#### FALL 2024



# Dear Clients & Friends,

First, thank-you to everyone who sent get-well cards for my surgery in June. I really appreciate all your thoughts and prayers. I know so many wonderful and kind clients! I'm back at work and feeling fine.

According to one study, 71% of human supplement products sold in stores contain **ABSOLUTELY NONE of** the active ingredient listed on the label! Pet supplement testing has shown similar results.

We had a Lunch 'n Learn from our Nutramax<sup>™</sup> rep today. Nutramax researches, manufactures and sells the brand of supplements recommended the most by veterinarians in the US. I got a few extra data points from her Powerpoint presentation, from studies that help to drive home the fact that our recommendations are really important.

One of the new stats I learned was about a study done on supplements in 2015. Products were pulled from shelves at Walmart, Walgreens, Costco and Target stores. Analysis showed a full 71% of supplement products sold in these stores contained ABSOLUTELY NONE of the active ingredient listed on the label. Many of the rest had a reduced amount compared to what the label



said. Some contained too much, which can be dangerous depending on the compound.

This means if you choose a product for your dog that's not been recommended by us (no matter how many friends,

"experts" or celebrities recommend it) you will almost certainly get ripped off. You can save a lot of money purchasing products online instead of from us, but chances are good you will be paying for an ineffective supplement that will do your pet absolutely no good, and could even be dangerous.

I also recently rewatched the exposé done on the supplements industry in 2016 by the TV show Frontline. I had forgotten parts of it. One of the more shocking points is that the FDA generally doesn't investigate any product unless people have died from taking it. The reason the FDA doesn't regulate these products is because when congress attempted to pass a law many years ago to regulate this industry, the huge companies manufacturing these products lobbied so heavily to dissuade lawmakers from letting the FDA do so that they actually passed legislation forbidding the FDA from regulating supplement manufacture. (Here's the youtube link if you want to watch it. It's pretty horrifying! https://www.youtube.com/ watch?v=G8LG0OY3Izs&t=5s)

As we've said many times in our newsletters and handouts, base your product purchases on science, not marketing! Anything you buy for medical purposes, or to feed your pet, for that matter, should have

Nutramax products include joint supplements such as Cosequin and Dasuquin; Proviable probiotic, one of only 3 veterinary products shown by analysis to contain the amounts of live bacteria listed on the label; and other products used for treating gastrointestinal, dermatological and renal diseases.

research and quality control behind it. Nutramax, like all of the products we recommend, has done clinical trials on their products and on the ingredients that go into them. Nutramax participates in a voluntary FDA program that inspects their products and facility every other year. They have published dozens of studies on the ingredients they use and how they are absorbed and utilized by animals. Our rep could tell us exactly what percent of the turmeric in Dasuguin Advanced is absorbed from a dog's stomach within 4 hours of ingesting it!

Companies like Nutramax or Ellevet, the CBD manufacturer we've talked about in a recent newsletter, do the research to determine what the effective dose is for each of its ingredients, and which processing method works the best. Their products contain precise amounts of each active compound, which they verify with laboratory testing. I don't care how fancy the website is, how amazing the commercials are or how many glowing testimonials tout its benefits. If a product doesn't have science and testing behind it, we won't sell it or recommend it. Buy your products from us!



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JUST A NOTE, TOO – our prescription diet prices are exactly the same as Chewy's, but when you buy things from us, you are supporting a local small business. We have an online store, too! Sometimes our prices for medications are higher than Chewy's but sometimes they aren't. Even if they are a few cents more, who would you rather be getting the slim profit we make from selling medications, food and supplements – the investors at billion-dollar online pharmacies or your local veterinary clinic? We appreciate those of you who buy from us!

### ARE HERBAL PRODUCTS AND SUPPLEMENTS SAFE?

In case you weren't on our mailing list at that time, here's the article on supplement safety I wrote in 2017.

A lot of folks have the misconception that "natural" remedies such as herbs are safer than prescription medications. Unfortunately, there is no FDA testing of herbs and supplements, and many of these products are completely unsafe. The University of Guelph published a paper in 2013 detailing their findings of safety and quality problems in 44 herbal products, obtained from 12 different companies. The authors found 60% of the products contained DNA from plant species not listed on the label, some of which were quite harmful.

Feverfew was a common extra ingredient found. Feverfew can cause nausea, vomiting, diarrhea, abdominal pain and swelling in the mouth. It is also addictive, so if you stop giving it, withdrawal leads to rebound headaches and muscle pain.

Many compounds examined in the study contained



none of the herbs listed on the label but instead contained cheaper substitutes. For example, one product labeled as St. John's wort contained only senna, an herbal laxative, which would thus produce diarrhea in

unsuspecting consumers.

An expose called "Supplements and Safety," broadcast on Frontline on Jan. 19th of 2016, led to New York's Attorney General to issue cease-and-desist letters to 13 makers of Devil's Claw products marketed for arthritis that contained no Devil's Claw. The U.S. attorney general recently directed four major retailers – Walmart, Target, Walgreen's and GNC – to halt the sale of certain herbal supplements after DNA testing



failed to detect the plant materials listed on the labels of the majority of products tested, and also found DNA from contaminants not listed on the labels. Several Echinacea products were found to contain mostly rice and buttercup DNA, if they contained any plant DNA at all. Target's valerian root contained garlic and wild carrot but no valerian. Walgreen's St. John's wort consisted of garlic, rice and the house plