance with an abuse potential similar to other Schedule III opioids. SIMBADOL can be abused and is subject to misuse, abuse, addiction and criminal diversion. SIMBADOL should be handled appropriately to minimize the risk of diversion, including restriction of access, the use of accounting procedures, and proper disposal methods, as appropriate to the clinical setting and as required by law. Abuse of SIMBADOL poses a hazard of overdose and death. This risk is increased with concurrent abuse of alcohol and other substances including other opioids and benzodiazepines. Buprenorphine has been diverted for non-medical use into illicit channels of distribution. All people handling opioids require careful monitoring for signs of abuse. Drug abuse is the intentional non-therapeutic use of a prescription drug for its rewarding psychological or physiological effects. Abuse of opioids can occur in the absence of true addiction. Naloxone may not be effective in reversing respiratory depression produced by buprenorphine. The onset of naloxone effect may be delayed by 30 minutes or more. Doxapram hydrochloride has also been used as a respiratory stimulant.

PRECAUTIONS: Hyperactivity (opioid excitation) has been observed up to 8 hours after anesthetic recovery (see ADVERSE REACTIONS). Safety has not been evaluated in moribund cats. Use in such cases should be based on the risk-benefit assessment of the veterinarian. Use with caution in cats with impaired hepatic function. The use of SIMBADOL has not been evaluated in breeding, pregnant, or lactating cats, or in cats younger than 4 months of age.

ADVERSE REACTIONS: In two controlled field studies, the following adverse reactions were reported.

Adverse Reactions in Two Field Studies

Adverse Reaction ^a	SIMBADOL (N = 224)		Control (N = 226)	
	During Surgery ^b	After Surgery	During Surgery ^b	After Surgery
Hypotension ^c	68 (30.4%)	51 (22.8%)	60 (26.5%)	40 (17.7%)
Tachycardia ^d	55 (24.6%)	73 (32.6%)	30 (13.3%)	44 (19.5%)
Hypothermia ($\leq 98.0^{\circ}\text{F}$)	38 (17.0%)	1 (0.4%)	47 (20.8%)	0
Hyperthermia ($\geq 103.0^{\circ}\text{F}$)	1 (0.4%)	91 (40.6%)	0	33 (14.6%)
Hypertension ^e	10 (4.5%)	40 (17.9%)	17 (7.5%)	18 (8.0%)
Anorexia	0	40 (17.9%)	0	35 (15.5%)
Hyperactivity	0	26 (11.6%)	0	11 (4.9%)
Reduced SpO ₂ ($\leq 90\%$)	8 (3.6%)	1 (0.4%)	11 (4.9%)	0
Bradycardia (≤ 90 beats/min)	5 (2.2%)	1 (0.4%)	4 (1.8%)	1 (0.4%)
Tachypnea (≥ 72 breaths/min)	0	5 (2.2%)	1 (0.4%)	6 (2.7%)
Arrhythmia	1 (0.4%)	1 (0.4%)	2 (0.9%)	0
Blindness	0	2 (0.9%)	0	1 (0.4%)
Apnea/Death	1 (0.4%)	1 (0.4%)	0	0
Ataxia	0	1 (0.4%)	0	0
Hyperesthesia	0	1 (0.4%)	0	0

a. Cats may have experienced more than one type or occurrence of an adverse reaction. Cats experiencing the same reaction both during and after surgery are presented in both time periods.

b. During surgery is the time from the administration of the anesthetic induction agent until discontinuation of the gas anesthetic.

c. Hypotension is defined as a mean blood pressure of ≤ 60 mmHg during surgery and ≤ 90 mmHg after surgery.

d. Tachycardia is defined as a heart rate of ≥ 180 beats per minute during surgery and ≥ 200 beats per minute after surgery.

e. Hypertension is defined as a mean blood pressure of ≥ 120 mmHg during surgery and ≥ 160 mmHg after surgery.

To report suspected adverse events, contact Abbott Animal Health at 1-888-299-7416, FDA at 1-888-FDA-VETS or FDA online at <http://www.fda.gov/AnimalVeterinary/SafetyHealth>.

EFFECTIVENESS: The effectiveness of SIMBADOL was demonstrated in two randomized, masked, placebo-controlled, multi-site field studies involving client-owned cats of various breeds. A descriptive, interactive pain assessment system was used by the trained assessor over the 72-hour post-operative period to determine pain control, and treatment success was defined as a cat that completed the 72-hour post-operative period without rescue analgesia. A statistically significant difference ($P \leq 0.005$) in the number of successes in the treatment group over the placebo control group was observed. The results of two field studies demonstrate that SIMBADOL is effective and has an acceptable safety margin for the control of postoperative pain in cats.

HOW SUPPLIED: SIMBADOL (buprenorphine injection) is supplied in a carton containing one 10 mL amber glass vial. Each multidose vial contains 1.8 mg/mL of buprenorphine.

NADA 141-434, Approved by FDA
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Product of United Kingdom

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Purdue launches veterinary pharmacy residency program

School will certify pharmacists as veterinary pharmaceutical experts.

Purdue University will soon become the third institution to offer a residency program in veterinary clinical pharmacy practice. The program will open with one residency position in July 2015.

Brian Shepler, director of advanced pharmacy practice experiences and assistant dean for experiential education in Purdue's College of Pharmacy, says in a university release that demand for pharmacists trained in veterinary therapeutics has increased as medicines available for pets have become more abundant. "Whether filling a prescription for Frank or Fido, a pharmacist's role is to ensure that a medication and its dosage are safe and appropriate for a patient, to check for any potentially harmful interactions and to offer advice on ways to minimize discomfort from side effects. This residency provides training to pharmacists so that they can help ensure an animal's safety and provide optimum care," he says.

According to the university, during the one-year residency a pharmacist will participate in rotations in the various departments of Purdue's Veterinary Teaching Hospital. "Residents will learn anatomy, physiology and different ways drugs are metabolized and act within different species, and to prepare high-quality, safe and effective compounded preparations for animal patients," the release states. "Residents also will learn the regulations and ethical responsibilities of drug use in animals and will gain experience in designing and performing clinical pharmacology research." The training will prepare residents for certification by the Society of Veterinary Hospital Pharmacists and to become diplomates of the International College of Veterinary Pharmacy.



>>> Wil Gwin (right), pharmacy director at Purdue's Veterinary Teaching Hospital, guides Purdue pharmacy student Jonathan Sarky as he fills a prescription during a clinical rotation in the hospital's pharmacy.

Wil Gwin, pharmacy director at Purdue's Veterinary Teaching Hospital, who helped develop the new residency program, says there is a need not just for those trained to dispense medications to animals, but for those who can prepare the medications. "There is a great variation in prescribed doses from Chihuahua to Great Dane and from dog to cat to bird or guinea pig," Gwin says in the release. "The drug manufacturers don't provide the medication in each of these doses, so many of the medications dispensed to animals must be specially prepared for each prescription."

Applicants must have a doctor of pharmacy degree and be eligible for licensure in Indiana. Those interested in applying can contact Gwin directly at wegwin@purdue.edu. **dvm360**

New diversity training center at Purdue

Certification programs available in partnership with AVMA, AAVMC.

Addressing diversity in veterinary medicine has never been more important, and a new program at Purdue is now offering veterinarians additional training in intercultural skills.

Purdue University College of Veterinary Medicine's new Center of Excellence for Diversity and Inclusion in Veterinary Medicine opened in September in partnership with the Association of American Veterinary Medical Colleges (AAVMC) and the American Veterinary Medical Association (AVMA). The center offers virtual resources and training designed to provide veterinary students, professionals and support staff with

the skills they need to be successful in an increasingly diverse world.

"This new center and the certificate programs administered by Purdue will help fulfill one of the key recommendations of the 2011 North American Veterinary Medical Education Consortium report, which emphasized that intercultural awareness was a core competency that all veterinarians should possess 'because culture and belief systems impact delivery of veterinary medical care,'" says Sandra San Miguel, Purdue's associate dean for engagement and professor of veterinary clinical sciences.

"We believe that establishing a veterinary workforce where all individuals

are inspired, supported and empowered to achieve their full potential will lead to breakthroughs in animal and public health," says Willie Reed, dean of Purdue's College of Veterinary Medicine.

Program participants will complete a series of online learning modules, as well as community engagement and cultural experiences, to enhance their skill in navigating the diversity of generations, sexual orientation, ability, gender, race and ethnicity, San Miguel says. Certificates and nine hours of continuing education credit are awarded upon program completion.

For more information or to register for the program, visit vet.purdue.edu/humancenteredvetmed. **dvm360**

Australian veterinary students get naked to cover costs

Calendar sales will fund veterinary students' graduation ball for their friends and family and help support the local fire brigade.

It's no secret that veterinary students are dealing with massive student debt and low starting salaries, but Australia's James Cook University Veterinary Science Class of 2015 took matters into their own hands when students needed to raise funds for a graduation ball. The bravest of the class decided to bare all in a "fun and tasteful nude calendar."

They hope that by uncovering themselves they can cover the cost of their graduation ball to make it more affordable for their friends and family to attend—10 percent will also be donated to the local fire brigade. Their goal is to sell 2,000 calendars, raising \$40,000. What better way to celebrate their

"When it came time to take the first photo, only the bravest in class volunteered. By the end of our cover photo shoot, everyone had forgotten that we were wandering around the farm without any clothes on."

veterinary achievements with family and friends than with a large, glossy, full-color naked calendar dubbed "Vets Uncovered?"

Just 25 students stripped down for the first of three shoots for the calendar. "We were buzzing with nerves and excitement when we arrived at the property, not quite knowing what to expect," the "About us" section reads on the calendar website. "When it came time to take the first photo, only the bravest in the class volunteered. Slowly but surely, each

of us had to undress and pose with a range of farm animals, including dogs, horses, cattle and bison (yes, actual bison!!). By the end of our photo shoot, everyone had forgotten that we were wandering around the farm without any clothes on."

After the success of the initial shoot, more were ready to disrobe. "We finished off the shoot at the vet school, with photos in our lecture theatre,

our surgery area and in the yards with our wonderful animals," the website reveals. "We even had a few more students and a lecturer work up the courage to join us for the second shoot after hearing how much fun everyone had at the first shoot."

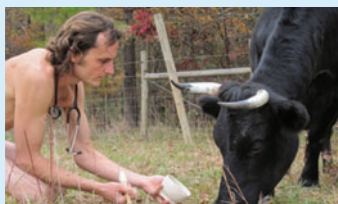
Photos—even a "full monty" shot with students in graduation caps—can be viewed and calendars can be ordered at vetsuncovered.com. [dvm360](http://dvm360.com)



Find it all here
dvm360
com

More news on nudes

To read about what inspired holistic veterinarians to drop their drawers, head over to dvm360.com/nudevets.



Make your communications work harder.

Take our quick survey and learn how to send more effective messages to customers.

vetstreetpro.com/survey 

At Vetstreet, we help you create marketing solutions that form strong bonds with your customers. Discover how our timely, personal and relevant communications can foster loyalty and inspire more regular visits to your practice.



CSU vet school gains \$42.6 mil. in donations

College holds top spot for financial gifts as Colorado university breaks fundraising records with \$143.3 million. *By Julie Scheidegger*

Colorado State University (CSU) shattered records in private donations, collecting \$143.3 million for the university in the 2013-2014 fiscal year. The leading contributor to its fundraising success was the College of Veterinary Medicine and Biomedical Sciences, which accepted \$42.6 million in private giving.

It may be that CSU has started a new era in funding—the donation age. Across the academic landscape, class size and tuition has increased since the recession and state funding has decreased. And in this financial year, CSU's donation total surpassed its annual state funding of \$97.1 million by nearly 50 percent. And gifts did not just come in million-dollar chunks; 22,000 people—of the 33,716 who

donated—gave between \$1 and \$100.

Coleman Cornelius, director of marketing and communications for the veterinary school, says donations to the veterinary school will support scholarships, teaching, research, facilities and clinical service. The top three donations were directed specifically to animal care and translational research for cancer, orthopedics and reproduction: CSU Flint Animal Cancer Center received a \$10 million gift from an anonymous donor to benefit canine cancer treatment; CSU Orthopedic Research Center received \$6 million for the Malone Family Foundation for equine orthopedics; and CSU Equine Reproduction Laboratory received \$3 million from Bud and Jo Adams to sustain the program's fertility clinic.

All three donations specify a One Health approach that the programs should also benefit human medicine as well. "These three gifts are a testament to the college's increasing expertise and acclaim in treating dogs, horses and other companion animals with naturally occurring disease—and then using the insights gained to improve human medicine," Cornelius says.

Only \$1 million of the \$42.6 million will go to reducing the debt load of CSU's veterinary students with scholarships. The rest will go to internships and experiential learning, teaching endowments and faculty research, research efforts aimed at developing new medications and technologies; and new and renovated research and teaching facilities. [dvm360](#)

Colo. universities partner to bring carbon-ion radiotherapy to U.S.

First step is \$300 million facility for cancer treatment for humans, pets.

Cancer experts from Colorado University and Colorado State (CSU), including researchers from the CSU Flint Animal Cancer Center, announced a \$200,000 feasibility study to support building the nation's first carbon-ion radiotherapy research and treatment facility in Aurora, Colorado. Carbon-ion therapy is proven effective against the deadliest cancers, but is currently only available in Europe and Japan.

Collaborators met at the University of Colorado Anschutz Medical Campus in Aurora to discuss plans for the estimated \$300 million research and treatment facility. The project is connected with University of Colorado Health's



>>> Researchers hope the feasibility study brings carbon-ion radiotherapy as seen above to the United States.

Poudre Valley Hospital in Fort Collins, Colorado, and the National Institute of Radiological Sciences in Japan.

The Flint Animal Cancer Center specializing in treating cats and dogs with naturally occurring cancer provides critical translational medicine that CSU says is the cornerstone of the carbon-ion therapy proposal.

Jac Nickoloff, a radiation researcher and head of the CSU Department of

Environmental and Radiological Health Sciences, explained that carbon ions, compared to the protons and photons traditionally used in radiotherapy, are more precisely targeted to tumors and cause minimal damage to normal tissues en route to tumors. Studies show that carbon-ion radiation is safe, well tolerated by patients and works on many types of cancer with few side effects, Nickoloff said. [dvm360](#)



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K-State researcher looks to develop vaccines against tick-borne disease

Veterinary medicine could benefit from studies on *Ehrlichia chaffeensis*.

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BRIEF SUMMARY: Please consult package insert for complete product information.

Indications: For use in dogs to prevent canine heartworm disease by eliminating the tissue stage of heartworm larvae (*Dirofilaria immitis*) for a month (30 days) after infection and for the treatment and control of roundworms (*Toxocara canis*, *Toxascaris leonina*), hookworms (*Ancylostoma caninum*, *Uncinaria stenocephala*, *Ancylostoma braziliense*), and tapeworms (*Dipylidium caninum*, *Taenia pisiformis*).

WARNINGS: For use in dogs only. Keep this and all drugs out of reach of children. In safety studies, testicular hypoplasia was observed in some dogs receiving 3 and 5 times the maximum recommended dose monthly for 6 months (see **Animal Safety**). In case of ingestion by humans, clients should be advised to contact a physician immediately. Physicians may contact a Poison Control Center for advice concerning cases of ingestion by humans.

PRECAUTIONS: Use with caution in sick, debilitated, or underweight animals and dogs weighing less than 10 lbs (see **Animal Safety**). The safe use of this drug has not been evaluated in pregnant or lactating bitches.

All dogs should be tested for existing heartworm infection before starting treatment with IVERHART MAX Chewable Tablets, which are not effective against adult *D. immitis*. Infected dogs should be treated to remove adult heartworms and microfilariae before initiating a heartworm prevention program.

While some microfilariae may be killed by the ivermectin in IVERHART MAX Chewable Tablets at the recommended dose level, IVERHART MAX Chewable Tablets are not effective for microfilariae clearance. A mild hypersensitivity-type reaction, presumably due to dead or dying microfilariae and particularly involving a transient diarrhea, has been observed in clinical trials with ivermectin alone after treatment of some dogs that have circulating microfilariae.

ADVERSE REACTIONS: In clinical field trials with ivermectin/pyrantel pamoate, vomiting or diarrhea within 24 hours of dosing was rarely observed (1.1% of administered doses). The following adverse reactions have been reported following the use of ivermectin: depression/lethargy, vomiting, anorexia, diarrhea, mydriasis, ataxia, staggering, convulsions and hypersalivation.

ANIMAL SAFETY: Studies with ivermectin indicate that certain dogs of the Collie breed are more sensitive to the effects of ivermectin administered at elevated dose levels (more than 16 times the target use level of 6 mcg/kg) than dogs of other breeds. At elevated doses, sensitive dogs showed adverse reactions which included mydriasis, depression, ataxia, tremors, drooling, paresis, recumbency, excitability, stupor, coma and death. No signs of toxicity were seen at 10 times the recommended dose (27.2 mcg/lb) in sensitive Collies. Results of these studies and bioequivalence studies support the safety of ivermectin products in dogs, including Collies, when used as recommended by the label.

In a laboratory safety study, 12-week-old Beagle puppies receiving 3 and 5 times the recommended dose once weekly for 13 weeks demonstrated a dose-related decrease in testicular maturation compared to untreated controls.

HOW SUPPLIED: IVERHART MAX Chewable Tablets are available in four dosage strengths (see **Dosage** section) for dogs of different weights. Each strength comes in a box of 6 chewable tablets, packed 10 boxes per display box.

STORAGE INFORMATION: Store at 20°C -25°C (68°F-77°F), excursions permitted between 15°C-30°C (59°F-86°F). Protect product from light.

For technical assistance or to report adverse drug reactions, please call 1-800-338-3659.

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A vaccine against certain tick-borne diseases maybe be on the horizon if studies underway at Kansas State University prove to be successful.

Roman Ganta, PhD, a professor of diagnostic medicine and pathobiology at KSU, has received a four-year \$1.8 million grant from the National Institutes of Health (NIH) to continue his study of the tick-borne bacterium *Ehrlichia chaffeensis*. The grant is the latest in 16 continuous years of NIH funding for Ganta’s research on tick-borne pathogens. Ganta says he hopes that by researching the genetic composition of *E. chaffeensis*, he and his team will be able to develop vaccines to protect different species against infections caused by the bacterium and other tick-borne pathogens.

“Our research is directed at more than just one pathogen and one disease from one tick,” Ganta says. “There are several different tick species that transmit pathogens that cause diseases in humans, dogs, cattle, sheep and other vertebrate animals. Our research also applies to other pathogens transmitted from different tick species.”

E. chaffeensis is a zoonotic pathogen transmitted to humans and animals by the lone star tick and causes monocytic ehrlichiosis in humans. The lone star tick is prevalent in eastern Kansas and throughout the southeastern and south central regions of the United States. Symptoms of monocytic ehrlichiosis can include persistent fever, headache, fatigue and muscle aches, which often appear one to two weeks following a tick bite. The severity of the disease varies from person to person, although it can be fatal in immunocompromised people, Ganta says.

The major goal of Ganta’s research is to understand what proteins are important for *E. chaffeensis* to grow



>>> Roman Ganta, professor of diagnostic medicine and pathobiology, has received a \$1.8 million grant from the National Institutes of Health to continue studying the tick-borne bacterium *Ehrlichia chaffeensis*. “We want to identify which genes are essential for the pathogen and use them to develop a vaccine,” Ganta says.

in vertebrate hosts and in ticks. Ganta and his research team are working at the genome level to understand how the pathogen grows in humans, animals and ticks, and how it is uniquely able to adapt to vertebrate hosts in addition to ticks.

“We want to identify which genes are essential for the pathogen and use them to develop a vaccine,” Ganta says. “We want to understand the molecular basis for the pathogenesis by carrying out basic research that has important implications for applied science.”

In addition to the NIH grant, Ganta has also been awarded \$9,000 by the Kansas State College of Veterinary Medicine and the department of diagnostic medicine and pathobiology to develop a tick-rearing laboratory that will be used not only by Ganta’s team, but by other university researchers and possibly even collaborators from other research institutions.

Ganta’s research team includes veterinary student Tanner Slead from the Kansas State College of Veterinary Medicine at Overland Park. **dvm360**

New study reveals that fish are smarter than we thought

Discovery of 'parallel vision' in zebrafish may offer additional insight on treatments for stroke, attention deficit disorders.

A study published in the online journal *PLOS ONE* has reported the first evidence that fish are able to visually process multiple objects simultaneously. The discovery, researchers say, is proof not just that fish are more intelligent than their reputation for a "three-second memory" suggests, but may pave the way for medical advances that could help in stroke rehabilitation and in treatments for attention deficit disorders.

The study, conducted by researchers at the University of Bath and Queen Mary University of London, is the first to identify "parallel visual search"—the ability to pick out one object among many—in zebrafish. Visual search involves an active scan of an environment in order to look for just one object or feature. In everyday life we might relate to this in searching for an item on a supermarket shelf, looking for friends in a crowd or even identifying "Where's Waldo?"

Given the benefits of visual search in finding a mate, spotting a predator or searching for prey, the research team suggests that doing this efficiently by ignoring distracting items should be common among species. Yet up until this point it had only been identified in primates, rats and pigeons. Without the frontal part of the brain in the neo-cortex, it was assumed that fish would have to examine every item, one after the other, to find the target, rather than assess the whole scene together. As part of the study, 11 adult zebrafish were presented with different visual stimuli in the form of different-colored circles on a computer monitor over a period of six days to assess their visual processing abilities. Scientists taught zebrafish to associate food with a red disc and then placed that disc among other distracting discs. "Although vision seems simple and quick, it involves a lot of computational power to figure out where things are in a crowded environment," says Michael Proulx, BSc, MA, PhD, of the University of Bath's



>>> "Don't judge me!" Zebrafish have proven to be much smarter than researchers originally thought.

department of psychology and lead author of the study. "It is incredible to discover that the zebrafish brain, with its small size and simple structure, can seemingly find a target visually without getting slower. No matter how many items we added to the scene to distract the fish, they had no problem responding at the same speed every time."

The zebrafish is an excellent model organism to study behavioral genetics and neurobiology thanks to its smaller brain and transparent skin, Proulx says. "Now that we have discovered their mental sophistication, there is a great opportunity to discover the neural code and genetics of how humans pay attention, and apply those findings to treatments for those with ADHD or strokes," he says.

Matthew Parker, PhD, of Queen Mary University of London, says fish are more complex than they appear.

"Fish don't deserve their reputation as the stupid branch of the animal family tree. The more research we do, the more we find out that they are capable of complex learning and problem solving," he says. "This could be because being part of a shoal requires complicated interactions with their environments and quick processing of large amounts of information. Zebrafish are genetically surprisingly similar to humans and are incredibly useful to our studies of how genes influence addiction and psychiatric diseases, among other things."

The research adds to growing knowledge that suggests they are capable of much more than scientists previously

thought, the authors say. Other studies have found that fish are able to pick the larger of two groups of objects, count up to at least four and have comparatively lengthy memories. [dvm360](#)

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Banfield children’s book emphasizes preventive care

Story teaches elements of responsible care and ownership to children.

Banfield Pet Hospital is taking client education to the next level, publishing a new children’s book that emphasizes responsible pet ownership and preventive care.

My Very, Very Busy Day was created in partnership with 11-year-old Quvenzhane Wallis, aspiring veterinarian and star of the upcoming musical film *Annie*. Oregon-based artist Ray Nelson wrote and illustrated the book.

“Just like my own dogs, the pets in this book are very, very busy, and they count on their owners to take really good care of them,” says Wallis. “I’ve always loved animals and dream of becoming a veterinarian when I grow up, so I’m very excited for this opportunity



>>> Wallis, Zabell and furry friend Sandy read aloud from the book at a special event in New York.

to help teach kids about what pets need to be happy and healthy!”

The story is written from a pet’s viewpoint and follows a day in the life of two four-legged friends as they visit the veterinarian for their six-month check-up, where the veterinarian listens to their heart, checks their eyes, ears and teeth.

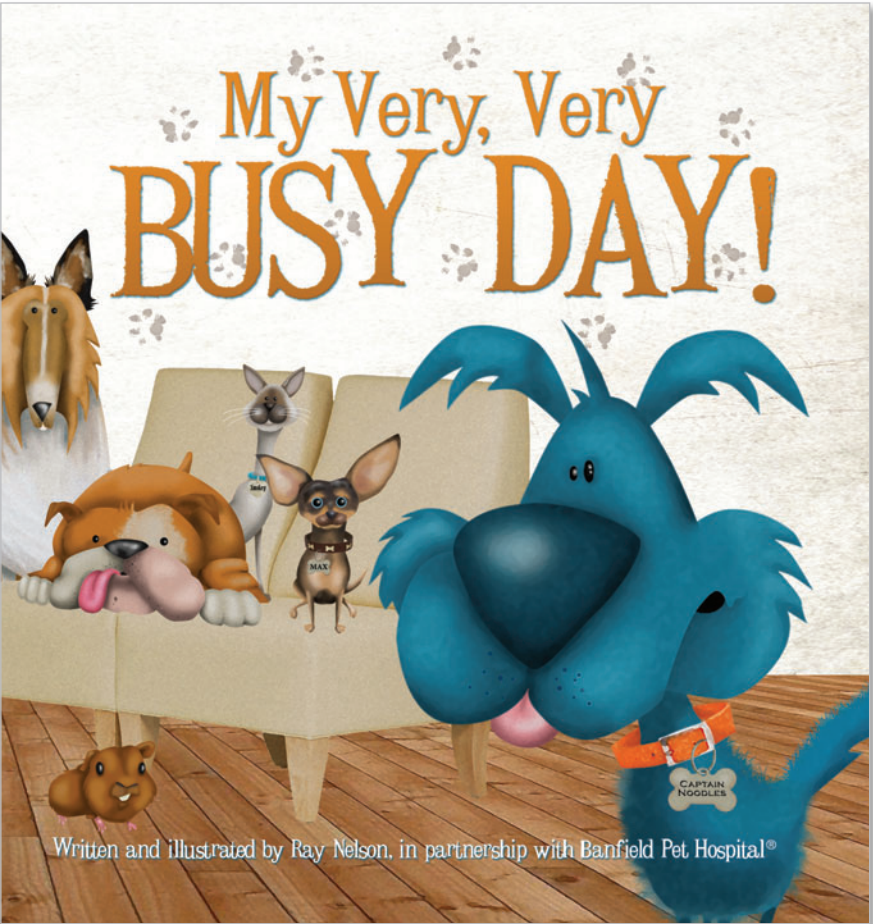
The book also features Banfield’s “Best Friend Promise” for kids, which includes a list of actions children can do to help care for their pet. Activities such as providing fresh water, regular exercise and proper identification, among

others, are all important components of being a responsible pet owner.

Banfield veterinarians Ari Zabell, DVM, director of client advocate support in Portland, Oregon, and Jessica Trice, DVM, chief of staff in one of Banfield’s Chicago hospitals, provided medical expertise for the book.

“Responsible pet ownership and the importance of preventive veterinary care are learned through education—it is never too soon to teach children the importance of properly caring for a pet,” says Zabell. “No matter how young a child is, they play a significant role in the family and in the life of a family pet—it’s important they build good habits at an early age when it comes to providing the best care possible for a pet.”

The book will be available at all Banfield Hospitals for a suggested donation of \$10. Proceeds benefit the Banfield Charitable Trust. [dvm360](#)



>>> Banfield Pet Hospital has released a children’s book aimed at emphasizing the importance of pet health to children. Proceeds from the sale of the book will go to the Banfield Charitable Trust.



For Animals Only

Rapinovet™ (propofol) Anesthetic Injection

Emulsion for intravenous use in dogs and cats.

BRIEF SUMMARY: Before using Rapinovet™ (propofol), please consult the product insert, a summary of which follows:

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

WARNINGS: Induction of anesthesia with Rapinovet™ injection is frequently associated with apnea and respiratory depression. Hypotension and oxygen desaturation can occur also, especially following rapid bolus administration. Apnea is observed less frequently following maintenance doses of Rapinovet™ injection when given as the sole maintenance agent, or when a maintenance dose is administered during inhalant anesthesia.

When using Rapinovet™ injection, patients should be continuously monitored, and facilities for the maintenance of a patent airway, artificial ventilation, and oxygen supplementation must be immediately available. The clinical use of propofol without available supplemental oxygen and artificial ventilation has not been adequately evaluated and is not recommended.

SIDE EFFECTS: The primary side effect of Rapinovet™ injection in dogs is respiratory depression and apnea. Apnea was observed in 20% of the dog cases in the clinical trial. Apnea was observed in 1.4% of the cat cases in the clinical trial. All apnea cases responded satisfactorily to oxygen supplementation and/or controlled ventilation. The primary side effect of Rapinovet™ injection in cats is paddling during recovery. Paddling was observed in 11% of the cat cases in the clinical trial. Other transient side effects in dogs or cats are observed infrequently or rarely:

- **Respiratory:** panting, reverse sneezing, cyanosis
- **Musculoskeletal:** paddling during recovery, tremors, tenseness, movements, fasciculations
- **Cardiovascular:** bradycardia, hypotension, cyanosis, tachycardia, premature ventricular contractions
- **Central Nervous System:** excitation, opisthotonus, seizure
- **Injection Site:** pain during injection
- **Gastrointestinal:** emesis/retching
- **Other:** rubbing at face or nose during recovery, vocalization during recovery, chewing or licking the injection site during recovery.

PRECAUTIONS:

1. Rapinovet™ injection contains no antimicrobial preservatives. Strict aseptic techniques must always be maintained during handling since the vehicle is capable of supporting rapid growth of microorganisms. Failure to follow aseptic handling procedures may result in microbial contamination causing fever, infection/sepsis, and/or life-threatening illness. Do not use if contamination is suspected.
2. When using Rapinovet™ injection, patients should be continuously monitored, and facilities for the maintenance of a patent airway, artificial ventilation, and oxygen supplementation must be immediately available. The clinical use of propofol without available supplemental oxygen and artificial ventilation has not been adequately evaluated and is not recommended.
3. Anesthesia effects: Careful monitoring of the patient is necessary when using Rapinovet™ injection as a maintenance anesthetic due to the possibility of rapid arousal. Apnea may occur following maintenance doses of Rapinovet™ injection.
4. Physiological effects: During induction of anesthesia, mild hypotension and increased heart rate may occur when Rapinovet™ injection is used alone.
5. Premedicants: Premedicants may increase the anesthetic or sedative effect of Rapinovet™ injection and result in more pronounced changes in systolic, diastolic, and mean arterial blood pressures. The use of ketamine (an approved compound for restraint in cats) is not recommended as a preanesthetic prior to propofol due to an increased number of patients experiencing apnea.
6. Breeding Animals: Adequate data concerning the safe use of Rapinovet™ injection in pregnant, lactating, and breeding dogs and cats have not been obtained. Propofol crosses the placenta, and as with other general anesthetic agents, the administration of propofol may be associated with neonatal depression.
7. Puppies and Kittens: The use of propofol has not been evaluated in puppies or kittens.
8. Compromised or debilitated dogs and cats: Doses may need adjustment for geriatric or debilitated patients. The administration of Rapinovet™ injection to patients with renal failure and/or hepatic failure has not been evaluated. As with other anesthetic agents, caution should be exercised in dogs or cats with cardiac, respiratory, renal or hepatic impairment, or in hypovolemic or debilitated dogs and cats.
9. Sighthounds: Rapinovet™ injection induction followed by inhalant anesthetic agents produced satisfactory anesthesia and recovery times in sighthounds. Propofol alone in 6 greyhounds and 7 non-greyhounds showed satisfactory, but longer recovery times in the greyhounds (averages of 47 and 18 minutes, respectively).² In a propofol pharmacokinetics study, greyhounds had higher propofol levels in plasma, a lower volume of distribution, slower total body clearance rates, and longer recovery times than did mixed-breed dogs. The elimination half-life was similar in both groups.³
10. Arrhythmogenicity: In one study in dogs, propofol increased myocardial sensitivity to the development of epinephrine-induced ventricular arrhythmias in a manner similar to other anesthetics.⁴
11. Consecutive day treatment: Heinz bodies increased dramatically in cats following repeat administration of propofol on consecutive days and were associated with decreases in RBC count and hematocrit. Large numbers of Heinz bodies can lead to hemolytic anemia.^{5,6} In one study in cats, treatment with propofol once a day for 3 days led to a marked increase in Heinz bodies. Treatment for 5 or more consecutive days resulted in generalized malaise and/or facial edema; clinical signs of illness resolved within 24 to 48 hours after cessation of propofol.
12. Concurrent Medication: No significant adverse interactions with commonly used drugs have been observed.
13. Perivascular Administration: Perivascular administration does not produce local tissue reaction.

CONTRAINDICATIONS: Rapinovet™ injection is contraindicated in dogs and cats with a known hypersensitivity to propofol or its components, or when general anesthesia or sedation are contraindicated.

HUMAN USER SAFETY: Not for human use. Keep out of reach of children.

Rapinovet™ injection should be managed to prevent the risk of diversion, through such measures as restriction of access and the use of drug accountability procedures appropriate to the clinical setting. Rare cases of self-administration of propofol have been reported, including dose-related fatalities. The material safety data sheet (MSDS) contains more detailed occupational safety information. For customer service, and/or a copy of the MSDS, call 1-800-633-3796. To report adverse effects, call 1-800-422-9874.

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Large animal veterinary students win \$5K scholarships to support their education

AABP, Zoetis award annual grants to encourage food animal practice.

The American Association of Bovine Practitioners (AABP) Foundation in partnership with Zoetis granted 15 \$5,000 scholarships to 15 veterinary students at the AABP Annual Conference this month in Albuquerque, New Mexico. The scholarships were established to attract students to enter food animal practice, as well as support large animal veterinary students in their education.

The 2014 scholarship recipients are:

- > Jonathan Angel, The Ohio State University
- > Jayton Bailey, Texas A&M University
- > Lindsey Borst, University of Minnesota
- > Patrick Brinson, North Carolina State University
- > Elizabeth Brock, Cornell University
- > J.D. Folsom, Oklahoma State University
- > Julia Herman, Colorado State University
- > Alissa Hunter, The Ohio State University
- > Andy Kryzer, University of Minnesota
- > Brendan Martin, Virginia Maryland Regional College of Veterinary Medicine
- > Lee Michels, University of Minnesota
- > Aaron Schaffer, Kansas State University
- > Douglas Shane, Kansas State University
- > Megan Thompson, University of Minnesota
- > Holt Tripp, Oklahoma State University

“With the increasing costs of a veterinary medical education, scholar-

ships are even more important than ever to all veterinary students, not just those involved in food animal medicine, however, AABP’s goal is to

further the success of veterinarians working in the beef and dairy industries,” Geni Wren, spokesperson for the AABP says. [dvm360](#)

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When using Rapinovel™ injection, patients should be continuously monitored, and facilities for the maintenance of a patent airway, artificial ventilation, and oxygen supplementation must be immediately available. The clinical use of propofol without available supplemental oxygen and artificial ventilation has not been adequately evaluated and is not recommended.

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See brief summary on page 26.

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American Humane, Zoetis recognize heroes of the veterinary profession

An Arizona DVM and a Texas veterinary technician were recognized on Hallmark Channel Oct. 30. *By Rachael Zimlich*

Behind every great dog is a great veterinarian. That's the basis of a new award that expands on the American Humane Association's (AHA's) long-standing Hero Dogs award program.

Eva DeCozio, DVM, of VCA Apache Junction Clinic in Higley, Arizona, and veterinary technician Signe Corbin of Westlake Animal Hospital in Austin, Texas, are the first-ever recipients of the Hero Veterinarian and Hero Veterinary Technician awards, which were sponsored by Zoetis. They were selected from a pool of nearly 700 nominations that were reviewed by a panel of renowned veterinary and animal care professionals and celebrities. The public then chose the ultimate winners from a group of finalists. The award recipients were recognized during a broadcast that aired on the Hallmark Channel on Thursday, Oct. 30.

DeCozio works at a clinic near a low-income Arizona neighborhood, and many of her clients arrive with



>>> DeCozio has opened her home to 13 dogs, seven cats, three tortoises and four horses. She lives in a county with the second-highest shelter kill rate in the country.



>>> Eva DeCozio, DVM, of VCA Apache Junction Clinic in Higley, Arizona, is recognized by Michael McFarland, DVM, of Zoetis as AHA's Hero Veterinarian for her work in helping cofound Panacea Animal Wellness Sanctuary (PAWS), a nonprofit animal welfare organization that works to reduce unnecessary animal euthanasia.

seriously ill pets but have little money to pay for their care. DeCozio takes on these patients, regardless of the owners' ability to pay, and also serves as cofounder of Panacea Animal Wellness Sanctuary (PAWS), a nonprofit animal welfare organization aimed at decreasing unnecessary euthanasia that is credited with saving more than 800 lives.

"I am overwhelmed and humbled by this huge honor," says DeCozio. "This award is a credit to my family, my community, my clients, my patients and, of course, my technicians. I want to dedicate this award to everyone involved in our rescue group who helped make this dream of creating a nonprofit a reality."

Signe Corbin has cared for patients at Westlake Animal Hospital for 24 years and also cofounded Pug Rescue of Austin (PRA) in 2009. She serves as PRA's medical director and hosts an annual "Pug Tune-Up" fundraising event during which she and fellow veterinary technicians provide nail

trims and ear cleanings to generate thousands of dollars in donations. Because of Signe's dedication, to date, more than 600 rescued pugs have received necessary medical care.

"This is the highlight of a 30-year career taking care of animals. This is such a great recognition by American Humane Association," Corbin says.

"We believe that the compassion, dedication and expertise provided by veterinarians and veterinary technicians are critical to maintaining health and quality of life for our beloved pets," says J. Michael McFarland, DVM, DABVP, Zoetis group director of companion animal veterinary operations. "Honoring veterinarians and veterinary technicians aligns with our Commitment to Veterinarians platform that exemplifies the company's responsibility to support the long-term health and sustainability of the profession."

Read more about the awards and recipients at herovetawards.org.

dvm360

WVC expands programming offered to technicians

Veterinary technicians can earn more than 20 hours CE with inaugural Veterinary Technician Symposium in June 2015. *By Rachael Zimlich*

Western Veterinary Conference (WVC) will offer something new for technicians this year, with its inaugural Veterinary Technician Symposium June 29 through July 1, 2015.

The symposium will offer a comprehensive learning experience for technicians who want to advance their careers through skill building, according to WVC officials. The event will take place at WVC's Oquendo Center in Las Vegas and allow participating technicians to earn more than 20 hours of continuing education credits. Included in the program offerings are online learning opportunities and skill-based instruction on topics like anesthesia, pain management, dentistry and emergency and critical care where groups of 20 to 40 technicians will work alongside expert instructors.

"WVC is proud to be the host of first-of-its-kind programming that provides a strong emphasis on hands-on training directed specifically at the veterinary technician community," says David Little, chief executive officer of WVC. "The WVC Veterinary Technician Symposium showcases WVC's commitment to providing continuing education for veterinary technicians. It is also an exciting opportunity to collaborate with NAVTA, specialty organizations and VetMedTeam."

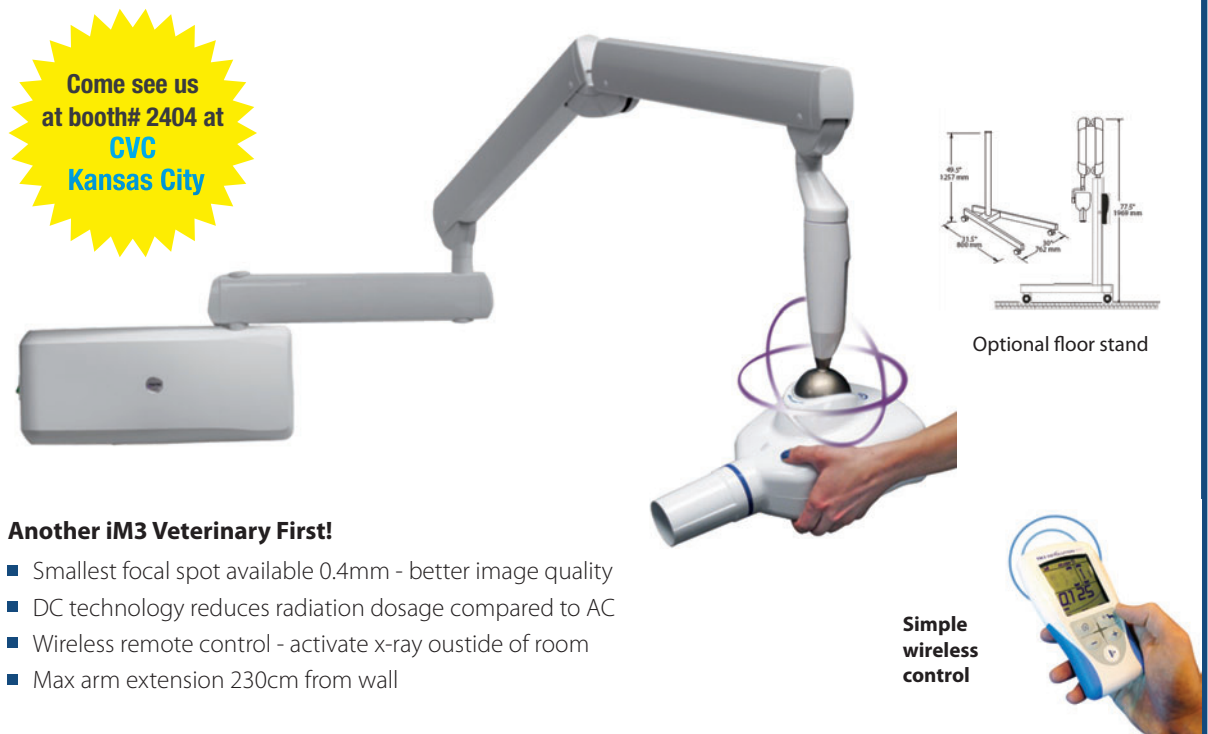
The National Association of Veterinary Technicians in America (NAVTA) and VetMedTeam are among the organizations partnering with WVC to host the event. dvm360

IN BRIEF

The Association of American Veterinary Medical Colleges plans to target their 2015 conference on recruitment to boost both historically underrepresented populations as well as the "new minority" in academic veterinary medicine: males and rural students. To learn more, visit aavmc.org/Events.

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Saline shortage boosting veterinarians' fluid costs

FDA says limited supply will continue in the near future. *By Katie James*

The U.S. Food and Drug Administration (FDA) has been monitoring a shortage of sodium chloride injection bags that has been impacting U.S. supply and has potential to increase prices for clinics.

Jeff Werber, DVM, a practice owner in Los Angeles and frequent *dvm360* contributor, says he has seen the effects of the short supply. "Our intravenous fluids almost doubled in price in a just a few months," he says.

Increased demand for saline began toward the end of 2013 and has continued into 2014, creating a shortage in the available supply. Demand has continued at a higher-than-normal pace, and the shortage is expected to continue for some time in the future, says Tara Goodin, FDA press officer.

Manufacturers have been working with the FDA to increase capacity and fulfill orders. And Baxter Healthcare and Fresenius Kabi USA, two primary suppliers, have begun temporarily importing saline from their European facilities in Spain and Norway, respectively, Goodin says. The European facilities have been inspected and meet FDA quality standards.

All companies that have traditionally manufactured sodium chloride prod-

Where the bags are

B. Braun Medical

- > Increasing production for next three years
- > Implemented inventory allocation and fulfillment process
- > Tightly managing inventory
- > Intermittent backorder status expected

Baxter Healthcare

- > Some units are on allocation
- > Some products will be available again beginning mid-May or June 2014
- > Other products will be unavailable until fourth-quarter 2014
- > Units will be temporarily imported from Spain facility

Fresenius Kabi USA

- > Units temporarily imported from Norway facility
- > U.S. label units available except for 100 ml Freeflex
- > Scandinavian label units not available

Fresenius Medical Care North America

- > Product on allocation

Hospira

- > Some product has delivery and shortage recovery
- > Other product on allocation or in limited supply
- > Allocations set at 100 percent of historical usage

ucts are continuing to produce them. Given the shortage, however, allocation procedures are in place, ensuring that each facility receives a shipment based on historical use so that supplies can be evenly distributed until suppliers are able to fulfill all demand. The FDA is continuing to watch the situation closely and work proactively

to add additional capacity and develop backup sources, Goodin says.

See "Where the bags are" above for a quick look at concrete solutions specific companies have put into place to make 0.9% Sodium Chloride injection bags available to veterinarians.

For the latest FDA drug shortages list, visit www.fda.gov. **dvm360**

Virbac agrees to acquire Sentinel products

Deal comes as Eli Lilly tries to buy Novartis Animal Health, which markets Sentinel Flavor Tabs and Sentinel Spectrum parasiticides.

Virbac has agreed to acquire the veterinary parasiticides Sentinel Flavor Tabs and Sentinel Spectrum, which are currently marketed by Novartis Animal Health. This new agreement comes in the midst of a Federal Trade Commission (FTC) review of Eli Lilly and Company's pending acquisition of Novartis Animal Health.

The deal is subject to approval by the FTC and also is reportedly conditional upon Eli Lilly's purchase of Novartis Animal Health.

Eli Lilly entered into an agreement in April with Novartis to acquire its animal health division to combine with its existing animal health business, Elanco, for approximately \$5.4 billion. At the time, Novartis'

animal health division reported 2013 revenue of roughly \$1.1 billion.

Sentinel Flavor Tabs and Sentinel Spectrum are expected to reach revenue of \$90 to \$100 million in 2014, according to a Virbac press release. Virbac Animal Health already sells Iverhart Max and Iverhart Plus antiparasitics as well as a host of other veterinary products. **dvm360**

AVMA Econ: Good news, bad news

> Continued from page 1

Budget Office. "In the next 12 to 18 months we're going to see very real growth in the economy," said AVMA Economics Director Michael Dicks, PhD, to a group of about 200 veterinarians, academicians and economists.

The AVMA's Veterinary Economics Division has continued conducting research and analyzing publically available data in the wake of the 2013 U.S. Veterinary Workforce Study to understand supply and demand in the veterinary market and provide information that helps the profession make smart decisions. "The market will adjust gradually with good information and all at once with bad information," Dicks said.

The AVMA conducted four economic surveys in 2014, including an employment survey, a survey of senior veterinary school students, a biennial economic survey and a capacity utilization survey. The Association of American Veterinary Medical Colleges (AAVMC) also conducted a survey of veterinary college applicants. The surveys will continue annually, and new surveys will be added as the need arises, Dicks said.

Another economic analysis paints a fairly bleak picture of the state of the profession. Dicks and colleagues calculated what they call the "net present value" of a veterinary degree for various segments of the profession. They found that the return on investment for a veterinary education is negligible for companion-animal-exclusive veterinarians and negative for mixed-animal, food animal and equine veterinarians. (See "How veterinary medicine is like a T-bone steak" in the November issue of *dvm360* for more.)

While current demand for educational services exceeds supply, Dicks says, future supply



Dr. Michael Dicks

No relationship exists between educational costs and starting salaries. In other words, attending a more expensive school does not necessarily lead to higher compensation.

is likely to exceed demand. The number of veterinary school seats will continue to increase until 2018 and then flatten, he predicts, while the cost of education will keep rising. "The ROI for a veterinary education is negative and will continue to be for some time," Dicks says.

Here are some other highlights from the summit:

> While increases and decreases in the number of applicants per available veterinary school seat are cyclical in nature, the profession is seeing a drop in the number of applicants per seat. This is due largely to the opening of new AAVMC-member schools, increasing enrollment at current colleges and U.S. students choosing to study at international veterinary schools, said Lisa Greenhill, MPA, EdD, an

associate executive director with the AAVMC. In 1980 there were 3.59 applicants per seat, in 1998 there were 2.95, and in 2013 there were 1.64. "The ratio could fall below 1.1 within five years given current conditions," Greenhill said. "This could be a threat to the long-term viability of some institutions."

> Gender disparity was evident in many research findings. For example, according to Bridget Bain, PhD, a statistical analyst with the AVMA, female veterinarians have lower starting salaries (which was especially apparent during the recession) and higher debt upon graduation. Also, while unemployment in the profession is 3.4 percent (below the national average of 6.1 percent), for women it's 5 percent and for men it's 1 percent. However, women's income levels surpass men's at 33 years after graduation.

> No relationship exists between educational costs and starting salaries, Bain said. In other words, attending a more expensive veterinary school does not necessarily lead to a higher compensation level.

Dicks reiterated that robust data collection by varied veterinary stakeholders is critical to helping paint a clearer picture of the veterinary business sector. "We emphasized last year when the 2013 workforce study was released that the report and its findings are a starting point and not the end of our efforts to ensure adequate access to veterinary services and the economic viability of the veterinary medical profession," he said. "We continue to subscribe to that philosophy today. We need even more data, and we are asking our colleagues across the veterinary profession to help us gather and analyze information for the benefit of the profession across all disciplines." **dvm360**

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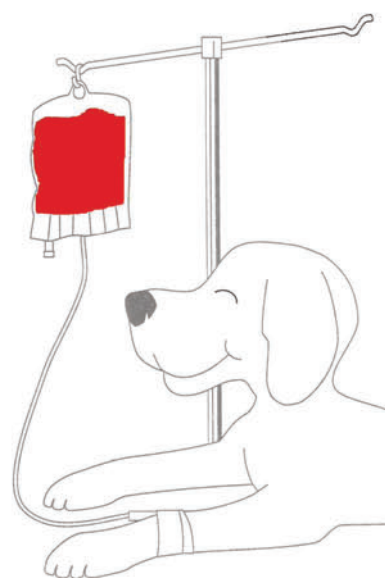
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Out of debt in 5 years

> Continued from page 1

tive that we find ways to manage and conquer the inevitable debt that comes with our chosen profession.

First steps

The financial aspect of attending veterinary school was something that



Dr. Brooke Dooley

weighed heavily on me before I even applied. I decided to apply only to Purdue, my in-state school, because I believed the debt would be too crippling if I attended an out-of-state school. Fortunately I got in! When I entered the Purdue University School of Veterinary Medicine in the fall of 2005, I received financial counseling, along with stacks of papers outlining the debt I was incurring and how long it would take me to pay the loans off. I could not begin to comprehend paying on this debt for 25 years. I resolved then that I would, one, find a way to limit the debt incurred as much as possible and, two, come up with a plan to pay it off in 10 years or less once I graduated and got my first “real” job.

During school I chose to live off-campus, across the river in Lafayette, which saved me a considerable amount in rent. I had already paid for my car in undergrad (as you can see, I really hated debt!). I took on extra small jobs around the veterinary school, such as working in the student bookstore and being a student representative for a veterinary company. I was also fortunate to receive some scholarships. Some were need-based and others were for my service in clubs. In the end I netted about \$100,000 in debt for veterinary school, plus \$20,000 for undergrad and \$3,000 that I borrowed from my parents—a sum total of \$123,000, give or take.

When it came time to graduate and choose my first job, I wound up through a series of events looking for employment in Austin, Texas. I had two great job offers—and it was a tough decision to make. The deciding factor came down to money, stability and benefits. I was offered an above-average salary for a new graduate, and I was super-excited about having

a 401(k). My boyfriend (now my husband) and I moved into a rental house. He had been working for the previous four years and had saved enough money for the initial rental expenses. Otherwise we split living expenses down the middle.

Working it off

The first thing I did with my paychecks was to pay my parents back. Then I got on daveramsey.com, a site dedicated to helping people pay off debt, and used the mortgage calculator to plug in numbers to see what I had to pay each month to pay my loans off in 10 years. My husband wasn't working at the time, but he had enough in savings to pay for his half of our expenses. It seemed like it wouldn't be too difficult to make those larger payments. From there on out, no matter what happened, I treated those student loan payments as my top financial priority.

You may be wondering how my payoff period changed from 10 years to five years. Along the way, three things happened. First, I started making more money. I became a more efficient and more confident clinician, which led to increased production (I was on a Pro-Sal pay plan). Also, I picked up extra shifts one to two times per month to increase my earning potential. Second, my husband got a great job. Third, we both became more motivated by seeing those debt numbers drop and thinking about how much money we were saving in interest.

Every six months we held a family budget meeting to recalculate and reinvigorate our debt-payment plan. I started using personal-budgeting website Mint.com to monitor where every dollar went and following Dave Ramsey's “debt snowball plan,” the only difference being that I paid the highest-

interest loans first rather than the lowest balance, as he suggests (see “Dave Ramsey's debt snowball plan,” below).

That's not to say I was a saint this entire time. We enjoyed eating out—there was a budget for that. We bought a new house, the down payment coming from my husband's savings. Had we not had that money saved (he'd lived off turkey sandwiches in the early years

We didn't go on vacation or on a honeymoon. I rarely shopped for new clothes unless something in my current wardrobe got holes, became stained or simply fell apart.

when he was working), we probably would not have purchased the house. I did buy a car in 2010 after my old one started costing more to maintain than a new one. I got zero percent financing and purchased a gently used model.

What we didn't do was go on vacation or on a honeymoon. I rarely shopped for new clothes unless something in my current wardrobe got holes, became stained or simply fell apart. We spent a modest amount for our wedding and were lucky enough to have our parents help us out a bit. I did set up a savings budget for our wedding from the time my boyfriend and I moved in together, setting aside a little bit here and there. I didn't want to completely give up a wedding!

Dave Ramsey's debt snowball plan

Here's how the debt snowball plan works, according to debt-busting guru Dave Ramsey. You pay minimum payments on all of your debts except one, and you attack that one debt with everything you've got. “We're talking gazelle intense, sell-out, get-this-thing-out-of-my-life-forever energy,” Ramsey says on daveramsey.com. Once you've

paid that debt off, you take the money you were putting toward it, plus any extra funds you find, and attack the next debt on the list. Once it's gone, take that combined payment and go to the next debt. The money you have available for paying off your debts builds, like a snowball, enabling you to knock them out one by one.



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Looking back, I realize now that it wasn't the small things that made the biggest difference. In fact, I never truly felt deprived. I could eat lunch out frequently or stop and grab a latte without worrying about the budget. The thing that made the biggest impact were those big financial decisions. Choosing not to go on trips, buying a house with a mortgage that was the same as our rent, and being thoughtful with any purchases over \$100 were the main contributing factors to our success.

I remember feeling sad that we didn't go on a honeymoon, but now we have the freedom to take even better trips without the weight of the debt holding us back. Being debt-free releases immense power to build wealth. My husband and I still have to work on the mortgage and now make some catch-up contributions to our retirement accounts.

I am tremendously proud of myself for sticking with the plan for the past five years and feel good about the path I took anytime there was a fork in the road. You may have noticed that I did not mention children—this was a conscious decision on my part as I hear they're quite expensive. That's a very personal choice and it should be factored into your own debt repayment plans.

Ultimately, my advice to my fellow veterinarians is to examine your personal values and your tolerance for sacrifice and then objectively evaluate your current debt, income and budget to set an achievable goal that works for you. As life changes, so too will your financial picture. Regular check-ins are important. Think of it as preventive care (an annual or semi-annual physical exam, with bloodwork, and maybe even a dental cleaning) for your life. [dvm360](#)

Dr. Brooke Dooley is the San Antonio/West Texas medical director for Banfield Pet Hospital.

5 things to ask your financial planner

"How much do you cost?" is a good question. "How do you make *your* money?" is an even better one.

If you feel a little out of your depth after jumping into your quagmire of veterinary school student debt, you're not alone among DVMs. But if it's a financial planner you need, how do you go about finding one that's right for you?

Mark McGaunn, CPA, CFP, who works with veterinarians and veterinary practices at McGaunn and Schwadron CPAs in Boston, says your first two questions should not be: "Can you help me?" (The answer will almost always be "yes") and "How much do you charge?" (Come on, you don't like when pet owners judge you that way.) Instead, McGaunn thinks you can start a good conversation with a planner with some more pointed questions. Think of it as a job interview with someone you might be working with for 25 years (it's a long way to retirement). Here are McGaunn's five most important questions to ask a financial planner before asking them to assist you with your finances:

1 Do you treat our relationship as one that is fiduciary in nature?

In general, investment brokers and insurance agents have a primary duty to their agency or company, not to the client, McGaunn says. Things to ask:

- > Are my interests placed first, even if it may cost you or your firm to do so?
- > If I don't need to do or change anything, will you tell me just that?
- > If you're not the right person to help me, will you refer me to someone more qualified who is?

2 How are you compensated?

There are three ways a planner can be paid: on commissions, fee-based (commissions and fees, depending on the work) or fee-only.

"If a financial planner says you aren't paying for their work, you should

run," McGaunn says. "The financial services industry is a closed system, so when purchasing a product like an investment, an annuity or life insurance policy, there is some form of compensation flowing from the clients' purchase, unless you're paying for advice only [through just fees]."

3 What credentials and certifications do you possess?

The most common financial planning certification in the United States is the Certified Financial Planner (CFP). A CFP has passed a certification exam, has at least 3 years of financial planning experience and completes CE courses to maintain certification. Other individuals may not have the designation and be equally competent, McGaunn says. However, it's one test to see whether the planner has gone above and beyond.

4 What services does your firm provide?

Some advisors handle most or all financial services you might need in their private practice or larger firm. Other planners specialize in retirement or investment management. In a complex situation, which may be the case with a veterinary practice owner possessing a large retirement plan, a valuable hospital and practice real estate, operating with a group of individual service providers with no coordination could lead to a disjointed plan.

5 Do you have clients like me that you advise?

Some firms specialize with clients of a single profession; others work with the very wealthy or young, wage-earning couples. Choosing someone who has experience with clients in your situation will keep you from needing to explain your industry and, for instance, how practice valuations work.

SPOTLIGHT ON

ACUTE PAIN

in Cats

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Tamara Grubb
DVM, PhD, DACVAA

Dr. Tamara Grubb is a board-certified veterinary anesthesiologist with a strong clinical interest and research focus in pain management. She is currently an assistant clinical professor of anesthesia and analgesia at Washington State University's College of Veterinary Medicine. She is also a certified veterinary acupuncturist and a consultant in a private small-animal veterinary practice.

Absence of evidence is not evidence of absence.

— Martin Rees

Improving your assessment, treatment, and prevention of pain in feline patients

By recognizing physiologic, physical, and behavioral signs of pain and employing a consistent pain scoring system, veterinary teams can improve their assessment of cats in need of analgesic therapy. And by administering FDA-approved analgesic drugs in multimodal protocols, veterinarians can provide effective pain relief for their feline patients.

Pet cats outnumber pet dogs in the United States, yet cats receive far less veterinary care than their canine counterparts.¹ Many factors have contributed to this divide, which greatly affects cats' quality of life. Nowhere is this more apparent than in the area of pain identification and control.

Worldwide, there is an unmet need for effective pain control in cats. Shockingly, several studies comparing postoperative pain management in dogs and in cats have highlighted the disparity. Following laparotomy — an invasive and painful procedure — performed by British veterinary surgeons, 71% of dogs received analgesia, but only 56% of cats

did, despite equal pain scores between the two species.² In another study in New Zealand, as few as 50% of cats undergoing castration received analgesia.³

And in a Brazilian study, demonstrating that pain is often underestimated in postoperative feline patients, cats received lower pain scores than dogs for common procedures such as laparotomy, orchiectomy,

and dental procedures.⁴ The direness of the situation has been summed up by leading feline experts, "Cats are popular pets but until recently their perioperative

and traumatic pain was seriously underestimated and undertreated."⁵

Why are cats undertreated for pain?

Cats are undertreated for pain for a number of reasons.⁵ Perhaps the most challenging are the difficulties in detecting pain in feline patients and the small number of FDA-approved analgesic drugs for use in cats. Other obstacles include the fear of potential adverse effects from some drug classes (nonsteroidal anti-inflammatory drug toxicity and opioid-induced mania) and the possibility of adverse effects or analgesic ineffectiveness related to cat-specific metabolic deficiencies (*i.e.* deficiency in the glucuronidation pathway). The difficulty of administering frequent treatments is another deterrent (cats can be difficult to medicate).

Difficulty detecting pain in cats

In human medicine, pain is called the 5th vital sign (in addition to heart rate, respiratory rate, arterial blood pressure, and body temperature). In veterinary medicine, pain is often called the 4th vital sign (because we don't often measure blood pressure in a routine physical examination). Why is pain considered a *vital* sign? Because pain is the main reason that people seek medical care and because of the importance of untreated pain:

- Pain is a stressor that can cause adverse effects throughout the entire body through physiologic responses to stress. Examples include tachycardia, hypertension, and gastrointestinal ulceration.
- Inadequately treated pain can lead to delayed healing through release of cortisol and activation of catabolism. Pain can also lead to anorexia and insomnia, and both have a negative impact on healing.
- Unrelieved acute pain can predispose the patient to the development of chronic pain.

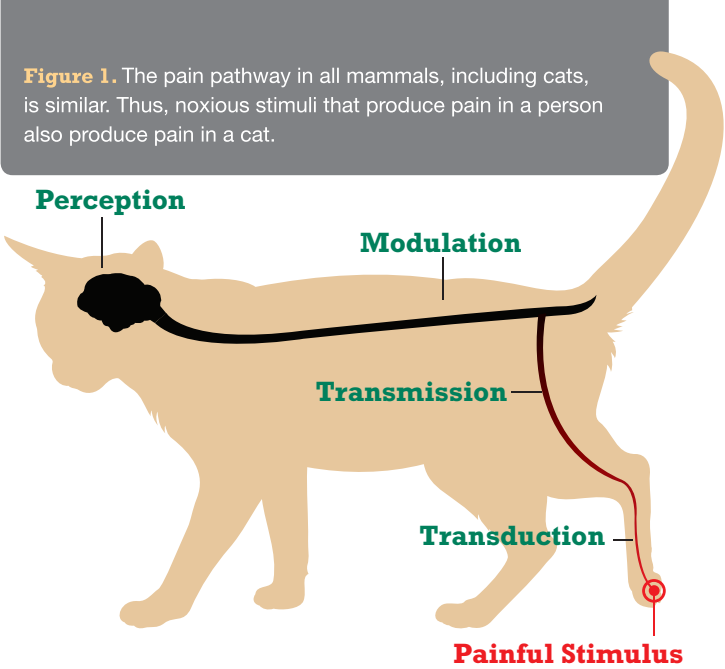


Figure 1. The pain pathway in all mammals, including cats, is similar. Thus, noxious stimuli that produce pain in a person also produce pain in a cat.

WHAT DOES THIS MEAN FOR VETERINARIANS?

Our patients feel pain too. The pain pathway is neuroanatomically similar in all mammals (**Figure 1**), so if a noxious stimulus causes pain in a human, it also causes pain in an animal. Pain is not the main reason that pet owners seek veterinary care for their animals, but the importance of unrecognized pain is the same in veterinary patients as it is in people. One reason that owners don’t seek pain relief for their pets is that pain is hard to recognize in animals. Animals try to hide pain since the survival instinct for concealing weakness still exists in pets. We must actively look for pain in our patients.

Of course, pain *prevention* is preferred and is best achieved with appropriate perioperative and post-trauma analgesia. As a leading veterinary pain management advocate has stated, “Veterinarians should no longer force patients to prove that they are in pain when *common sense* indicates that they might be.”⁶ But we must also

follow up our treatment with pain assessment since pain management is not a one-size-fits-all treatment, and there is individual sensitivity to both pain and analgesics.

LOOKING FOR PAIN

Since animals do not “tell” us about their pain level, we must “look for” pain (**Table 1**). We can use the other vital signs to aid in pain assessment. Since pain is a stressor, veterinarians can look for physiologic signs of stress: tachycardia, tachypnea, and hypertension. Also, changes in feline posture and gait can often be quite specific for pain. A tucked abdomen or hunched back usually indicates pain. Head down, neck stretched, ears back or flat, whiskers drooped, and tail down are all

Table 1. Signs that may indicate pain in cats

Physiologic Signs	Behavior Signs	Vocalization	Body Position	Gait (Locomotion)	Other Signs
Tachycardia	Any change in behavior (e.g. restlessness or reduced activity)	Growling	Head down	Lameness	Failure to groom
Tachypnea, Panting	Aggression	Hissing	Hunched body or tucked abdomen	Reluctant to move	Excessive grooming of painful site
Hypertension	Hiding or avoidance	Purring	Tail down	Walks with stiff gait	Failure to go outside to urinate or defecate
Arrhythmias	Seeks comfort, won't leave owner		Ears out to side	Walks with more weight on front or back legs	Failure to use litter box
Dilated pupils	Guards painful area and may snap if painful area is touched		Whiskers down	Pacing	Change in facial expressions
	Won't lie down, won't sleep		Lying in straight position rather than curled		Anorexia

signs that could indicate pain in cats. Body posture while recumbent is also important. For instance, cats generally sleep curled up, and cats that are lying stretched out may be experiencing pain. However, assessment of postural changes should be linked to a potential painful condition or event. A happy cat stretched out in the sun has no obvious reason to be experiencing pain. Animals that do not exhibit normal sleep behavior, especially those that do not want to lie down and sleep after surgery, may also be experiencing pain. Vocalization (meowing, growling, hissing) can be useful too but may be due to dysphoria. Cats in pain may even purr; so don't conclude that a purring cat is necessarily a pain-free cat.

FACIAL EXPRESSION CHANGES

Changes in facial expressions due to pain were not attributed to animals until recently. However, with the publication of the “rat grimace scales,”⁷ the ability to identify changes in facial expressions in animals has been validated, and expressions related to pain have been described in other species. Although there is no validated scale for cats, many of the components of the rat scale can be applied to recognition of pain in cats (**Figure 2**).

BEHAVIOR CHANGES

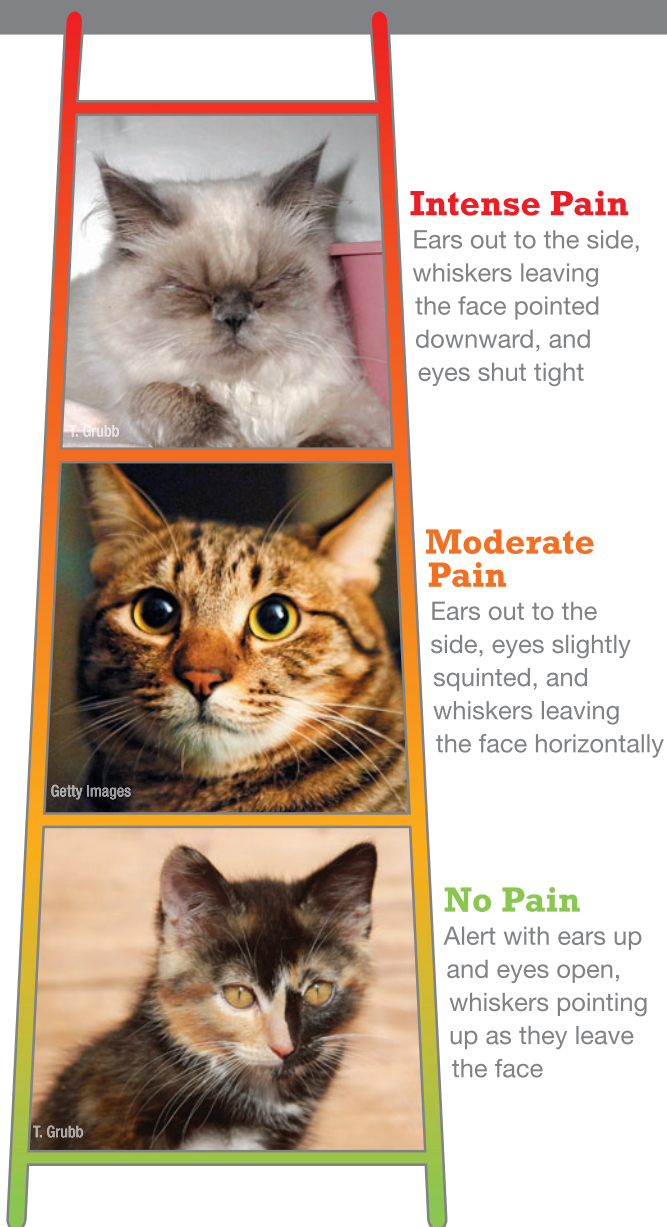
One of the most useful indicators of pain is a change in behavior. Of course, a change in behavior does not necessarily mean that the cat is experiencing pain, but a change in behavior that coincides with a painful event (e.g. surgery or trauma) should be investigated. Animals that were friendly may become aggressive or defensive, and those that were solitary may seek human companionship and comfort. The animal's behavior may even seem normal until the painful area is approached or touched, and then fear or aggression may be exhibited. The most useful way to determine whether or not an animal is in pain is to administer an analgesic drug and evaluate the response. For acute pain, administering an opioid is often the best option because of their rapid onset and high potency. If the patient's behavior returns to normal after treatment, then the diagnosis has been made — *pain*. Then the next step is to develop a treatment plan that will provide the patient with continued pain relief.

PAIN SCORING SYSTEMS

The best way to use all of the observations and clinical findings is to put them together in a pain score using one of the available scoring systems. In human medicine, pain scoring of patients is required by law in some countries, including in the United States.⁸ With human patients, pain level can be verbalized, whereas with veterinary patients, veterinarians and their trained staff have to rely on their perception of what the animal is either feeling or trying to hide. Thus, pain scoring is more difficult. However, if all of the categories on the score sheet are diligently assessed, pain — and especially the relief of pain after treatment — can be recognized in most patients. The consistency and accuracy of the scoring system can be improved with the implementation of some simple practices (**Table 2**).

There are many scoring systems, so each clinic can choose the one that works best for them. The two most commonly used systems in cats are the Colorado State University Feline Acute Pain Scale⁹ and the UNESP-Botucatu Multidimensional Scale.¹⁰ Both scales allow variables to be compiled and assigned a number. A simple numeric scale from 0 to 10 (e.g. 0 = no pain and 10 = worst pain) can also be used, but may be less robust than the

Figure 2. The ladder of pain in cats



other systems because there are no descriptors to help the assessor know what to evaluate.

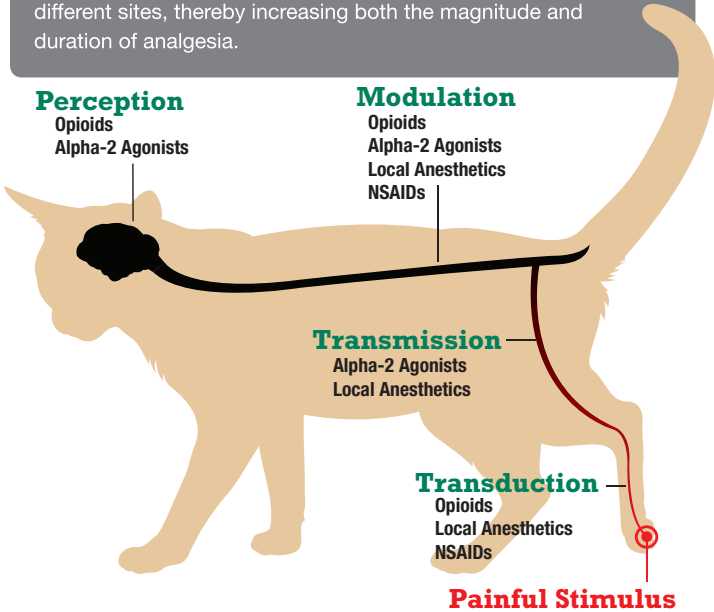
Drugs available to treat pain in cats

Addressing the small number of FDA-approved analgesic drugs for use in cats is important since FDA approval requires rigorous safety and efficacy studies in the target species. Compounded drugs do not undergo FDA review, and drugs that are FDA-approved for other species (e.g. people, dogs) do not have to undergo safety and efficacy studies in a species in which the drug may be used in an extra-label fashion. FDA-approved products provide assurance that a drug is safe and efficacious in the majority of animals in the target species, which assures veterinarians (and owners) that the most appropriate therapies are being used.

The number of FDA-approved drugs is important in pain management because multimodal analgesia (i.e. the use of drugs from different classes) generally improves both the analgesic potency and duration of pain relief. Multimodal therapy is superior to single agent therapy in part because different classes of analgesic drugs exert their effect at different locations in the pain pathway (Figure 3), thereby allowing their effects to be additive or even synergistic. Without adequate choices for multimodal analgesia, pain relief may not be optimized.

Six FDA-approved drugs are currently available to control acute postoperative pain in cats — two nonsteroidal anti-inflammatory drugs (NSAIDs), two alpha-2 adrenergic agonists, and two opioids. No drugs are FDA-approved to treat chronic pain in cats.

Figure 3. Multimodal analgesia is defined as the use of multiple drugs or drug classes that interact with the pain pathway at different sites, thereby increasing both the magnitude and duration of analgesia.



NSAIDs
The main advantage of the NSAID class of drugs is that the NSAIDs control not only the sensation of pain but also the source of pain (i.e. inflammation). This makes the NSAIDs a powerful and effective class of drugs. NSAID-induced analgesia is fairly long lasting, decreasing the need for frequent dosing.

The main disadvantage of the NSAID class is that the drugs can cause gastrointestinal, hepatic, and renal damage.¹¹ Cats may be more susceptible to NSAID-induced toxicity since the species has a deficiency in the glucuronidation pathway, which results in slowed metabolism of multiple drugs, including some NSAIDs.^{5,12} Slowed metabolism could lead to accumulation — and increased likelihood of toxicity — of inappropriately dosed NSAIDs.¹² This does not mean that NSAIDs should be avoided in all cats, but it does tend to limit their use to healthy cats and also makes it critical to

Table 2.

Tips for improving the consistency and accuracy of pain scoring in feline patients

Have the same person score the patient before and after a painful procedure (such as surgery) or before and after a pain-relieving treatment.

Take into account the patient's normal behavior before the painful experience.

TOUCH THE PATIENT! Open the cage door, handle the patient, interact with it, palpate the painful area — but do so gently and with respect for the fact that patients might become aggressive if you hurt them.

“Ask” the patient if it is in pain by using an analgesic drug, and then rescore the patient. Generally, changing the pain level (decreasing the pain with analgesics) is the best way to tell whether or not a patient is in pain.

Most importantly, have the whole team involved in pain management. The patient will get much better care if a team approach is used. It is especially important that veterinary technicians learn to assess pain and be given the power to be the patient's advocate.



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HUMAN SAFETY WARNING

Abuse Potential

SIMBADOL contains buprenorphine (1.8 mg/mL), an opioid agonist and Schedule III controlled substance with an abuse potential similar to other Schedule III opioids. Buprenorphine has certain opioid properties that in humans may lead to dependence of the morphine type. Abuse of buprenorphine may lead to physical dependence or psychological dependence. The risk of abuse by humans should be considered when storing, administering and disposing of SIMBADOL. Persons at increased risk for opioid abuse include those with a personal or family history of substance abuse (including drug or alcohol abuse or addiction) or mental illness (suicidal depression).

Life-Threatening Respiratory Depression

Respiratory depression, including fatal cases, may occur with abuse of SIMBADOL.

Additive CNS Depressant Effects

SIMBADOL has additive CNS depressant effects when used with alcohol, other opioids, or illicit drugs that cause central nervous system depression.

Accidental Exposure

Because of the potential for adverse reactions associated with accidental injection, SIMBADOL should only be administered by veterinarians or veterinary technicians who are trained in the handling of potent opioids.

See Human Safety for detailed information.

INDICATION: SIMBADOL is indicated for the control of postoperative pain associated with surgical procedures in cats.

DOSAGE AND ADMINISTRATION: The dosage of SIMBADOL is 0.24 mg/kg (0.11 mg/lb) administered subcutaneously once daily, for up to 3 days. Administer the first dose approximately 1 hour prior to surgery. Do not dispense SIMBADOL for administration at home by the pet owner (see Human Safety).

CONTRAINDICATIONS: SIMBADOL is contraindicated in cats with known hypersensitivity to buprenorphine hydrochloride or any of the components of SIMBADOL, or known intolerance to opioids.

WARNINGS: For subcutaneous (SQ) injectable use in cats.

Human Safety: Not for use in humans. Keep out of reach of children.

Because of the potential for adverse reactions, hospital staff should avoid accidental exposure and contact with skin, eyes, oral or other mucous membrane during administration. SIMBADOL contains buprenorphine, a mu opioid partial agonist and Schedule III controlled substance with an abuse potential similar to other Schedule III opioids. SIMBADOL can be abused and is subject to misuse, abuse, addiction and criminal diversion. SIMBADOL should be handled appropriately to minimize the risk of diversion, including restriction of access, the use of accounting procedures, and proper disposal methods, as appropriate to the clinical setting and as required by law. Abuse of SIMBADOL poses a hazard of overdose and death. This risk is increased with concurrent abuse of alcohol and other substances including other opioids and benzodiazepines. Buprenorphine has been diverted for non-medical use into illicit channels of distribution. All people handling opioids require careful monitoring for signs of abuse. Drug abuse is the intentional non-therapeutic use of a prescription drug for its rewarding psychological or physiological effects. Abuse of opioids can occur in the absence of true addiction. Naloxone may not be effective in reversing respiratory depression produced by buprenorphine. The onset of naloxone effect may be delayed by 30 minutes or more. Doxapram hydrochloride has also been used as a respiratory stimulant.

PRECAUTIONS: Hyperactivity (opioid excitation) has been observed up to 8 hours after anesthetic recovery (see ADVERSE REACTIONS). Safety has not been evaluated in moribund cats. Use in such cases should be based on the risk-benefit assessment of the veterinarian. Use with caution in cats with impaired hepatic function. The use of SIMBADOL has not been evaluated in breeding, pregnant, or lactating cats, or in cats younger than 4 months of age.

ADVERSE REACTIONS: In two controlled field studies, the following adverse reactions were reported.

Adverse Reactions in Two Field Studies

Adverse Reaction ^a	SIMBADOL (N = 224)		Control (N = 226)	
	During Surgery ^b	After Surgery	During Surgery ^b	After Surgery
Hypotension ^c	68 (30.4%)	51 (22.8%)	60 (26.5%)	40 (17.7%)
Tachycardia ^d	55 (24.6%)	73 (32.6%)	30 (13.3%)	44 (19.5%)
Hypothermia ($\leq 98.0^{\circ}\text{F}$)	38 (17.0%)	1 (0.4%)	47 (20.8%)	0
Hyperthermia ($\geq 103.0^{\circ}\text{F}$)	1 (0.4%)	91 (40.6%)	0	33 (14.6%)
Hypertension ^e	10 (4.5%)	40 (17.9%)	17 (7.5%)	18 (8.0%)
Anorexia	0	40 (17.9%)	0	35 (15.5%)
Hyperactivity	0	26 (11.6%)	0	11 (4.9%)
Reduced SpO ₂ ($\leq 90\%$)	8 (3.6%)	1 (0.4%)	11 (4.9%)	0
Bradycardia (≤ 90 beats/min)	5 (2.2%)	1 (0.4%)	4 (1.8%)	1 (0.4%)
Tachypnea (≥ 72 breaths/min)	0	5 (2.2%)	1 (0.4%)	6 (2.7%)
Arrhythmia	1 (0.4%)	1 (0.4%)	2 (0.9%)	0
Blindness	0	2 (0.9%)	0	1 (0.4%)
Apnea/Death	1 (0.4%)	1 (0.4%)	0	0
Ataxia	0	1 (0.4%)	0	0
Hyperesthesia	0	1 (0.4%)	0	0

a. Cats may have experienced more than one type or occurrence of an adverse reaction.

Cats experiencing the same reaction both during and after surgery are presented in both time periods.

b. During surgery is the time from the administration of the anesthetic induction agent until discontinuation of the gas anesthetic.

c. Hypotension is defined as a mean blood pressure of ≤ 60 mmHg during surgery and ≤ 90 mmHg after surgery.

d. Tachycardia is defined as a heart rate of ≥ 180 beats per minute during surgery and ≥ 200 beats per minute after surgery.

e. Hypertension is defined as a mean blood pressure of ≥ 120 mmHg during surgery and ≥ 160 mmHg after surgery.

To report suspected adverse events, contact Abbott Animal Health at 1-888-299-7416, FDA at 1-888-FDA-VETS or FDA online at <http://www.fda.gov/AnimalVeterinary/SafetyHealth>.

EFFECTIVENESS: The effectiveness of SIMBADOL was demonstrated in two randomized, masked, placebo-controlled, multi-site field studies involving client-owned cats of various breeds. A descriptive, interactive pain assessment system was used by the trained assessor over the 72-hour post-operative period to determine pain control, and treatment success was defined as a cat that completed the 72-hour post-operative period without rescue analgesia. A statistically significant difference ($P \leq 0.005$) in the number of successes in the treatment group over the placebo control group was observed. The results of two field studies demonstrate that SIMBADOL is effective and has an acceptable safety margin for the control of postoperative pain in cats.

HOW SUPPLIED: SIMBADOL (buprenorphine injection) is supplied in a carton containing one 10 mL amber glass vial. Each multidose vial contains 1.8 mg/mL of buprenorphine.

NADA 141-434, Approved by FDA

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Presented By Sheilah A. Robertson, BVMS, PHD, DACVA,
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adhere to the correct dose. However, NSAIDs should be a part of multimodal analgesic therapy whenever appropriate.

ALPHA-2 ADRENERGIC AGONISTS

The alpha-2 adrenergic agonists are commonly thought of as potent sedatives, but they are FDA-approved as sedative analgesics. The provision of both sedation and analgesia is useful when the patient requires preoperative sedation or sedation for painful diagnostic procedures or medical treatment. The effects of alpha-2 agonists are reversible, adding to the safety of the drug class. However, the reversal drugs for this class are not FDA-approved in cats. The main disadvantage is alpha-2-mediated vasoconstriction, which can cause decreased cardiac output, increased cardiac work, and a reflex bradycardia. This has minimal clinical impact in patients with healthy hearts but may exacerbate pre-existing disease in patients with cardiovascular dysfunction. The other clinically relevant disadvantage is that the duration of analgesia is fairly short. The alpha-2 agonists are an excellent component of perioperative multimodal analgesia.

OPIOIDS

Opioids are the most widely used drugs for treatment of acute pain in many species. Opioids have many advantages:

- They are the most potent class of systemically administered analgesic drugs.
- They have a high safety margin.
- Their effects are reversible (although the reversal agent is not FDA-approved in cats).

The main disadvantages of opioids are generally of minimal clinical significance. Opioids may cause excitement in cats; however, the profound opioid-induced dysphoria ("morphine mania") does not occur at clinically appropriate dosages. Opioids may also cause sedation, but this is usually minor and is actually a desired effect when the drugs are administered before anesthesia. Opioids have been implicated in anorexia, slowed gastrointestinal motility, respiratory depression, and hyperthermia. All of these effects can occur sporadically but are generally mild, self-limiting, and of minimal clinical importance in most healthy cats. The drugs with FDA approval for analgesia in cats (an opioid agonist-antagonist and a μ opioid partial agonist) are less likely to cause these effects than the full opioid agonists, which are not FDA-approved for use in cats. Of the two FDA-approved opioids for cats, one (butorphanol; a partial opiate agonist/antagonist) has a duration of antinociceptive action of only 90 minutes (range 15 minutes to 8 hours),¹³ while the other (buprenorphine; a partial μ opiate agonist) has a duration of 24 hours (see the Simbadol® Brief Summary on page 6 and Simbadol® Important Safety Information at right). The other buprenorphine products approved for use in people and used extra-label in cats have a duration of action of 4 to 8 hours.¹⁴ Choosing drugs with a longer duration of action requires less frequent dosing, which may improve analgesic therapy in patients that are difficult to medicate.

INDICATION: For the control of postoperative pain associated with surgical procedures in cats

IMPORTANT SIMBADOL (buprenorphine injection) SAFETY INFORMATION

WARNINGS, PRECAUTIONS and

CONTRAINDICATIONS: Due to serious human safety and abuse concerns, including physical or psychological dependence, life-threatening respiratory depression and additive CNS depressant effects, read the full prescribing information before using this drug, including the complete Boxed Warning. Not for use in humans. Hospital staff should be trained in the handling of potent opioids and should avoid accidental exposure. For subcutaneous (SQ) injectable use in cats. Opioid excitation has been observed up to 8 hours after anesthetic recovery. Use with caution in cats with impaired hepatic function. SIMBADOL has not been evaluated in breeding, pregnant, or lactating cats, in cats younger than 4 months of age or moribund cats. Do not use in cats with known hypersensitivity to buprenorphine hydrochloride or any of the components of SIMBADOL, or known intolerance to opioids.

ADVERSE REACTIONS: In two controlled field studies, the most frequent adverse reactions with SIMBADOL were hypotension, tachycardia, hypothermia, hyperthermia, hypertension, anorexia, and hyperactivity. Less frequent but serious adverse reactions included two deaths following apnea and two reports of presumptive post-anesthetic cortical blindness. See the full prescribing information for a complete list and additional details of adverse reactions for each field study.

Opioids are also versatile and can be administered by many routes. In general, intravenous or intramuscular dosing is preferred over subcutaneous dosing since opioids, including buprenorphine, delivered by the subcutaneous route are poorly absorbed.¹⁵ However, FDA-approved opioids for cats are labeled for subcutaneous injection only. The FDA-approved buprenorphine (Simbadol® — Abbott Laboratories) for cats is designed for subcutaneous delivery and the pharmacokinetics support the efficacy of this particular opioid by this route (see Simbadol® Brief Summary on page 6). The dose (0.24 mg/ml) and concentration (1.8 mg/ml) of this product are vastly different from the buprenorphine products approved for use in people and used extra-label in cats. It is the novel combination of formulation, dose, and concentration that allows subcutaneous dosing once every 24 hours to provide effective pain relief in cats.

Key points

Cats feel pain and pain can add to morbidity. However, since cats are masters at hiding pain, it is necessary to look for and assess pain in feline patients. Evaluating physiologic, physical, and behavioral signs of pain, especially when assessed by using a pain scoring system, can help veterinarians identify patients that need analgesic therapy. Often, the best way to identify pain is to administer an analgesic drug and monitor the patient's response to treatment. Ideally, all practices should utilize a pain scoring system and a team approach to pain management. Optimizing the care of feline patients requires that every person in the clinic be part of the pain management team and be trained to identify and score pain level in cats, and that the clinic establishes a pain prevention and treatment protocol for all surgical patients.

The FDA-approved analgesic drugs available are best used in multimodal protocols to maximize their effectiveness for pain relief in cats. FDA-approved drugs go through rigorous safety and efficacy trials in the target species, and these drugs should be the first choice for treating patients. Drugs such as the FDA-approved buprenorphine (Simbadol® — Abbott Laboratories) are specifically designed for cats, with the necessary safety and efficacy data to ensure that appropriate care is provided for cats experiencing pain.

SUGGESTED READING

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MEDICINE | Behavior

Can *hyper* dogs become *happy* dogs?

Why and how to investigate your canine patients whose overactivity drives their owners up the walls. *By Karen L. Overall, MA, VMD, PhD, DACVB, CAAB*

For a dog that can never sit still, life is risky. Dogs that wander are hit by cars. Or, when human tolerance for a bouncing, roaming dog wears thin, it's dumped at a shelter. Extremely active dogs worsen in the confines of a shelter—a formula for misery and early death.

The word *hyper* dogs seem to be everywhere. “My dog is too hyper!” has become one of the most common com-

plaints I hear. Why are dogs “hyper,” and what can be done to help them?

Increased exercise is the wrong place to start, despite a trend to address all behavioral complaints with dogs this way. The best practice of behavioral medicine starts in the same place as all other parts of a veterinary evaluation: taking an exhaustive history, listening to the clients and observing the dog carefully in person and via video.

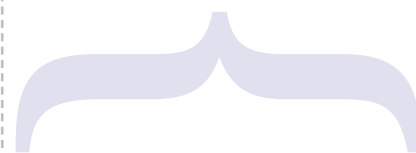
Understanding the complaint

The adjective *hyper* could describe anything from a herding dog puppy locked in a crate 23 to 24 hours a day to a 3-year-old pug belonging to a 75-year-old owner who is too arthritic to bend down to the dog. Context is everything, and there are three aspects that contribute to how the dog's behavior is perceived:

1. The client's expectations and abilities.
2. The dog's age and breed.
3. The dog's stimulatory environment.

Notice that *the dog has control over none of these*. Understanding the relative contributions of these factors will help clients understand the range of “normal” behaviors, and it will also help veterinarians and clients recognize when behaviors deviate from normal. Often just knowing whether a behavior is either normal or extreme is enough for the client—it gives them a context in which to root the dog's behaviors. But for clients to make progress, veterinarians need to conduct full behavioral assessments.

In addition to the dog-centric components, behavioral assessments should include human-centric components. Which behaviors do the clients like, which don't they like and which ones confuse them? These questions can be answered through direct or video observation and discussion. If clients take a video of a day in the life of the dog, with an emphasis on all the circumstances in which the dog is “hyper,” the veterinary team will have the context in which to discuss both the dog's behaviors and the client's desires. Only when you can clearly define the behaviors that the dog exhibits (e.g., jumping, pawing, pacing, barking, getting into things) and the circumstances in which



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these occur can you decide, given the three factors above, whether the dog is behaving normally. A description by the client is an essential part of any history, but clients' interpretations are subjective and can be wrong—clients who have mouthy, playful puppies often describe them as “aggressive.” Behavioral observations—especially if they are videotaped—provide objective data, allowing the veterinarian to review what's normal, what's problematic and how best to intervene.

Managing client expectations

Regardless of whether a dog's behaviors are normal, client expectations are key to keeping a dog in the home, and clients can adjust their expectations if they have data. Veterinarians should consider themselves as sources of reliable behavioral data and understand that their main role in engendering client compliance is education.

Dogs are their own individuals and, like people, their individual makeup is more important than any beliefs about breed, sex, litter and family. Every study that has measured dog personality over time has found as much or more variation across individuals than when litters, lines or breeds are compared.

Roles for age permeate many behavioral myths. We have the impression that somewhere between 2 and 3 years of age dogs grow up and slow down. In truth, there are few to no reliable data on breed- and age-associated behaviors, and some dogs don't “slow down.”

The jobs for which breeds were selected may provide a guide, but clients should understand that folklore is no

substitute for measurements. Breeds and families selected for active hunting (e.g., English setters) and carting (e.g., Vizslas) may have been selected for endurance, but they may not take more steps per day than does an excitable Yorkie. We don't know because no one has objectively measured activity across breeds, ages and lifestyles. Herding breeds are said not to kennel well, but the distress that they feel in shelters could be as much about social and cognitive stimulation than it is about a need for physical exercise. Labrador retrievers are frequently viewed as the most constant and gentle of companions, but when they are wired (and there are lines of very active and reactive Labs), this impression has nothing in common with reality.

All of these dogs can have their behaviors changed through learning, but learning doesn't give you a completely different individual. Learning produces a different skill set in the same individual. Understanding that dogs can change their skill sets can be enough to keep dogs with people who might have considered relinquishment.

Here's what we actually know.

1. Puppies are mouthier and less inhibited than adult dogs. They may seem more active, but they have frequent wake and sleep cycles, and there is a lot of variation between pups in activity levels. Very active pups get into situations humans consider problematic more than do laid-back pups.
2. Dogs undergo brain changes at social maturity (which can start as early as 10 to 12 months and end as late as 24 to 36 months) and can appear completely different than they

did before undergoing maturity.

3. Social maturity appears to be a period of neuronal pruning and remodeling in multiple parts of the brain. True behavioral pathologies can become apparent after this.
4. By 2 to 3 years of age, the dog you see is pretty much the dog you get. If the 2-year-old is calm, the 7-year-old will be calm. If the 2-year-old is active, the older dog may be quite active.
5. Active, curious dogs can stay active and curious into old age, provided that someone cares enough to commit to meeting the behavioral and mental health needs of the dogs throughout their lives. In fact, working dogs that keep working live longer than working dogs that retire.
6. Breed plays a role in the types of broad behavioral patterns dogs exhibit, as does purpose. For example, working dogs of any breed tend to be quite different from pet dogs. In addition, clients should ensure that they know which types of lines their dogs are coming from if they are buying purebred dogs. A client who wants a pet beagle to cuddle is going to be disappointed in a hunting beagle. A border collie whose parents and grandparents worked stock may be more interesting looking than a pet or conformation border collie, but it may also have behaviors that are too interesting for the average household.

Choosing the correct “hyper” diagnosis

Whether a dog is normal or abnormal in its reactivity and activity, the key to engendering relative calm is to keep the dog below its threshold for reaction.



Table 1: Differentiating among the various “hyper” diagnoses in dogs

		Overactive	Generalized anxiety disorder	Hyperactive/hyperkinesis	Hyperreactive	Attention-seeking behavior
FEMALE	Can settle	X			X	X
	Diarrhea may be common		X			X
	Signs of sympathetic arousal when resting			X		
MALE	Vigilance and monitoring		X			
	Resolves with increased exercise	X				
	Distress is a primary sign		X			X

This is easy for a calm dog, and any amateur can do it—most environmental stimuli are below the level that will cause them to react. But for dogs with behavioral pathologies such as overactivity, generalized anxiety disorder (GAD), hyperreactivity, hyperactivity/hyperkinesis and attention-seeking behavior, even normal, common levels of stimuli can be problematic (Table 1). All of these diagnoses involve “hyper” dogs, but teasing them apart and becoming comfortable with the patterns that separate them will help both veterinarians and clients recognize these dogs early, when treatment is easiest.

Overactive dogs. These are the easiest of this group to manage. Overactive dogs display excessive motor activity that resolves with increased aerobic activity and interaction. These dogs can lie down, can sleep through the night and can relax, but they are always ready to go. And their exercise periods may be cut short because they are painful or exhausting for the humans.

This is a management-related “diagnosis” that is contingent on the age of the dog, the age of the client, the breed of the dog and the dog’s social and physical environment. These dogs may have needs in excess of what most people would consider normal, but redress is as simple as meeting those needs.

The test for overactivity is simple: Have the client determine how much sustained exercise is required for the dog to change its behavior. Endurance and aerobic scope increase with conditioning, but most overactive dogs live relatively sedentary lifestyles. If an extended walk at a pace that requires deep breathing for at least 10 to 15

minutes improves the dog’s behavior, the dog is likely overactive. Fine-tuning the type and duration of exercise needed to render the dog as calm as possible or as calm as the client prefers can be a challenge, but once any change associated with exercise can be seen, clients just have to keep a chart of length of activity, type of activity, and heart and respiratory rates of the dog every five to 10 minutes, and they will understand to what lengths they must go to meet the dog’s needs.

Generally, when clients collect this type of information, they become more sympathetic and empathetic to the dog. The challenge arises if the client cannot meet these needs. Dog walkers and doggie daycare facilities that include appropriate, supervised play groups can help meet these dogs’ needs. Clients whose means are limited may wish to see if there are any older children and young adults who cannot have a dog but who would like to exercise their dogs on a regular basis. Finally, indoor games involving rolling and retrieving balls (physical exercise) and finding substances using their nose (cognitive exercise) can help meet these dogs’ needs in a worst-case scenario. The sessions will need to be fairly long and frequent, but if the dog and human understand one another, this less-than-ideal situation can be made to work.

Generalized anxiety disorder. For dogs with this diagnosis, the issue is not exercise. In fact, afflicted dogs should have worn themselves out by activity compelled by their vigilance. Instead, they monitor the world until exhausted, and then they may have multiple bouts of nonrestorative sleep until some stim-

ulus that others would consider benign or nonexistent again arouses them. Dogs with GAD worry and consistently show increased autonomic hyperactivity and hyperreactivity, increased motor activity, and increased vigilance and scanning that interferes with a normal range of social interaction in the absolute *absence* of any specific provocative stimuli. Clients comment that these dogs show heightened monitoring and attentiveness to any environmental and social stimuli. When the inciting stimulus is present, these dogs show signs of autonomic arousal that clients can note (e.g., panting, increased heart rate and respiratory rates, mydriasis). Clients complain

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that these dogs are easily distracted and don't seem to be able to concentrate or pay attention. If the dogs are calm, the dogs can pay attention and can learn, but the reactivity gets in the way of learning normal behaviors. Because of the heightened reactivity, dogs with GAD often have secondary diagnoses involving aggression. If they were not so reactive and could attend more to the context, the aggression would not occur.

The danger with a diagnosis of GAD is that it is very specific but could carelessly be made in the absence of critical thought or incomplete history. Accordingly, it should be a diagnosis of last resort, not first, and all of the signs should concomitantly be present under conditions where any of these signs would have subsided in a normal or asymptomatic animal. This caution does not mean that the condition may not be common. GAD is likely very common, especially in breeds or individuals that have been selected for faster response times.

If we are interested in accurately describing behavior so that we can understand mechanism, the ability to label and understand a condition discretely is nowhere more important than it is here. GAD is first and foremost an anxiety-related condition. And the most common nonspecific sign, which is likely to be overlooked and classified as a catch-all medical diagnostic category—irritable bowel syndrome (IBS)—is diarrhea. Dogs with overactivity, true hyperactivity and hyperreactivity do not usually experience periodic and recurring diarrhea. Dogs with pathological attention-seeking behavior may experience recurrent diarrhea if their caregiver does not routinely and expeditiously give them the attention sought. We would benefit from knowing how many animals displaying IBS have other behavioral signs of anxiety.

If clients can keep a log (or video) of their dogs, they can set the lower bound for stimulation (e.g., the dog reacts faster and to a greater level when little kids are playing than when older kids are), which will be helpful as we work to teach the dogs that not reacting feels better to the dogs. These dogs are particularly anxious in novel environments (a park, the veterinarian's office) and will not lie down and rest until they are exhausted, which can take more than an hour. Clients are worn out

by the dogs' pacing and arousal, and everyone becomes cranky. Veterinarians and clients should keep a record of how long it takes dogs to sit or lie down in different circumstances. Patients that do not have GAD usually at least sit or lie down within the first 10 to 15 minutes of a behavior consultation, but dogs with GAD may still be vigilant and pacing after an hour. Worse yet, exercise may slightly change the threshold for arousal but leave the vigilance and reactivity relatively unchanged.

Hyperactivity/hyperkinesis. This diagnosis involves motor activity in excess to that warranted by a dog's age and stimulation level and that does not respond to "correction," redirection or restraint. For true textbook hyperkinesis to be diagnosed, there is an additional requirement of sympathetic signs (increased heart rate, increased respiratory rate, vasodilation), even when at rest. These signs, when present, should occur in the absence of other signs or significant laboratory data associated with thyroidal or other somatic disease.

Affected dogs are reported to never seem to sit down or settle and always have some signs of sympathetic arousal—slightly elevated baseline heart rates and temperatures and dilated pupils. Affected dogs have been said to arouse easily and appear to sleep less and less deeply, although this has not been measured. Affected dogs change their focus frequently, but this may be because they encounter a lot of stimuli that trigger sympathetic arousal. The hallmark of true hyperactivity is not attentional focus, but sympathetic arousal. The original definition of hyperkinesis in dogs focused on this sympathetic arousal, and dogs were considered hyperkinetic/hyperactive *only* if they responded to treatment with 0.2 to 1 mg/kg methylphenidate with a 15% decrease in heart and respiratory rates 75 to 90 minutes after treatment.¹

Hyperreactivity. Hyperreactivity may best be characterized as a physical and behavioral response to some perceived external stimulus (e.g., a sound or smell), activity or social stimulus that is out of context given the stimulus, or extreme in form, frequency, intensity or duration. Affected dogs usually have a low threshold for reactivity and extremely rapid arousal. Signs may include vocalization, extreme motor

activity, inattention to signals, lack of focus and sympathetic arousal in response to extreme activity. But these dogs do not meet the hyperkinetic criteria of true, aberrant, sympathetic arousal and aberrant baseline sympathetic functioning.

Before making this diagnosis it is important to ensure that the dog is not overactive (inadequately exercised or stimulated) and that it does not have GAD. Unlike dogs with GAD, dogs that are truly hyperreactive may not be distressed. Instead, they appear hypersensitive to anything that arouses them and behave with a motor energy and lack of focus that is annoying to people. The clients may complain that they cannot train their dogs without their dogs becoming aroused, so the question of lack of focus is usually raised but seldom quantified (see discussion in the section on hyperactivity). Hyperreactive dogs may not start out as anxious, but anxiety can develop as a sequela. Here, the reactivity becomes reinforced and learned at the molecular and neurochemical levels, lowering the threshold for reaction regardless of context and stimulus level.

Hyperreactive dogs may destroy parts of the house or items in the house, but not just when left alone. They destroy secondary to their extreme motor activity and apparent lack of focus—why go around the table if you can go over or through it? These dogs may injure people by jumping on them, grabbing at them and bowling them over because they do not seem to be able to stop long enough to realize that these events are occurring and may be a problem for the people. In fact, these dogs appear to become more aroused the more such interactions occur. Clients will often note that these dogs become "overexcited" very easily and then are unable to relax or focus. These dogs are often described as having a lot of "environmental sensitivity," which can either cause them to completely shut down and respond to little (except escape) or become aroused in excess of what's appropriate given the context.

Attention-seeking behavior. Part of the social condition is to seek and return attention. When seeking of attention is out of context and unaffected over time by the attention received, it is time to start thinking of attention-seeking behavior as a poten-

tial pathology. “Bratty” dogs may have their humans well-trained, but if they fail to get attention they either move on or cope. Dogs with truly problematic attention-seeking behavior are distressed and use vocal or physical behaviors to obtain passive or active attention from people when the people are engaged in passive or active activities not directly involving the dogs. These dogs need not have separation anxiety or be “hyperattached.” They need attention more than they want it because no amount of attention redresses their distress. Common signs may include vocalizing (barking, whining, crying, howling), jumping, pawing or grabbing, chewing on or using any other behavior in a context solely designed to redirect people’s attention to the dog. These dogs become more distressed the longer they are forced to seek attention, and the distress does not completely abate with the attention. Unlike for GAD, the focus of the anxiety and monitoring here is solely the dog’s caretaker of the moment.

Treatment options

So now that we have taught clients to understand normal activity and to recognize deviations from it, how can we help these dogs?

Because so many of these dogs have taught themselves to be more reactive as part of a self-reinforcing series of behaviors, medication is always a part of treatment in full-blown cases. Generally, both norepinephrine (NE) and 5-HT receptors are involved in the behaviors associated with most anxieties. However, the relative contributions of each type and subtype of receptor may vary among patients, so any particular medication’s ultimate effects may be determined by the overall distribution of those medications in the specific patient’s brain. Medications to which dogs with GAD, hyperreactivity and attention-seeking behavior best respond include:

- Gabapentin, alone or in combination with tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRIs), or both. Gabapentin is ideally suited to decrease overall arousal and nonspecific anxiety levels with few potential side effects.
- TCAs (clomipramine, amitriptyline if in combination with an SSRI) will affect both NE and 5-HT subtype receptors.

- SSRIs (fluoxetine, sertraline, fluvoxamine) primarily affect the 5-HT_{1A} subtype receptor and thus may exert their largest effects in the hippocampus and cortex in regions involved in learning. As such they should speed the acquisition of new, more suitable coping behaviors taught through

behavior modification and also modulate arousal level.

- Serotonin antagonist and reuptake inhibitors (SARIs) such as trazodone affect 5-HT_{2A} subtype receptors, which are commonly involved in anxiety-related conditions involving repetitive movement.



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¹ Cerrato S, Ramió-Lluch L, Fondevila D, et al. (2013). Effects of Essential Oils and Polyunsaturated Fatty Acids on Canine Skin Equivalents: Skin Lipid Assessment and Morphological Evaluation. *Journal of Veterinary Medicine*. 1-9.

² Blaskovic M, Rosenkrantz W, Neuber A, et al. (2014). The effect of a spot on formulation containing fatty acids and essential oils on dogs with atopic dermatitis. *The Veterinary Journal*. 199(1):39-43.

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Early recognition through testing

Given the problems that being “hyper” causes for humans and dogs, focus on early recognition and intervention would seem logical. Early recognition is especially important once you understand that the most likely epigenetic effects plaguing stressed puppies or those with stressed moms (e.g., puppy mill dogs, dogs born into shelters or on the street, dogs separated from their mothers before 8 weeks) are neurodevelopmental ones that result in heightened reactivity. Unfortunately, we have failed to develop valid, repeatable and broadly applicable tests of attentiveness and focus. Such tests would not be hard to develop and would be the first step in truly assessing the morass and complaints that form the overactivity-hyperactivity-hyperreactivity spectrum.

Tests fall into two broad categories: functional assays that can be profoundly affected by culture, environment, and any training, learning and previous experience (both in terms of attending to cues and learning to ignore them) and biobehavioral or neurophysiological measures or potential biomarkers that are more independent of experience, culture and environment.

- > The amount of time that a dog will spend searching for a ball is one test of focus used in working dogs. As a caveat, the dog in question must be extremely interested in balls and playing with them, and for the dogs for which this is a suitable test, the ball should be a preferred reward.
- > The amount of time a dog requires to learn certain requests (e.g., sit, down) could be standardized for testing conditions, age and breed and provide some baseline data on how variable the breed is and how breeds vary.
- > The amount of time a dog will sit and look at you for a treat that the dog knows you are holding can be one measure of attentiveness or focus in a dog that is highly motivated for food.
- > The amount of time that a dog will sit and look at a person’s face searching for cues about what is expected could evaluate an extreme form of focus, were the conditions under which the test was done controlled (which would include such things as posture, tone) and were data on the dogs recorded and evaluated in a way meaningful to the dogs. Implicit in this is an understanding that human culture matters and dogs that are raised in apartments may not be the same as dogs that are raised on farms.
- > Increasingly, responses to passing dogs or cues on computer screens have been used to assess variation in attentional focus in dogs in experimental studies concerning learning, but in terms of evaluating whether dogs on the overactivity-hyperactivity-hyperreactivity spectrum have some reliable deficits in attention or behaviors indicative of these is unknown.
- > Neurobehavioral measures such as pupillary flickers or eye movements are underexplored in dogs but may hold great promise.

- > Central alpha agonists such as clonidine stimulate central NE receptors and thus modulate NE receptors in the peripheral vasculature, decreasing the agonistic sympathetic response. Depending on the level of the arousal response they may be helpful. When used with TCAs, which also potentially increase central NE or the efficiency of its receptor actions and turnover, clients should be asked to watch for side effects, including agitation, that can result from increased central NE concentrations.
- > Benzodiazepines (alprazolam, clonazepam) may be helpful if there is concomitant noise reactivity or phobia or if a dog’s reaction to a specific stimulus or set of stimuli is extreme. Benzodiazepines affect the reticular activating system and may help to engender a lower reactive state, in general. Benzodiazepines can be used as outlined in the protocols for noise or storm phobia and panic.
- > Because the diarrhea may be a nonspecific sign of arousal, loperamide may be beneficial as needed since it will decrease a physiological component of arousal.

Management is always important in these conditions, and any humane intervention that can keep the dog in question below its threshold for reacting should be tried. The use of

harnesses and head collars may help minimize the damage that these dogs can do in interacting with humans and animals. Any tool that appears to help the dog attend more to people (eye shades, ear muffs) can be used as long as it does not hurt, punish or scare the dog.

All dogs benefit from the basic behavior modification programs, but some may require medication beforehand so that they can attend to learning replacement behaviors for the obnoxious and dangerous ones they usually exhibit. These reactive dogs are already using a set of rules that fail to help them understand and manage the world. If we can provide them with new rules that allow them to control their reactivity (which is what behavior modification is), they can learn that they feel better and have better interactions when they are less reactive.

What other interventions may help?

- > In desperation, some clients may have tried some fairly severe control techniques including extensive and inappropriate crating, which usually makes the dogs worse; nonjumping harnesses, which may injure active dogs; and electric shock to stop the dogs. None of these are likely to be effective but their discussion or use can be a gauge of the extent to which these dogs are disrupting the household.

- > The effectiveness of interventions such as massage, pressure, using an underwater treadmill (provides constant, mild compression because of the way the water moves) and pressure wraps is not known, although some data suggest that with repeated use, wraps may decrease reactivity to certain stimuli.²
- > At first, the presence of other dogs is unlikely to help because these patients are too reactive to focus on them. As the affected dogs begin to improve, they may play more and become more able to use nonreactive dogs as models for calmer behaviors and sensors for true risk.

Monitoring treatment

How can we tell if treatment is working? As these dogs improve, clients may note that they begin to gain weight, despite the same diet. Clients can be instructed to watch for weight gain as a sign that the dog is no longer patrolling so much as part of its need to be hypervigilant. Clients may also note that if there are multiple dogs in the house, all dogs seem calmer and may play more as the GAD or other hyperactivity diagnosis resolves or is controlled. Finally, clients may note that they, themselves, are calmer, and if they care to measure it they will learn that there is less noise and dogs are quicker to both seek them out for input and more quickly respond to signals to calm.

Last words

When dealing with conditions in which diagnostic criteria appear to drift, we should adequately represent what we know and don’t know to clients. With such diagnoses, the roles for logical thought, putative mechanisms and the use of a diagnosis as a hypothesis to be tested cannot be overstated. Clients are excellent observers and data collectors, if we tell them what to look for. Furthermore, by better watching their dogs they come to better understand and empathize with them, and the extent to which those two factors contribute to successful outcomes is nontrivial. **dvm360**

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Dr. Karen Overall, researcher at the University of Pennsylvania, has given hundreds of national and international presentations on behavioral medicine. She is a diplomate of the American College of Veterinary Behavior (ACVB) and is board-certified by the Animal Behavior Society (ABS) as an applied animal behaviorist.

NVRT simulates veterinary mission during multi-disciplined response training

The National Veterinary Response Team prepares for disaster.

Natural disasters can wreak havoc on a community, sometimes affecting thousands, even millions of citizens in any given area. Oftentimes this means that animals—both pets and farm animals—will also suffer.

Recently, more than 30 members of the National Veterinary Response Team (NVRT) joined more than 100 state, local and federal responders from across the U.S. at FEMA's Center for Domestic Preparedness (CDP), in Anniston, Alabama. The NVRT is part of the National Disaster Medical System (NDMS) and specializes in supporting communities after a disaster by providing medical care for both large and small animals.

"One of our priorities is to support communities and we appreciate that animals are integral to communities as they respond and recover from a disaster," said Dr. Andrew Garrett, director of the National Disaster Medical System. "A person has to look at the whole picture of what a community needs and we try to meet those needs when requested to assist."

The CDP incorporated the veterinary team into its Integrated Capstone

Event (ICE), a culminating exercise that combines multiple courses and



Members of the National Veterinary Response Team (NVRT) examine symptoms from pets following a simulated disaster.

response disciplines. The CDP coordinated with the local humane society to include live animals in the disaster scenario. While other hospital or

healthcare personnel worked to receive injured and care for human patients

in one location, the local animal shelter helped simulate the veterinary mission, following a disaster, in another.

"Building on knowledge based skills is always helpful and it is important to know that the NVRT is distributed all over the country," said Dr. Robin Brennen, veterinarian and NVRT team commander from New York. "We don't always train together. So coming here to a central point builds teamwork, allows us to work face-to-face and solve problems together. Training is critical because otherwise, short of a disaster, we don't have this opportunity."

This training was the first time the NDMS was able to include a local setting such as an animal shelter in training, including emergency responders from other disciplines. The training provided an opportunity to share best practices and communicate in a simulated disaster response. Training at the Center for Domestic Preparedness is fully funded. To learn more about the CDP and its training, visit cdp.dhs.gov or call 866-213-9553. **dvm360**

Lenhart joins AVMA as chief marketing officer

Brand positioning and marketing programs are key initiatives.

The American Veterinary Medical Association (AVMA) recently announced Mark Lenhart as its chief marketing officer.

Lenhart has more than a decade of marketing and communications experience. He is responsible for leading the AVMA's marketing and communications functions, which include positioning the AVMA brand and implementing marketing programs across the association.

"I'm thrilled to be coming to the AVMA at a time when marketing and communications is so critical to our members and the public at large," Lenhart said. "These are exciting

times in veterinary medicine and for the AVMA, and we are committed to helping meet and exceed the changing needs of our



Mark Lenhart

excited to help them tell their story."

Lenhart has served in a variety of executive-level positions, with veterinary industry experience as distribution marketing manager at Abbott Animal Health. He's a member of the Presi-

dent's Advisory Council of the Chicago Chapter of the American Marketing Association and served as the Chicago AMA's president from 2005 to 2007.

"We are excited to have Mark join the AVMA during a time when we are refocusing our efforts both internally and externally so that we can continue to build a stronger AVMA that is focused on delivering the products and services most relevant to our 85,000 members," said AVMA CEO Dr. Ron DeHaven. "Mark brings a wealth of experience that will help us promote and advance a strong veterinary profession that meets the needs of our members and society as a whole." **dvm360**

Virginia Tech establishes collaborative research network for clinical trials

Specialty practices and board-certified specialists come together.

When 7-year-old miniature schnauzer Leyna was having seizures, her worried owners, Matthew Moore and Frank Saltarelli of Washington, D.C., took her to their local veterinarian. There they learned that Leyna had an



Miniature schnauzer Leyna participated in a clinical trial that successfully treated a brain tumor.

aggressive glioma brain tumor.

After a consultation with Bush Veterinary Neurological Services, Moore and Saltarelli learned about a clinical trial at the Virginia-Maryland College of Veterinary Medicine at Virginia Tech in Blacksburg, Virginia, for dogs with gliomas. They decided to enroll

Leyna in the clinical study and now, three years later, she is not only still alive, but thriving.

The college is now expanding enrollment in clinical trials like the one that helped Leyna. This summer, a collaborative research network was formed to enable specialty practices in Virginia and Maryland to participate in the veterinary college's cutting-edge research.

"Because the number of cases seen in the greater Washington, D.C., Richmond, and Baltimore areas far exceeds the number seen in Blacksburg, the establishment of this specialist referral network is already increasing our ability to complete clinical trials quickly," said Mindy Quigley, clinical trials coordinator at the veterinary college. "By increasing the number of cases within our studies, the results and findings will have greater scientific merit."

The collaborative research network brings together specialty practices with advanced services such as 24-hour emergency care, on-site diagnostics, on-site cross-sectional imaging, and board-certified specialists in the college's major research areas.

Andrew Furtado, administrator at the Chesapeake Veterinary Referral Center, explained that his center joined the Collaborative Research Network "because we are excited by the opportunity to offer our patients access to cutting-edge research."

He added, "We hope that the clinical studies we participate in will generate new and innovative treatment options to help animals live longer and more productive lives."

Dr. John Rossmesl, the neurologist at the veterinary college who treated Leyna, used electrical currents to deliver cancer-fighting medication past her blood-brain barrier. He is now testing a new chemotherapy drug and drug delivery method on the same type of tumors. He is one of several researchers at the college who will benefit from increased enrollment in clinical trials through the collaborative research network.

The college maintains a complete list of current trials on its new clinical trials website, vetmed.vt.edu/clinical-trials/. Current trials are underway with dogs, cats and horses. [dvm360](#)

Public universities & veterinary medical colleges groups team up for task force

Group to address antibiotic resistance in production agriculture.

The Association of Public and Land-grant Universities (APLU) and the Association of American Veterinary Medical Colleges (AAVMC) have announced the creation of the Task Force on Antibiotic Resistance in Production Agriculture.

The task force comprises representatives from U.S. agriculture colleges, land grant universities and veterinary colleges as well as key representatives from the production animal agriculture community and the pharmaceutical industry. It was formed with the goal to help advise the federal government on a research agenda and also help publicly disseminate information on the use of antibiotics in production agriculture. Officials from key federal

agencies are expected to serve as observers to the task force.

"We recognize antibiotic resistance as a public health challenge and look forward to collaborating with APLU and the federal government on this critical initiative," said AAVMC Executive Director Andrew T. Maccabe, noting that many of the AAVMC's member institutions are based at land-grant universities.

"This is an important collaborative effort," APLU President Peter McPherson said. "The task force is well-positioned to advise the Obama administration as they consider strategies to address the judicious use of antibiotics in production agriculture."

Dr. Lonnie J. King, chair of the task

force and dean of The Ohio State University College of Veterinary Medicine, said, "The task force will draw on the expertise of its members to serve as a knowledgeable and important source of advice for the federal government as it develops its plans. It can also make recommendations on further research that should be undertaken to develop alternative solutions for some antibiotic use in production agriculture."

Once policies are established, according to King, APLU member institutions will play an important role in educating producers and the general public about the appropriate use of antibiotics in agriculture and veterinary medicine and the design of effective stewardship programs. [dvm360](#)

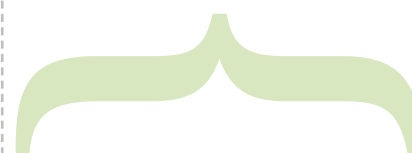
EQUINE | Orthopedics

Predisposed to injury

See which sport-horse events lead to the same telltale injuries time and time again. *By Ed Kane, PhD*



>>> Researchers have found a difference in the prominence of injuries in show-jumping horses depending on whether they are elite or non-elite competitors.



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It's no surprise that horses competing in different sports are predisposed to specific injuries.

In fact, the type and site of injury may even reflect the type and level of performance, according to one study: "Horses training for different sports are likely to load different anatomical structures and load these in different ways between different sports and between elite and lower level. It could, therefore, be expected that horses working in any single sport would have a particular type of injury predisposition at specific anatomical sites."¹

Older sport horses typically suffer from repetitive-type injuries: exacerbation of osteoarthritis due to sprains or strains involving the soft tissues around compromised joints, says Duncan Peters, DVM, MS, DACVSMR, associate professor of large animal clinical sciences at Michigan State University's College of Veterinary Medicine. "All of a sudden you get an acute overload, and you see soft tissue injuries associated with the joint capsule or the collateral ligaments," he says. "Those injuries are more acute, even though you have some underlying osteoarthritis."

Many of these horses may have undergone some type of injury in the past, healed from it, and then continued on in their careers, Peters says. "That's different than what we see in younger racehorses and some of the Western performance horses that will compete as 2- and 3-year-olds and then experience orthopedic problems while they are still going through development," he says.

In sport horses these injuries may be mistaken for poor or waning performance or an inability for the horse to attain its full potential.

Event and performance level factors

So how does sport category and performance level correspond to diagnosis? According to the 2006 study, researchers saw "a significant difference between anatomical site injured and sport category, including a high risk of forelimb superficial digital flexor tendon injury in eventing and elite show jumping, distal deep digital flexor tendon (DDFT) injury in elite show jumping, and hindlimb suspensory ligament injury in elite and nonelite dressage. There was a low risk of tarsal



>>> For both elite and non-elite dressage horses, the hindlimb suspensory ligament is the most frequent site of injury compared with other sport horses.

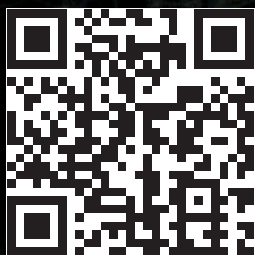
injury in elite eventing and proximal DDFT injury in dressage."¹

As for performance level, researchers discovered that elite and non-elite competitors were often predisposed to different injuries:¹

- Elite show jumping horses (those that routinely compete over 1.4-meter or higher fences) most

frequently injured the suspensory ligament, followed by the DDFT.

- Non-elite show jumping horses frequently injured the navicular bone and ligaments.
- Dressage horses at both performance levels showed the most frequently injured site at the suspensory ligament, predominantly in



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the hind limb. This was followed by the tarsus for elite-level horses.

- The superficial DFT was injured six times more frequently in elite event horses than non-elite horses and navicular bone and ligament injuries were equal for both performance levels in eventing.
- For endurance horses, the tarsus was the most frequently injured site.¹

Likewise, researchers showed a strong correlation between specific orthopedic injuries and individual sports:¹

- Suspensory ligament injury occurs most frequently for dressage horses.
- Proximal sensory desmitis occurs most frequently for show jumping, dressage and eventing.
- The tarsus is most frequently injured in elite dressage and endurance horses.
- Forelimb superficial DFT injury is most frequently detected in elite show jumping horses.
- DDFT injury in forelimbs of horses is seen in most sports.
- Elite show jumpers had the greatest proportion of injuries at a distal location. For other sports, injuries occurred more frequently within the digital flexor tendon sheath, proximal to the pastern.
- Injuries to the navicular bone occurred more frequently than injury to the associated soft tissues (bursa, DSIL, CSL and distal DDFT). Non-elite dressage horses had the most navicular bone injuries, followed by elite eventing.

Progression of orthopedic injury

As older sport horses advance in their careers, there is a progression of problems, such as osteoarthritis, Peters says. “We then get to a point where there is enough instability or wear and tear of the articular surface that all of a sudden the horse experiences pain related to the bone, and the deteriorating joint can no longer take up the absorption, or the concussion of the discipline, whether competing in dressage or other sport horse events.”

In addition to osteoarthritis, these horses can experience a range of progressive conditions, including:

Ligament problems. Sport horses are diagnosed with ligament issues that

“There is enough instability or wear and tear of the articular surface that all of a sudden the horse experiences pain related to the bone, and the deteriorating joint can no longer take up the absorption, or the concussion of the discipline, whether competing in dressage or other sport horse events.”

—Duncan Peters, DVM, MS, DACVSMR
University of Michigan

tend to occur more at the attachments and at the ligament or tendon extremities, i.e., proximal suspensory problems, which are common in dressage horses, jumpers and event horses.

“These injuries may be the result of ongoing stress on that area that, over time, creates problems with the ligament attachment,” Peters says. “We then start to get some remodeling, some bone and ligament pain associated with those attachments. We’ll see it in the proximal suspensory region and commonly at the sesamoid bones around the ankles. We’ll see branch suspensory ligament problems, which are certainly different than what they see in racing horses. In sport horses, it’s an accumulative effect of aging, time and miles, rather than a catastrophic breakdown—an overload-fatigue-type injury as seen in younger racing Thoroughbreds.”

In performance horses, there is a little different pathology or etiology of the damage to the ligament. “The result is that you have a lameness and/or dysfunction, and the horses are not able to do their job,” Peters says.

Tendon injuries. Sport horses don’t typically experience acute enlarged tendons or big core lesions that occur from racing. “We see tendonitis that may be associated more with a weakening or degeneration of the tendon over time,” Peters says. “We see damage in the areas of the deep flexor tendon, over the navicular bone and into the attachment at the bottom of the foot.” Sport horses may experience some tendon injuries in the mid-cannon area and also racing-type injuries, but not as often. “Most of our tendon injuries are related to margin tears rather than the core-type lesions that you may get in the young horse.”

Some of those tendon injuries are traumatic, where the horse directly hits those areas, and others occur over time, causing micro-overloading and weakness in those areas.

Hock injuries. Common hock problems include osteoarthritis, or degenerative joint disease, affecting the lower joints of the hock. This is usually due to the stresses in this area that, over time, cause remodeling of the joint surfaces and the surrounding bony structures. There can be low-grade pain (subclinical) associated with this bony remodeling that is insidious in nature until it progresses to an outright discomfort and lameness. In addition, there can be some acute stress of the compromised joint during performance that results in soft tissue inflammation and pain. “In sport horses, we often see a change in performance with the underlying degenerative joint conditions,” Peters says. “The horse will not jump or perform as well as he used to, for example, or he may jump to the left consistently. A dressage horse may suddenly have trouble with lead changes, or an event horse may struggle with his collection or lateral movement in dressage work.”

Back pathology. “We are appreciating these injuries more and more,” Peters says. “A lot of back problems are related to osteoarthritis of the articular facets and repetitive stress on those areas where there is some instability. The body tries to take care of it the best it can either by laying down some scar tissue or new bone.”

Improper tack and saddle fit can also cause sore backs and muscle spasms. “And a horse in training for dressage or three-day eventing has a rider aboard for a longer period of time than an exercising racehorse. Additionally, most

sport horses carry a greater percentage of their body weight, in rider and equipment, during training and competition in comparison to racehorses.”

Stress fractures and other injuries.

Sometimes remnants of past injuries from an earlier career can appear later in the horse's life. “Some retired racehorses get a second career as event, jumping or dressage horses,” Peters says. “So we appreciate that some old horserace injuries, like stress fractures or ligament desmopathies, may be a problem as those sport horses advance their careers. In some of these horses we see dorsal spinous process impingement, or some early arthritis that may have developed because of the excessive extension-flexion of the back that occurs with the galloping gait.”

Some of these problems can be locally painful and metabolically active, showing up with nuclear scintigraphy (bone scan), Peters says. “Many of them are incidental findings, as the injuries have since healed, and the horse is able to pursue his new career. It's not uncommon to see something abnormal on a radiograph or ultrasound that isn't really affecting the horse.”

Summary

In conclusion, researchers conclude that show horses competing in specific sports are at greater risk of injury at specific anatomical locations than horses used for general purpose riding.¹ **dvm360**

Reference

1. Murray RC, Dyson SJ, Tranquille C, Adams V. Association of type of sport horse and performance level with anatomical site of orthopedic injury diagnosis. *Equine Exercise Physiol* 7, *Equine Vet J Suppl* 2006;36:411.



Find this related article online

For an overview of the causes, diagnostic approach and treatment options for proximal suspensory desmopathy in performance horses, visit **dvm360.com/proximal**.

AVMA still focused on passing student debt legislation in Congress

Bill could help increase delivery of veterinary services in underserved rural areas.

If you're itching to see some student debt relief from Congress this session, it may depend on whether this “lame duck” Congress will indeed be lame, or surprisingly robust. Gina Luke, assistant director of the American Veterinary Medical Association (AVMA) Governmental Relations Division, says it could go either way.

There's little time left for the 113th Congress, but the AVMA hasn't given up on getting at least one piece of debt relief passed, namely the Veterinary Medicine Loan Repayment Program Enhancement Act (VMLRP). Ron DeHaven, executive vice president and chief executive officer for the AVMA, published a blog this fall urging Congress to support the bill, which would eliminate the 39 percent federal withholding tax from the \$4.8 million appropriated annually for VMLRP awards.

DeHaven contends that more money retained for the program allows for the VMLRP to send more veterinarians into underserved rural areas while helping more willing veterinarians pay down ever-increasing student debt. “Since Congress first authorized the VMLRP 11 years ago, the average graduating debt for veterinarians has more than doubled from \$76,558 in 2003 to \$162,113 in 2013,” DeHaven writes. He also cites that there are roughly 180 areas in the United States experiencing a severe shortage of essential veterinary services.

AVMA Governmental Relations Division Assistant Director Gina Luke says there's still real hope that the legislation can be passed before the session's end. “It has been one of our very top priorities,” she says. “We've worked it hard and very aggressively.”

However, Luke believes sometimes the message means more coming from the mouths of the

ranchers and veterinarians politicians meet, not just from people in Washington. To that end, the AVMA has launched an advertising campaign focused on the VMLRP. Playing off of the children's song, “Old MacDonald had a Farm,” it encourages people to “Tell Congress to Cock-a-Doodle-Do-Something.” Luke says that's the best thing veterinarians can do right now—talk to their elected officials.

For more information about veterinary shortage areas, the VMLRP and how to reach out to members of Congress, go to avma.org.

Other bills on the AVMA's agenda such as the Earnings-Contingent Education Loans Act and the Know Before You Owe Private Student Loan Act will likely be reintroduced to the next Congress. And the Higher Education Act, which would be a likely candidate to shepherd some of these veterinary debt relief bills through, looks to meet the same fate.

Luke says it's clear the effort requires a stick-with-it attitude. “It feels a lot like Groundhog Day. Bills on student loan interest rates get introduced every Congress. You certainly have seen these bills before and you'll see them again next year.” **dvm360**

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>>> UC-Davis' new Equine Ophthalmology Service offers treatment of corneal ulcers, corneal and eyelid cancer, equine recurrent uveitis, cataracts and glaucoma.

UC-Davis expands equine ophthalmology services

Veterinarians will have access to specialty tests and procedures.

In response to increased demand for equine eye services, the University of California-Davis Veterinary Medical Teaching Hospital has opened the Equine Ophthalmology Service.

Historically, equine eye cases have been handled at UC-Davis by multi-species ophthalmologists. Now, Mary Lassaline, DVM, PhD, MA, DACVO, will see those patients and offer advanced diagnostics in addition to routine, complex and emergency medical and surgical care for horses with a variety of ocular disorders, including corneal ulcers, corneal and eyelid cancer, equine recurrent uveitis, cataracts and glaucoma.

Lassaline earned her veterinary degree from Michigan State University, and she served a yearlong internship at Rood & Riddle Equine

Hospital in Lexington, Kentucky. She completed a residency in veterinary ophthalmology at the University of Florida before spending two years in private practice. She has spent the last eight years developing and leading the equine ophthalmology program as a faculty member at the University of Pennsylvania. With a particular focus on equine corneal disease, Lassaline's research interests span the scope of equine eye problems.

David Wilson, director of the veterinary teaching hospital at UC-Davis, says Lassaline will be an asset.

"There certainly is no shortage of equine patients in need of advanced ophthalmology services, so there is a lot of potential to grow the service," Wilson says. "We feel very fortunate to have recruited such a talented and

experienced equine ophthalmologist as Mary to expand the services we can provide to referring veterinarians and horse owners."

The UC-Davis Equine Ophthalmology Service offers treatment of corneal ulcers, corneal and eyelid cancer, equine recurrent uveitis, cataracts and glaucoma. Diagnostic testing offerings include slit lamp biomicroscopy, tonometry, corneal culture and cytology, electroretinogram, high-frequency ultrasound, computed tomography and magnetic resonance imaging. The center will also offer corneal grafting procedures for deep corneal ulcers, cyclosporine implants for equine recurrent uveitis, cataract surgery, excision and cryotherapy or radiation therapy for eye and eyelid tumors. [dvm360](#)



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>>> Tsensation, a 25-year-old Arabian gelding, is shown with his owner, Rae Marie Smith, at her farm in Ocala, Florida. Tsensation is one of 35 horses that were treated successfully for a challenging form of colic through the use of a technique developed by UF equine surgeons.

New grading system could improve survival times in some horses with colic

System helps determine whether small intestine should be removed.

A novel approach to managing a challenging form of equine colic could save the lives of many horses and also save horse owners the cost and uncertainty of major surgery, say University of Florida veterinary researchers.

The approach, developed by the team of David Freeman, MVB, PhD, a professor of large animal surgery at the UF College of Veterinary Medicine, relies heavily on a surgeon's judgment during surgery to assess the viability of strangulated small intestine, an obstruction that impedes blood flow.

If the affected tissue shows improvements in intestinal color and muscle activity after corrective measures, the organ has an excellent chance of recovering function, and costly surgery to remove the intestinal obstruction is avoided, the researchers say.

"In general, the treatment for small intestinal strangulation isn't as successful as for many other forms of colic," said Freeman, who also is the director of the college's Island Whirl Equine

Colic Laboratory. "The question we always ask is, do we need to remove this piece of intestine or not?"

Freeman and his colleagues concluded that if certain criteria are met, in many cases, the answer would be no.

Their research appeared last fall in the *Equine Veterinary Journal* and was presented in July at the Equine Colic Research Symposium in Dublin.

The findings are based on a review of data from 35 cases that used the technique involving horses treated at two university veterinary hospitals between 1996 and 2011.

"I was very interested in this issue, so in each case, I recorded the severity of the small intestinal changes," Freeman said. "I started off with a grading system, which was tweaked and modified along the way."

Gradually, the team came up with the system UF is using today in equine clinical cases. "Once we've established the degree of intestinal injury, we can now say: This is the cutoff. If it's worse than this, we will have to remove that

part of the intestine, but if it's better, we can leave it in place," Freeman said.

All horses in the study were discharged after recovery, with only a few developing serious but manageable complications. Many horses survived more than 10 years, and some survived for up to 15 years.

"These long-term survival data are very encouraging and might exceed what have been reported previously for this type of colic," he said. "This study shows that in many cases, these horses can do very well with the affected intestine left in place."

Also collaborating in the research were D.J. Schaeffer, DVSc, PhD, from the University of Illinois College of Veterinary Medicine, and Orlaith B. Cleary, MVB, a former large animal surgery resident at the University of Florida who now practices in Ontario.

The University of Florida College of Veterinary Medicine is supported through funding from UF Health and the UF Institute of Food and Agricultural Sciences. [dvm360](#)

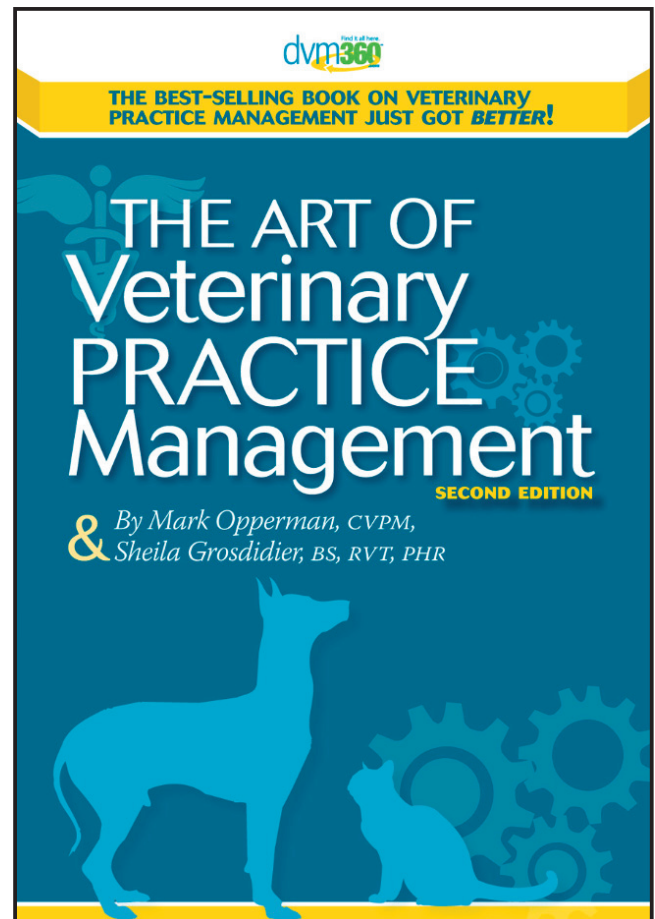
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Life as an exotics veterinarian: Feathers, fins, scales—and love

Here's an inside look, plus tips to get you started. *By Laurie Hess, DVM, DABVP (avian)*

As I'm sure any exotics veterinarian would tell you, exotic pet owners tend to be a little bit exotic themselves. But just like dog and cat practitioners, exotics veterinarians are there to help their patients. The difference is that sometimes, due to the small size, short lifespan and inexpensive replacement cost of certain exotic pets, the exotics veterinarian's goal of saving the patient doesn't always match the client's desire to spend as little as possible as quickly as possible to save their pet's life.

This can be a big source of frustration for exotics veterinarians. It takes a lot of patience and positivity on the part of exotics veterinarians to remember exactly why they chose to go into this field of veterinary medicine. On the other hand, there are some wonderful exotic pet owners who adore their unusual pets as much as any dog or cat owner loves his or her pet. These are the people who make the exotics veterinarian's struggle to convince owners that their pets need ongoing preventive medical care worth it.

What I wish my colleagues knew

The one thing I wish other veterinarians knew about us is that we take exotics medicine as seriously as small animal veterinarians take dog and cat medicine. We work up cases in as detailed and systematic ways as dog and cat practitioners do.

Our biggest challenge is to keep up with new diseases and treatments for all the species we care for. With all the technological advances and research done in exotics over the past 20 years, we're now able to care for these pets in ways we never have before (I know you can relate). No longer are we limited to just a shot of antibiotics and subcutaneous fluids to treat sick exotic pets. We can perform surgery, endoscopy, ultrasound, CT scans and laser therapy.

So, while we encourage all veterinarians to care for birds and exotics, we



>>> Dr. Laurie Hess performs surgery, endoscopy, ultrasound, CT scans and laser therapy on the exotic pets she sees in her veterinary practice.

There are some wonderful exotic pet owners who adore their unusual pets as much as any dog or cat owner loves his or her pet.

hope veterinarians who are not comfortable treating these species will refer them to exotics practitioners who are more knowledgeable about these pets' care. The pets will fare better, the owners will be happier, and the veterinarians who refer will be well respected for the referral. It's a win-win.

So you want to see more exotics

Thinking of treating birds and other exotic pets at your veterinary hospital? Exotics can be a great practice builder. But consider these important factors before you commit to adding feathers and scales to your patient list.

Equip yourself. Like any other service your hospital offers, exotic pet care—whether birds, small mammals (ferrets, rabbits, rodents), reptiles, amphibians, wildlife or uncommon species (hedgehogs, pot-bellied pigs, sugar

gliders, prairie dogs)—will be worth it only if you can charge appropriately for it. The way to feel justified charging for exotic pet services is to spend time studying bird and exotic animal diseases and treatment and to acquire basic equipment to diagnose and treat these pets. Of course, the amount you spend on equipment will be proportional to the depth of exotic pet care you aim to provide, but here's some basic equipment you'll need:

- > Small syringes (insulin- and tuberculin-sized) with small needles (33- and 25-gauge, respectively)
 - > Microtainer tubes and microhematocrit tubes for blood collection (available from most veterinary laboratories)
 - > A microcentrifuge to spin down microtainer tubes
 - > A scale that weighs in grams
 - > Support from a veterinary laboratory that tests small blood samples from exotic pets
 - > A microscope and Gram stain
 - > An infant-sized stethoscope
 - > A heated cage to provide oxygen and nebulized drugs with narrow bar spacing or a Plexiglas enclosure to prevent escape of small exotic pets
 - > Small-gauge intravenous catheters, endotracheal tubes and masks to deliver anesthesia and oxygen
 - > Metal gavage feeding tubes: curved for birds and straight for reptiles
 - > An infusion pump that can deliver fractions of a milliliter of fluid per minute
 - > A variety of towels, from washcloths to bath-sized, to restrain pets
 - > A nearby pharmacy that can compound drugs into small volumes.
- Once you've set yourself up with

This article is adapted from

**Veterinary
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veterinarybusiness.dvm360.com

basic equipment and educated yourself with a general knowledge of bird and exotic pet diseases and treatment, it's a matter of time and practice to make exotic pet services profitable. For reference, I've been treating solely birds and exotics for 18 years and now have an active client base of about 3,500 exotic pet owners. Depending on the species I'm treating, my average transaction fee is about \$375. So, done correctly, exotic pets can be quite profitable.

Educate yourself. Above are great tools for practice, but you know your best tool in practice is your brain. Here are my go-to resources for learning about, diagnosing and training to treat more exotic pets:

- > Association of Avian Veterinarians (aav.org)
- > Association of Exotic Mammal Veterinarians (aemv.org)
- > Association of Reptile and Amphibian Veterinarians (arav.org)
- > American Association of Zoo Veterinarians (aazv.org)
- > American Society of Lab Animal Practitioners (aslap.org)
- > American Association for Laboratory Animal Science (aalas.org)
- > Exotic animal message board on Veterinary Information Network (vin.com)
- > Exotic DVM Veterinary Forum (exoticDVM@yahoo.com)
- > BackYardChickens.com
- > MyPetChicken.com
- > *Journal of Avian Medicine and Surgery*
- > *Journal of Exotic Pet Medicine*
- > *Journal of Herpetological Medicine and Surgery*
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Dr. Laurie Hess, DABVP (avian), is the owner of Veterinary Center for Birds & Exotics in Bedford Hills, New York.

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Safety—or client's preference—first?

Would you expect team members to treat an unvaccinated and sometimes feisty feline that has potentially been exposed to wildlife?

Leah Ness has a 5-year-old cat named Tuffy. She loves her cat and tolerates his lovable but inconsistent behavior. She adopted him at age 2 from a less-than-caring environment. Most of the time he is loving. Occasionally he is anything but loving and

may scratch or bite. Ms. Ness leads a holistic lifestyle consisting of natural foods, natural remedies and always healthy choices. The same applies for her beloved cat Tuffy. Dr. Summer cares for Tuffy and sees the feisty feline on a regular basis. Ms. Ness will not allow vaccinations but opts for titers instead.

She does not allow pesticides for parasite control, and she only feeds this pampered feline organic food.

Dr. Summer has recently spoken with his team members concerning some wildlife rabies that has been discovered in their county.

Many team members were immunized against rabies, as is recommended for animal care workers with increased exposure risk. In addition their clinic implemented a policy allowing employees the option of not working with pet patients that aren't properly immunized against rabies.

Dr. Summer receives a call from Ms. Ness on a Friday morning. Ms. Ness explains Tuffy snuck out of the house and returned early this morning with a large laceration on his back. Of course Dr. Summer tells Ms. Ness to bring Tuffy in to the practice immediately.

This poses a problem for Tuffy the cat. He is unvaccinated and

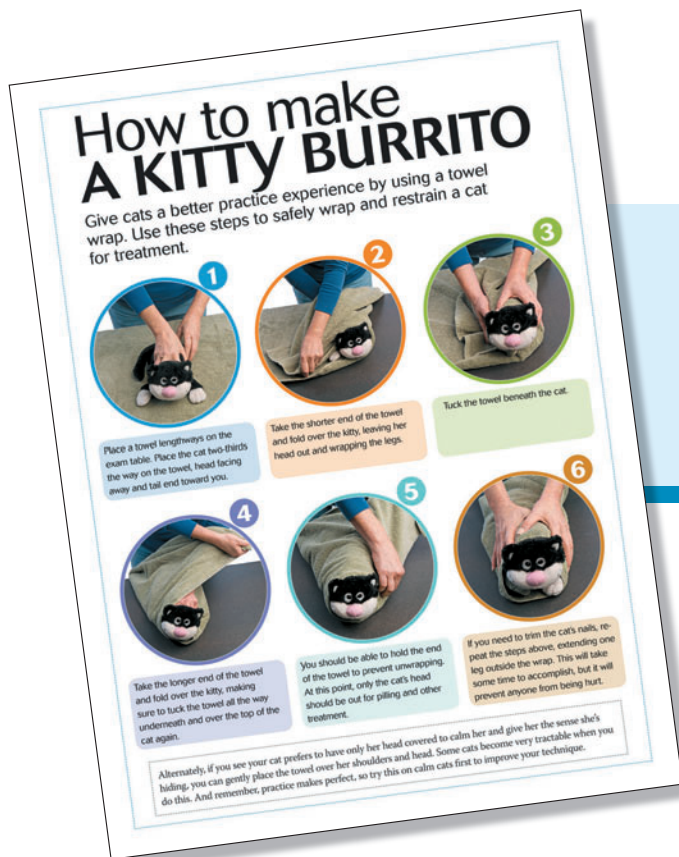
has a wound of unknown origin and could be fractious. That being said Ms. Ness is an excellent client and this cat is in need of medical assistance. Three of the veterinary technicians on duty respectively decline to work with the cat. They note that the owner has declined immunizations, and know-

No one will argue that pet owners ultimately have the right to select their pet's vaccination protocol. Of course they should do this in consultation with their veterinarian and with a complete assessment of the animal's risk profile. On the other hand, the veterinarian must first maintain the health of his team.

ing Tuffy they choose not to assume the exposure risk. Dr. Summer and another team member elect to work with Tuffy. They use gloves and proper sedation. Fortunately all goes well and Tuffy is discharged without incident.

Ms. Ness is advised that some team members would not care for Tuffy because he did not have his shots, yet she still refuses immu-





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nizations. Dr. Summer feels on the surface that his employees exercised their legitimate choice not to work with this cat. Nevertheless he harbors a bit of resentment with their decision because it impeded the care of a good client's pet.

After the chaos of the moment passed and when cooler heads prevail, Dr. Summer calls Ms. Ness. He tells her as Tuffy's caregiver and her veterinarian she must respect his request to vaccinate the cat against rabies. It is the law and the right thing to do. In addition, it isn't fair to his team nor to Tuffy to maintain an unnecessary serious health risk. Ms. Ness reluctantly agrees and Tuffy receives his rabies vaccination.

Rosenberg's response:

No one will argue the fact that pet owners ultimately have the right to select their pet's vaccination protocol. Of course they should do this in consultation with the veterinarian and with a complete assessment of the animal's risk profile.

On the other hand, the veterinarian as an employer must first maintain the health and well-being of his team members. Knowingly compelling a team member to take unnecessary risks and then making judgments based on the employee's response is unprofessional.

Dr. Summer ultimately did the right thing. He advised his employees of their right to decline treatment of an unvaccinated animal, and he became assertive with a client who was

displaying poor judgment. Good for Dr. Summer! [dvm360](http://dvm360.com)

Get in touch!

Do you agree with Dr. Rosenberg? We would like to know. Email us at dvmnews@advanstar.com or facebook.com/dvm360.

Dr. Marc Rosenberg is director of the Voorhees Veterinary Center in Voorhees, New Jersey. He is a member of the New Jersey Board of Veterinary Medical Examiners. Although many of his scenarios in "The Dilemma" are based on real-life events, the veterinary practices, doctors and employees described are fictional.



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10 SIMPLE WAYS to let clients know *you care*

Do you care about clients outside the exam room? Show it.

Pet owners are like any of us. They want to like the people they do business with and they want to feel liked in return. Through the years, we in the veterinary profession have talked a lot about quality of medical care with improvements in diagnostics, therapeutics and surgeries. But I've also been happy to see an increased emphasis on the quality of the client experience.

But that can be an esoteric term—what does “the client experience” mean anyway? To help answer that question, here are 10 tangible ways you and your team can demonstrate not just exceptional service but a genuine commitment to each client every day:

1 Ditch the “waiting room.”

Change the mindset of your practice team. Eliminate the term “waiting room” and refer to it as the “welcoming room” or the “receiving room.” No one these days should be waiting long enough to call it waiting.

2 Refresh your refreshments.

A coffee maker and a small fridge stocked with bottled water or juice boxes is a real smile maker. Often, an early appointment means a client was rushed out the door. Bring a nice cup of coffee to that earliest appointment.

3 Make things convenient and safe.

A fair number of clients are elderly or have limited mobility. While it's common to help someone out to the car with their pet or dog food, try to anticipate these clients' arrivals and assign someone to greet

them in the parking lot and help them in from the car with a friendly, “We were expecting you, and we're so glad you came!” Remember that walkers, canes, crutches and wheelchairs offer people a great deal of independence and mobility, but those clients may still need special assistance with steps, ramps and doors. Ask if you can help.

4 Reward proper restraint.

Show clients you appreciate when they're thoughtful enough to bring a pet in a transfer carrier. Handle the carrier for them and thank them. Also, make a few cat or small dog carriers available. When a client calls for an appointment, ask, “Would you like to come by for a transport carrier?”

5 Carry their purchases.

This should go without saying, but you should always offer to carry



bags of pet food or cat litter to clients' cars. When a friend of mine learned that his client lived in a third-floor walk-up, he told that client to leave her purchases in the car and he would send a staff member to her home to carry them up the stairs for her. That's exceptional and unforgettable service.

6 Charge up your clients.

We are all way too dependent on mobile phones. And did you ever run off without your battery or have your phone die at a bad time? Keep a charger in the reception area so you can offer to charge dead batteries. Or have a prepaid cell phone to loan to people if their phone is dead. They can return it "later today or tomorrow."

7 Be a bad-weather friend.

Install umbrella stands at entrances and exits. Provide umbrella bags like they do at department stores. Offer an assortment of inexpensive collapsing umbrellas for unexpected showers. It's one thing to hand a client an umbrella; it's another thing entirely to walk her out and give her the umbrella for when she gets where she's going. Again, she can drop it by when the rain stops, pay it forward to another wet friend or stranger, or, better yet, keep it and think of your kindness every time she uses it.

8 Show globe-friendly guidance.

Increasingly, our practices serve clients with a variety of cultures and languages. At a minimum, provide reading material and brochures in other languages.

9 Help the hearing-and vision-impaired.

Provide pet owners who are having trouble hearing with a pad and paper, an erasable mini-whiteboard or even an iPad to type on. Also, make sure you offer to escort vision-impaired clients to and from exam rooms and to and from their transportation outside.

10 DIY client service.

Do not delegate everything. When you can, you as the veterinarian should be the one to help and carry and welcome. Sure, you're busy—that's what makes it so special in clients' eyes.

I know that client service creates real bonds. Recently, I got an email from a client I last saw 20 years ago. We had both relocated over the years, but she told me she always appreciated my going to her home to vaccinate her father's dog. It took maybe an extra

half-hour but stood out in her mind as exceptional service. That could be you.

Dr. Mike Paul is a well-known speaker and columnist and principal of Magpie Veterinary Consulting. He lives in Anguilla in the British West Indies.



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Why **smart** veterinarians make **bad buying** decisions

Our doctor brains move fast—*sloooooo* down before you shell out.



We veterinarians face a very specific psychological pitfall when it comes to how we view a prospective purchase in relation to our salary. Here's an example (I swear the following scenario is completely fictional and has nothing to do with me or my own life):

Dr. Indebt wants to buy a new bicycle. He just finished watching his DVR-ed coverage of the Tour de France, and he's pretty convinced he missed his calling. If he can just push through the initial investment and spend the next few months training, he'll be on the fast track to a career as a professional cyclist and ride away from all of those growling Rottweilers and pissed-off clients.

He fills his Amazon.com cart with everything he needs: bike, spandex, lights, tools, you name it. A pretty darn reasonable purchase, really, at barely over the \$4,000 mark. The pitch to his wife? "This is hardly anything! I earn \$80,000 a year! We got free shipping! It only takes me two weeks to make this money and the potential return is limitless! It's a no-brainer!"

Why did Dr. Indebt's wife punch him in the face? Hint: She didn't even bother to Google average salaries for professional cyclists. While the answer may be obvious to some of you, this is the exact kind of thinking that lands so many of us in serious financial trouble. When our brain tells us it's time to spend,

we often lose sight of the big picture. That's when the focus turns to what we *want*. We become experts at devising any number of irrational ways to convince ourselves that we're right and that the spending is OK.

Sure, Dr. Indebt is bringing in some serious cheese at the \$80,000 mark. But let's whittle that down: After taxes, he's left with \$54,000 in take-home pay. Now subtract the mortgage he thought he could afford (very reasonable 30-year loan) and the lease (ouch, bad idea!) on his brand-new BMW (I mean, he is a doctor after all). Now he's left with \$18,000 for the year, and guess what? That's exactly what he pays on his student loans every year.

Oh, and by the way, since he leased the car, he has to pay a high car insurance premium. Throw in the utility bills, groceries and payments on other consumer debt and, well, it's a darn good thing that Dr. Indebt married someone who is more financially responsible than he is.

The thing is, danger lurks behind every corner in the way we think about what we owe and what we spend. Our psyche plays a major role in how we feel about our debts and budgeting in general, and when we're facing veterinary school debt, all of this is intensified.

Don't be a Dr. Indebt. Be honest with yourself about how much you make and how much you spend. The first step is to live your budget every single day. [dvm360](#)

Dr. Jeremy Campfield works in emergency and critical care private practice in Southern California. He is also an avid kiteboarder.

A different perspective on declawing



When the procedure is performed carefully at a young age, cats lead a healthy, happy life.

I have read so much about declawing lately (see several articles in the September issue of *dvm360*) that I thought I'd add my thoughts. I'm an old practitioner but have tried to keep up. I like to do my declaw procedures while the kittens are very young, around 8 to 10 weeks. I also believe in early neutering.

I, of course, use pressure hemorrhage control and a Resco clipper. I am very careful not to cut the last phalanx. Cutting that last bone leads to pain. I then take a pair of short-nosed wire-cutting suture scissors and trim out the growth plate just under the bone. I use a tiny drop of glue at the skin edge along with an-

tibiotic powder, apply a fairly tight wrap and then hospitalize the kitty. The next day the bandages are removed and the cat is confined. At the end of day three, the cat is sent home. The owner rarely has any comments about discomfort. It is not uncommon on that third day to see young kittens climb up the cage bars and not show any discomfort.

I think several factors are at work. The kittens are very young (how many men out there remember being circumcised?), there is no bone cut and they have a pretty high pain threshold.

How would you like—for the rest of your life—being yelled at, squirted with water or having to go to a special place for doing something that to you is perfectly normal, like scratching your nose or rubbing your ear? These cats may have to go through a day or so of discomfort, but they have a lifetime of serenity.

Philip G. Weida, DVM, Irvine, California

The constant and endless discussions about the ups and downs of the declaw procedure have me rather mystified. This was a procedure I performed many times over almost 50 years in practice and never had a bit of problem with! The paw area was prepared for surgery and then with a simple nail clipper (sterilized of course) the nail was removed at its base. Then a simple bandage over the entire foot was applied for one week. A shot of long-acting penicillin was also given. Once the patient had recovered from anesthesia it was discharged. I do not recall ever having any postoperative problems over many years of practice. This is a procedure that all small animal practitioners should be capable of since it will save many a feline life.

*Bud Stuart, DVM
Santa Barbara, California*



Get in touch

Contact us on Twitter: @dvm360, on Facebook: facebook.com/dvm360, via e-mail: dvmnews@advanstar.com or online at dvm360.com/community.

It's time to look within for the answer to oversupply

No one else will solve this problem for us. It's time to trust ourselves again.

The big picture of veterinary oversupply is at best uncertain, but here are the realities of my world. If I were not a veterinarian I could not afford what I charge for my services. No matter how many pets are out there, they are under the discretionary budget for most owners. Price increases, whether to cover increased costs or improve profitability, do influence pet owners' ability to return to a practice despite good service and experience. Most owners who cannot afford veterinary services cannot afford insurance.

Profit centers that are lost have to be made up elsewhere. Government regulation has increased over my practice life and I don't see it slowing down. My debt ratio at graduation was 1.8 to 1, but I paid off my loans and managed to send five daughters to college. I don't believe there's a veterinary student out there who doesn't know what they're getting into career- and debt-wise. I know of no colleague who doesn't give a realistic opinion of the future of veterinary medicine to aspiring veterinarians no matter which way they lean on the oversupply issue.

I recall being told at graduation that we should grab any available job because the reality was not all of us

would find employment. To my knowledge we all did, despite 15 percent interest rates and an uncertain economy. The good news is that we got infused with new blood and new ideas, aspirations and abilities that seem to elude us now. By fixing problems in our own worlds

we will fix the larger issues. Do not look to government or organizations for the fix because it will not come from them. It is time to trust our own abilities again.

*Siegfried Mayer, DVM
Kenner, Louisiana*

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NON-ECONOMIC DAMAGES: Are veterinarians *expediting* evolution of the law?

Leveraging the patient-client bond could have unintended consequences. *By Stan Baker, JD, DVM*

Before we jump into the subject of pets and the potentially changing legal landscape, let's talk some terminology. In broad terms, non-economic damages are damages (i.e., money) awarded by a court to compensate a victim for the emotional aspects associated with a particular injury.

For example, a drunk driver hits a car carrying a husband and wife and kills the wife. The husband can sue the drunk driver for economic damages (lost wages, hospital bills, car repair bills, etc.) and non-economic damages (loss of his wife's companionship, emotional trauma, etc.). An award for non-economic damages can be quite large unless a state places limits on such awards. Some human medical commentators identify non-economic damages in medical malpractice situations as a factor that drives up the cost of human health care.

Pets and non-economic damages

If you were to poll legal counsel for leading animal health organizations, they likely would state that the law regarding application of non-economic damages to veterinary malpractice situations is well settled. Pet owners cannot recover non-economic damages for injuries to pets because pets are property (like a cell phone). Pet owners can only recover replacement value for property damage. In other words, if an adopted shelter dog dies due to a veterinarian's malpractice, the maximum

legal exposure the veterinarian faces is the adoption fee and perhaps some ancillary economic damages such as emergency room fees.

The law evolves

When it comes to evolution, veterinarians (along with everyone else) tend to focus on biological aspects. We forget that most everything else that touches our day-to-day lives—such as economics, the arts, technology and the law—also evolves. And perhaps no other type of evolution acts so slowly and yet so abruptly changes our daily lives as the evolution of the law.

For example, on Oct. 6, the United States Supreme Court declined to review several cases overturning bans on same-sex marriage. The day-to-day lives of millions of Americans changed in an instant. The next day, same-sex couples were legally wed for the first time in the history of the states at issue. Animal injury jurisprudence, and the law of non-economic damages in particular, evolves as well.

External pressures drive evolution

Animal injury jurisprudence is a very active area of the law. At last count there were more than 200 law schools in the nation. To my knowledge, all have an animal law class. Media articles indicate that more than 120 law schools have more than one class dedicated to animal law issues. At least eight law schools have received million-dollar grants to create formal

programs to advance animal rights. Every year U.S. law schools unleash more than 40,000 new lawyers into society. A primary activity of new and old lawyers is to push the boundaries of the law as they advocate for their clients—and try to get paid.

In contrast, there are only 30 veterinary schools in the United States, and they graduate about 3,000 veterinarians each year. Few veterinary schools, if any, have a class dedicated to animal health legal issues. Most students receive one or two "legal" lectures (sometimes given by a DVM) as part of a veterinary ethics or business class. Many of my veterinary colleagues have not even heard the term "non-economic damages," which is understandable considering they are focused on saving lives instead of parsing legal theory.

The result is that most external pressures driving the evolution of animal health jurisprudence come from outside the animal health industry, which from a veterinarian's point of view is a suboptimal situation.

Outliers or emerging trends

Most lawyers in this area acknowledge that there are few historical cases where non-economic damages were awarded in pet injury situations. These cases are considered "outliers" that do not change the general rule. Is this an accurate depiction? When do "outliers" become "trends" that evolve into a majority position?

A problem associated with analyzing

any evolutionary process is determining when something changes from “this” to “that.” Most would agree that in 1986 (the year of *Bowers v. Hardwick*) same-sex marriage was illegal in the United States. As of Oct. 6 same sex-marriage is legal in the majority of states. When did this shift start? What drove it? Was it simply a gradual judicial recognition of a shift in social norms? Could a similar shift alter the application of non-economic damages to pet injuries?

For purposes of this article, 1991 and 2008 serve as randomly picked mile markers for the evolution of animals under the law. According to the Humane Society of the United States, in 1991 only seven states had felony animal cruelty laws. In 2014, South Dakota became the last state to enact a felony animal cruelty law. Social norms evolve, which drives evolution in the law.

In 2008, the AVMA submitted a legal brief in a Vermont case that succinctly summarized the law of non-economic damages and pets in all 50 states: Non-economic damages are not available in pet injury situations. Since then animal rights lawyers have attempted to change the law using multiple legal theories and they appear to be gaining ground, at least at the lower court levels.

In 2009, in a case referenced in the *Orlando Sentinel*, a Rottweiler died after a kennel stay. The owner sued the kennel and was awarded \$30,000, including \$20,000 for the dog’s “intrinsic value.” Given that the current market value for Rottweiler puppies is below \$20,000, one suspects emotion played a part in the calculation of that award.

In 2010, the Louisiana Court of Appeals upheld an \$800 award of emotional damages against a veterinary

clinic in the death of a dog. In its ruling the court specifically cited the clinic’s own advertising, which highlighted the importance of the emotional bond between a pet and its owner. At the time, not much was made of this ruling because \$800 is a relatively small sum and the ruling was tied to a uniquely Louisiana statute.

Just two years later in 2012, the Louisiana Court of Appeals in *Barrios v. Safeway Insurance Company* upheld a \$10,000 emotional damages award while taking “judicial notice of the emotional bond that exists between some pets and their owners and the family status awarded some pets.”

The Animal Legal Defense Fund (ALDF) reports that in September, Judge Eric Richardson of the State Court of Fulton County, Georgia, in a lawsuit by a pet owner against a kennel, held that a dachshund’s “intrinsic value” was a more appropriate remedy than replacement value and that the owners were entitled to compensation for veterinary fees and other non-economic elements. The kennel appealed. The ALDF filed a brief urging the Georgia Court of Appeals to affirm the trial court, arguing that companion animals are intrinsically valued family members and emotionally and financially worth more than their market value.

The future of non-economic damages

Although it is appropriate to say that animals are legally classified as property in all 50 states it is no longer appropriate to say that non-economic damages are not available for pet injuries in all 50 states. Until the Louisiana Supreme Court rules otherwise, non-economic damages are available for pet injuries there.

While Louisiana may be an outlier when compared with the rest of the United States, legal theory does not stop at the state line, as evidenced by the more recent Georgia case. Two lower courts in Texas followed similar reasoning and allowed emotion-based damages for pet injury in 2010 and 2011 before being overturned by the Texas Supreme Court in 2013. Every day, the ALDF and others look for similar cases in other states. Every day, the ALDF and others push for expansion of laws at state legislatures.

The law evolves, sometimes slowly and sometimes quickly. Veterinarians need to be aware that although they may not be the ones filing the lawsuits, they have an important voice in this debate, whether they realize it or not. Every day, veterinarians and animal health companies advertise that “pets are family” and should be treated as such. At least one court in Louisiana took a veterinary clinic at its word and allowed a pet owner to recover emotion-based damages.

It may not be too long before other courts in other jurisdictions listen to veterinarians’ marketing pitches and treat pets like family. Once a state supreme court accepts that proposition, the practice of veterinary medicine likely will change forever. Whether that change is good or bad is up for debate, but veterinarians should be mindful of the potential legal implications when they leverage the strong emotional bond between pets and their owners when promoting their services. [dvm360](#)



Dr. Stan Baker is a veterinarian, attorney and member of the Husch Blackwell animal health group. He works

in the Kansas City Animal Health Corridor, where his practice is devoted to the business, regulatory, scientific and policy issues that affect the animal health industry.



STARTING SALARIES: *A telltale* for veterinary market performance

New data from the AVMA's Senior Survey suggests improving economic conditions in the veterinary market.

Each year the American Veterinary Medical Association (AVMA) surveys graduating seniors from the country's 28 veterinary colleges to learn about their post-graduation plans. This is what's known as the "Senior Survey." Perhaps you've taken it yourself. The response to this survey has always been over 90 percent and thus provides data that can be useful in determining the relative market performance for veterinarians.

However, comparing the simple year-to-year average of the starting salary for those taking a full-time position (as opposed to an internship, residency or additional degree program or who choose "no current decision") provides a limited perspective. Understanding how the starting salaries of new veterinarians can be used as an indicator of market performance for veterinarians requires a few adjustments to the simple average value.

For instance, starting salaries for men and women are significantly (statistically) different, with men making more. This gender difference in starting salaries during the last 14 years has been as small as a few hundred dollars and as large as several thousand dollars. The mean difference from 2001 through 2014 has been \$2,842. And because the percent of female graduates has been increasing over the past 14 years, we can assume mathematically that the average starting salary will decline even further, with all other market effects being constant. Thus, looking at the simple average starting salary would lead one to conclude that the demand for new veterinarians is declining relative to the supply. But this would not be true, as the decline in starting salaries would be occurring

only because of the increasing proportion of women in the market.

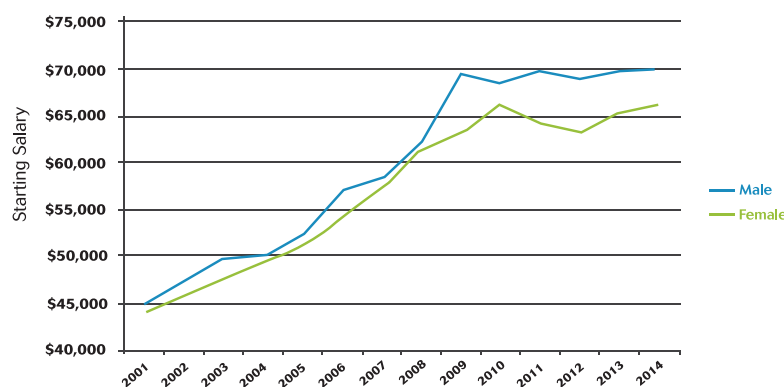
The same effect can be seen for type of practice and region of the country. Both practice type and region affect the average starting salary. A higher percent of graduates going to lower-paying practice types or lower-paying regions of the country would lead to a lower simple average starting salary. (See graph below).

If what we really want to know is how supply and demand are affecting price (starting salary), then we need to

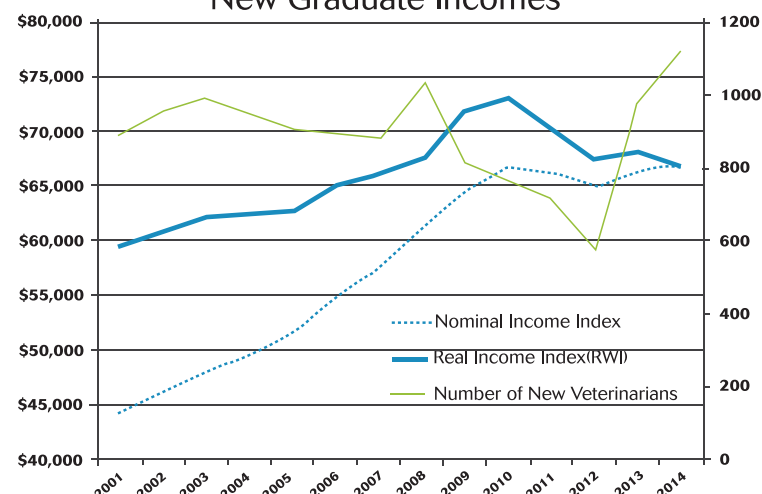
control for factors that affect the price (gender, practice type, region) and not just the number of veterinarians.

The demand for veterinarians is an inverse relationship between the number available to be employed and the price (salary) they will receive. More veterinarians in the market will lower the price necessary to "clear the market" (that is, find employment for all those seeking employment). If the number of new veterinarians entering the market grows faster than the number of jobs available, price will go

Starting Nominal Mean Salary
by Gender



New Graduate Incomes



down. If the demand grows faster than the supply, price will increase.

To isolate just the effect of supply and demand on price in order to more accurately use price as an indicator of the relative scarcity of new veterinarians (rising price means increasing scarcity, declining price means decreasing scarcity) we need to use what's called a Laspeyres index. This is the way that the rate of inflation is calculated for the U.S. economy.

Inflation is an upward change in price that you and I pay for a specific set of goods or services. This set is called a "market basket." Because the number of the various types of goods and services produced in the U.S. economy changes over time, calculating a simple average price for all goods and services does not provide a clear picture of how prices in the general economy change over time.

To get to the real numbers, a market basket of goods and services is created and used to represent the general economy. The value of that basket is computed each year. A change in the value of that basket, which always contains the same number and type of goods and services, provides a clear picture of how the price of that basket changes over time as a result of increasing or decreasing relative scarcity of the goods and services in the basket. The consumer price index that you read about in the paper or hear about on the news is a Laspeyres index using a market basket of *consumer* goods and services; the producer price index is a Laspeyres index using a market basket of *producer* goods and services.

The economics division of the AVMA has recently produced a Laspeyres index for new veterinarians using a market basket of veterinarians (a constant percentage of gender, type of practice and region). When we control for inflation, the end product is the real index of new veterinary incomes, which we call the RWI. Why is this important? Because the RWI now provides us with a price that can be viewed relative to the quantity demanded. In that way, we can use it to determine the relationship between price and quantity in the market for new veterinarians. (See graph, p. 46.)

The indexed real income (RWI) indicates that real incomes for a cohort of veterinarians with constant gender, type of practice and region increased

until 2010, declined in 2011 and 2012, and has leveled off the last two years. However, the increase in RWI from 2009 to 2010 was accompanied by a decline in the number of new veterinarians employed during that period, reaching a low of 578 with employment by the time the senior survey was conducted in early spring of 2010.

Since 2012, the number of new veterinarians with employment at the time of the survey has increased, reaching a record 1,121 in 2014. Yet the flat RWI from 2012 to 2014 occurred at a time when employment more than doubled—a solid sign of improving economic conditions in the market for veterinarians. **dvm360**



Dr. Mike Dicks, director of the AVMA's Veterinary Economics Division, holds a doctorate in agricultural economics from the University of Missouri. He has worked in Africa on water delivery and energy production technologies and has served with the USDA's Economic Research Service.

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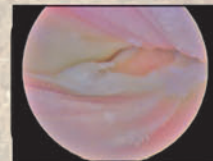
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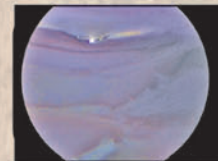
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Can you **predict** the future for *your practice?*

Maybe not, but you can make selling your practice an easier prospect by making thoughtful purchasing choices today.

If you're a TV addict as I am, no doubt you've seen the recent commercial in which the gentleman reprimands the lady and her baseball-bat-toting little boy for not cleaning off their sneakers before getting into "his" car.

"This is *my car!*" the little-league mom insists. But the man goes on to explain that he will be the second owner of that European luxury sedan and therefore he would like her to take better care of it until it lives in his garage.

Kind of wacky, but the commercial does start a person thinking about the possible advantages of trying to predict the future. Cars are a good example: Would you buy a new or previously owned model without considering its durability and resale value? And if you order one from the dealer, would you take delivery of an auto that nobody else would ever want? (Say, by ordering a taxicab interior or a bizarre color that appeals to you but not to many others.)

Yet while pretty much everybody thinks at least a little about the future marketability of a large-ticket item they plan to buy, why do so many veterinarians set themselves up in a practice facility that only they—and nobody else, ever—could love? Sadly, it happens all the time. And when it does, it can have serious long-term economic consequences—especially on retirement plans.



Practice real estate and the crystal ball

When young Bill and Hillary Clinton became silent partners in an Arkansas land deal, they no doubt made an effort to predict that it would become a great investment (it didn't) and that their participation would never result in much downside risk economic or otherwise (it did). They learned the hard way what anyone navigating the world of real estate investing quickly discovers: Success demands a cold, calculating, objective and well-reasoned effort to predict the future.

When a veterinarian approaches the question of where to establish her practice, well-educated and emotionless guesswork is called for—indeed, it's vital. The checklist of questions

begins at the macro level and works its way to the micromanagement of lease, contract, easement and other document language. Here are some guidelines that may help the veterinarian who's new to the brick-and-mortar game and expects to be closing a deal in the near future, either alone or with partners.

Macro considerations: Geography and demography

> **City/region.** Sure, Flummoxville may be home to you and you'd never want to live anywhere else. But if you build a veterinary palace there, how many veterinarians will be out there 25 years from now who are willing to pay significant dollars to commit to



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practicing 15 miles from the interstate, 30 miles from the closest movie theater and 75 miles from an airport? Rural clinics, especially expensive ones, are getting harder to sell as the population becomes more urban.

> Expansions. Plan for it! If you practice good medicine and treat team members and clients well, the practice will grow—and you need to anticipate that. Should you buy the vacant lot next door? Maybe you need to investigate an option to lease the adjacent space in the strip mall where you intend to open up. (Or maybe you should investigate an option to buy the strip mall where you are planning to open up.) Don't let your failure to think outside the box today put you in a box tomorrow.

> Neighborhood (7 years). Is the neighborhood experiencing a renaissance, or is it in a state of decline? If it's the latter, yet underserved by veterinarians, it might still be a good place to open or buy a practice building. It's probably not a good place to build or renovate a building. Declining neighborhoods usually mean stagnant or cheaper future rents. Yet construction costs in crummy areas are no cheaper than they are in more prosperous locations.

And did I say "buy" a building in a declining neighborhood? Absolutely! Under the right circumstances, a fire-sale price or tax lien sale on a solid building in a less-than-ideal neighborhood can be smart. Many clever veterinarians have done well by following a strategy of "buy practice—move a mile or two—repeat." This strategy can result in a lucrative and marketable practice in a decent neighborhood at the end. And if the first building was a super bargain, it may continue to generate cash for old doc as a storefront sandwich franchise.

> Neighborhood (8+ years). So ... you've found the spot where you want to build your career and practice forever. It's so keen that you are ready to borrow big bucks and build an impressive hospital—which will have high standards and high overhead. Nothing wrong with that, as long as you can reasonably predict that the area will remain fundamentally unchanged until you are ready to retire. Think about—and make a diligent effort to predict—the following:

1. Political climate. Is local government fiscally responsible? Or is it overly

anxious to tax and spend on unnecessary infrastructure? This can lead to crushing taxes in the future, which may scare off potential practice buyers just when you are ready to head to Florida. Or are taxes artificially low, so needed improvements to local roads and sewage projects are being postponed indefinitely and hurting future growth?

2. Climate. Once you have invested heavily in a practice, you'll have to live with the weather. If the town where you practice is cold and miserable a lot of the time, the number of potential practice purchasers will drop accordingly. This comparably low "demand" can hurt price when it comes time to sell and retire.

3. Emergency hospitals nearby. If your practice is to grow, you will likely need associates. Nowadays, many new graduates are hesitant to take positions that require being "on call." And those same doctors probably won't like the prospect of doing their own after-hours emergencies any better when they are older and looking for a practice to purchase or buy into.

Mid-level concerns: Infrastructure, building costs, lease longevity

> Environmental issues. You may not care that there used to be a trolley car repair facility on the property where you plan to build your clinic, but the next veterinarian to own the place probably will. Never, ever skimp on doing background checks on potential toxins in a building (lead paint, asbestos and so on). Don't ignore underground environmental threats that may make it difficult to sell the property to the next owner. Even if your state doesn't hold current owners liable for the oil dumping and other sins of past owners of real estate now, that may change at any time. And you don't want your title saddled with contamination you had no role in but still have to answer for.

> Utility hookups. Is your target building or leased property on the sewer line? Does it have natural gas? Does it have public water or just a well? If it doesn't have all three, you may be faced with a special tax when the municipality makes you hook up later on. As an owner, you may have to dig up your parking lot at great cost. As a tenant, your strip mall lease may obligate you to kick in a pro-rata share for such so-

called "special assessments."

> Lease renewals. Do you have perpetual renewals available on your lease? If not, your practice may eventually end up homeless. I know of several former strip malls on Long Island that, over time, evicted all of their tenant businesses so that the properties could be used for condo development. If that happens to a veterinarian, he may not be able to reestablish his practice in the same neighborhood because of zoning restrictions or simply because he can't afford to rent commercial space nearby.

Micro considerations

> Utility costs. Will I be proud of my utility bills when I go to sell and retire? If you build or remodel your clinic building on the cheap, prospective buyers may fear big expenses if you cut corners by electing against energy-efficient lighting, water-saving toilets and spigots or high-R-value insulation. Also keep that second owner in mind during any renovations.

> Usability. Could a non-veterinarian use this building? I sold a practice building a while back and it was an easy sell. The veterinary practice moved down the street to a new building but the old place I had designed with multiple uses in mind. Because of decisions I'd made at the time of construction as to the layout of load-bearing walls, organization of rooms, HVAC and so on, the new owner had no trouble turning my old clinic into a day-care center.

Consider phased build-out. Your practice will probably make lots of dough. But if it doesn't, why put yourself in a financial hole? By placing your initial structure strategically on the building lot as well as pre-placing gas, water, sewer, cable, Internet lines and high voltage upgradable conduit, you can build your first 1,200 or so square feet and see how things go. Then, when you are making a solid income, move ahead with phase 2 and build an attached 4,000-square-foot addition to accommodate all your new kennels, diagnostic equipment and team. Preplanning is so much cheaper than retrofitting. **dvm360**

Dr. Christopher Allen is president of Associates in Veterinary Law PC, which provides legal and consulting services to veterinarians. Call (607) 754-1510 or email info@veterinarylaw.com.



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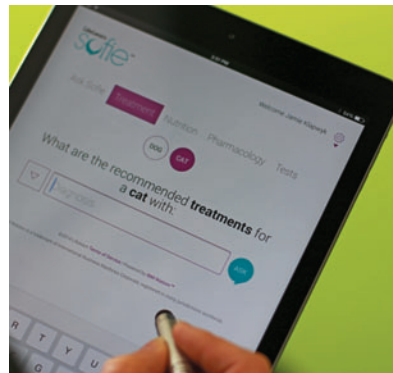
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PetZam has introduced a new app and website using live video to connect pet parents to their veterinarians for one-on-one, real-time advice. Clients, utilizing their mobile phone, can show their veterinarian the exact health situation and receive immediate advice regarding further medical attention. The service is a pay-per-session model and augments a veterinarian's existing practice.

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Zoetis Price analysis tool

Profit Solver from Zoetis uses a unique, patented and scientific method to make practice-specific recommendations using an individual practice's cost data rather than national or regional benchmarks. This financial tool measures labor rates as well as costs for overhead, materials and inventory via time-in-motion studies. From there, Profit Solver determines which services are profitable and which are not, providing the data practices need to make confident, smart pricing decisions.

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IDEXX Revised ordering process

IDEXX Laboratories customers may begin ordering all IDEXX products directly from the company in the United States. Orders come with free shipping, next-day delivery via UPS and FedEx to the continental United States, and full credit for unopened, expired products purchased directly from IDEXX. Direct-ordering clients receive a 20 percent discount on select chemistry tests for use on the Catalyst Dx, Catalyst One and VetTest chemistry analyzers when purchased with a profile through March 31, 2015.

For fastest response visit IDEXX.com or call 1-888-79-IDEXX



Vetlocity Loyalty program platform

Vetlocity has launched as a technology platform that allows veterinary manufacturers to provide loyalty and reward programs to veterinary practices and pet owners. Examples include rebates, electronic coupons, free product promos and other programs. The platform integrates with a practice's software data to drive pet owner enrollment.

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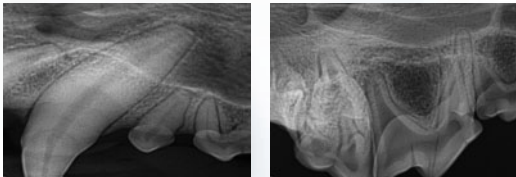
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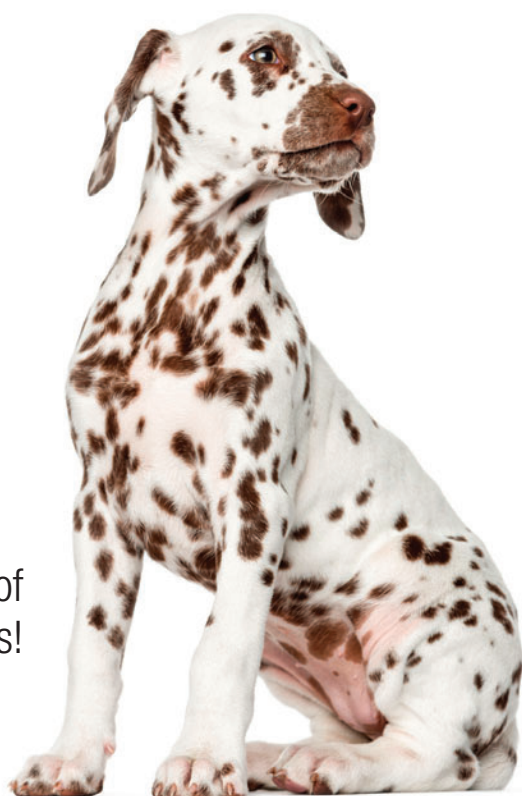
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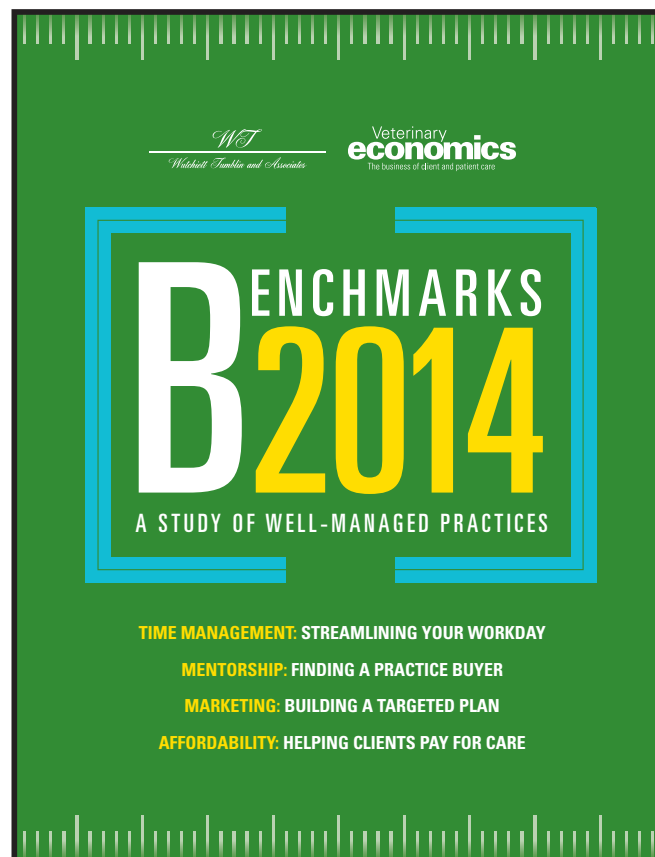
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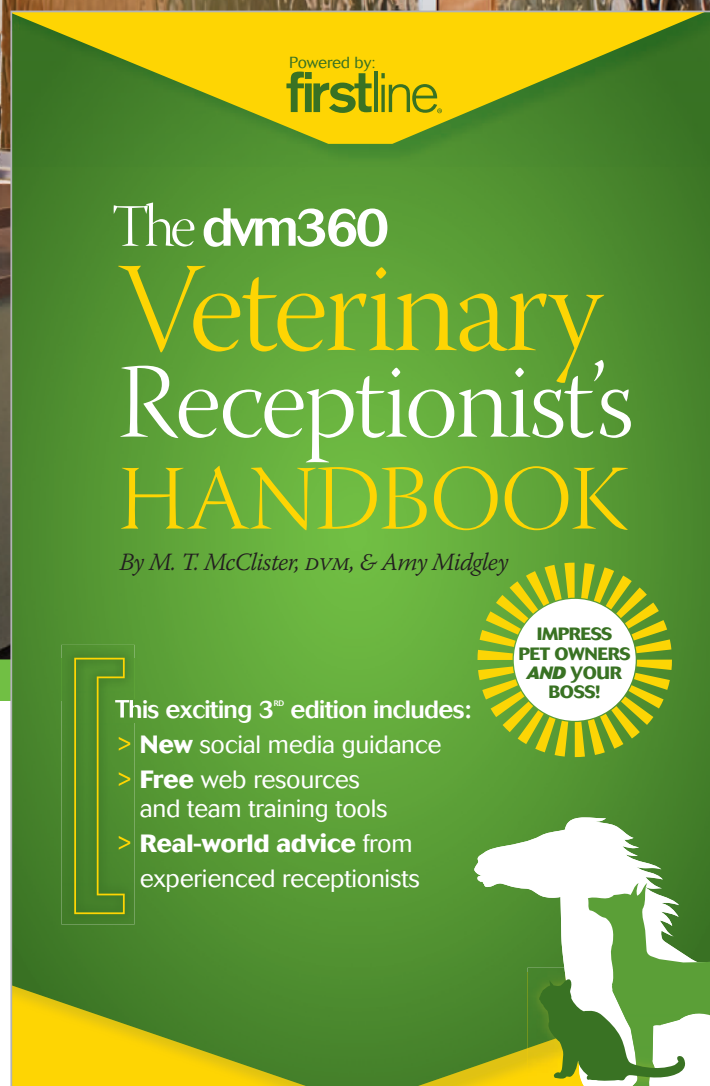


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After Proverbs 4:24
- » Trustworthy people keep their promises. They are reliable. Their yes means yes, and their no means no.
After Matthew 5:37
- » Trustworthy people are loyal. They know that to repeat unkind gossip about others is a divisive way of praising one's self.
After 1 Timothy 5:13
- » Trustworthy people are not biased. Being too quick to question the motives of others is not a manifestation of trust.
After 1 Timothy 5:21
- » Trustworthy people are humble, recognizing that the truth may not always be with them. They value the viewpoints, judgments and experiences of others.
After Proverbs 28:26
- » Trustworthy people are accountable. They try to recognize, admit and accept responsibility for their own mistakes.
After Proverbs 28:13

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to Dr. Carl A. Osborne:
fax (612) 624-0751
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For a full listing of events in 2014, visit dvm360.com/calendar



April 23-26, 2015
CVC Washington, D.C.
(800) 255-6864, ext. 6
thecvc.com/dc



August 28-31, 2015
CVC Kansas City
(800) 255-6864, ext. 6
thecvc.com/kc



National and international meetings

December 12-14 Practical Techniques in Soft Tissue & Orthopedic Surgery Las Vegas, NV (866) 800-73206 oquendocenter.org	vet.uga.edu/ce/calendar	(703) 733-0556 dcavm.org	February 9-13 EURASIA Veterinary Conference Kota Kinabalu, Bor- neo, Malaysia ++49-89-2180-2651 eurasia-vc.com/e	Sun Valley, ID (517) 381-2468 vosdvm.org/
December 13-14 Advanced Laparoscopic/ Thoracoscopic Surgery Athens, GA (706) 542-1451 vet.uga.edu/ce/cal-endar	December 13-15 Canine Neuro Rehabilitation Coral Springs, FL caninerehabilitationin-stitute.com	January 23-25 Multidisciplinary Advanced Therapies Symposium: Clinical Oncology Napa, CA (530) 752-3905 vetmed.ucdavis.edu/ce/	February 27 Music City Veterinary Conference 2015 Murfreesboro, TN (931) 433-6289 tvmanet.org	March 8-10 Animal Care Conference Sacramento, CA (916) 447-1700 cvma.net
December 17 Clinical Nutrition Oakbrook, IL (630) 325-1231 chicagovma.org/civi-crm/event/info	January 8 Ophthalmology Fairfax, VA	February 5 Soft Tissue Surgery Fairfax, VA (703) 733-0556 dcavm.org	Feb. 28-March 7 42nd Veterinary Orthopedic Society Conference	March 11-13 University of Pennsylvania Annual Conference Philadelphia, PA (215) 746-2421 vet.upenn.edu/about/news-and-events/
Outpatient Medicine Athens, GA (706) 542-1451				

Local and regional meetings

January 24-25 West Virginia Veterinary Medical Association Winter Meeting Charleston, WV (804) 346-0170 wvma.org/event/wintermtg-charles-tonwv/	February 4 North Carolina Academy of Small Animal Medicine 1-Day Meeting Sanford, NC (910) 452-3899 ncasam.org	Burlington, VT (802) 878-6888 vtvets.org/eweb/startpage.aspx	mvcinfo.org	March 6-8 Oregon Veterinary Conference Corvallis, OR (800) 235-3502 oregonvma.org
January 28 Maine VMA Annual Meeting Portland, ME (207) 752-1392 mainevetmed.org/eweb/startpage.aspx	February 7 Pennsylvania VMA 11th Annual Winter Conference Lafayette Hills, PA (888) 550-7862 pavma.org	February 11 Iowa VMA Winter Conference Altoona, IA (800) 369-9564 iowavma.org	February 22 Southwestern Indiana Veterinary Medical Association Annual Conference Evansville, IN (812) 305-1865 invma.org	March 13-15 California VMA Annual Spring Yosemite Conference Yosemite National Park, CA (800) 655-2862 cvma.net
January 30-31 Montana Veterinary Medical Association Winter Meeting Bozeman, MT (409) 447-4259 mtvma.org	February 8 Vermont VMA Winter CE Conference	February 13-15 24th Annual Alabama VMA Conference for Food Animal Veterinarians Columbiana, AL (334) 395-0086 alvma.com	February 22-26 Northern New England Veterinary Alpine Symposium Bretton Woods, NH (804) 346-2611 veterinaryskimeeting.com	April 11 San Diego County VMA Veterinary Conference San Diego, CA (619) 640-9583 sdcvma.org
		February 19-22 Midwest Veterinary Conference Columbus, OH (800) 662-6862	February 26-28 Virginia Veterinary Conference Roanoke, VA (978) 501-2682 vvma.org	

dvm360™ (Print ISSN: 2326-0688, Digital ISSN: 2326-070X) is published monthly by Advanstar Communications Inc., 131 W First St., Duluth MN 55802-2065. Subscription rates: \$40 for one year in the United States & Possessions, Canada and Mexico; all other countries \$87.50. Single copies (prepaid only): \$18 in the United States; \$20 in Canada and Mexico; \$24 all other countries. Back issues, if available: U.S. \$23; Canada/Mexico \$28; all other countries \$46. International pricing includes air-expedited service. Include \$6.50 per order plus \$2 per additional copy for U.S. postage and handling. Periodicals postage paid at Duluth MN 55806 and additional mailing offices. POSTMASTER: Please send address changes to DVM360, P.O. Box 6309, Duluth, MN 55806-6309. Canadian GST number: R-124213133RT001, Publications Mail Agreement Number 40612608. Return undeliverable Canadian addresses to: IMEX Global Solutions, P.O. Box 25542, London, ON N6C 6B2, Canada. Printed in the U.S.A.

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STAMPEDE | Bo Brock, DVM



DRIVEN BY a *love of the game*

Ol' Ralph is a kindly soul—until he's courtside at a basketball game.

Small-town veterinary clinics are often a great place to catch up on the happenings of the community. This day was no different. There was a group of county dwellers standing by the cow chute telling a story about ol' Ralph. I knew the fella they were talking about and was laughing from the gut as the story unfolded.

First, some background: High school sports are a big deal in the part of America I live in. I raised three daugh-

from scrutinizing the referees. For a while, this worked. But eventually I would put down the camera and just start hollering anyway.

As the years passed, I learned it was best to just leave. If you know anyone who attended basketball games at Klondike High School from 2006 to 2012, they will tell you that I left a lot of basketball games. It was almost a given. If Bo was walking toward the door, the game was

I always thought he was the most obnoxious fan in the world, and the story I was hearing by the cow chute confirmed that fact.

Seems that he and his wife were headed to Dallas one Friday to visit some friends and family. Along the way they passed through a small town and Ralph noticed the gym parking lot was packed with cars. Ralph told his wife they should stop and watch the basketball game.

Come on, Ralph. Stop in a little town 200 miles from home on a Friday night where you don't know a soul, just to watch a basketball game? His wife had reservations about the situation but before she could stop him, Ralph was parked and they were heading inside.

No one standing around the cow chute knew what happened to get him fired up, but the story ended with Ralph getting kicked out of the game.

Just think about it. Ralph is watching high school basketball 200 miles from home, in a town where he doesn't know a single person, and he gets kicked out of the game. You just have to wonder what the fans were thinking as some guy that no one on either side of the gym knows hollered so much he got ejected.

I have to admit, it makes me laugh every time I think about it. I think Ralph needs to start taking pictures when he goes to a game and if he can't, he just needs to get up and leave. Maybe I'll loan him my camera. **dvm360**

Dr. Bo Brock owns Brock Veterinary Clinic in Lamesa, Texas.

At least I could control myself. Ol' Ralph couldn't. That guy loved to go to basketball games, and he loved to holler at the refs. In fact, I think it was his favorite thing to do in life. I had seen that rascal kicked out of at least 20 basketball games.

ters who played basketball every Tuesday and Friday night in gyms within a hundred miles or so of Lamesa. In these parts, people in the stands take these games way too serious. I've seen so many people kicked out of basketball games that it's almost unbelievable. I myself have a tendency to get a little too worked up.

When the girls first started playing, I would scream and holler and get carried away to the point that I was embarrassed when the game was over. I decided to buy a camera and start taking pictures—that way I could only see the segment of the game that was occurring though the viewer on the back of the camera and this kept me

close and he was leaving because it was just a matter of time before he started hollerin' at the ref.

But at least I could control myself. Ol' Ralph couldn't. That guy loved to go to basketball games, and he loved to holler at the refs. In fact, I think it was his favorite thing to do in life. I had seen that rascal kicked out of at least 20 basketball games. He'd get kicked out even when his team was winning. It was amazing. He's the kindest, most meek man you'll meet—until the first whistle blows and his team takes the court.

Ralph is from a community that's a huge rival of Klondike. Most of the time we would beat his team, so we got to see him turn red and scream.

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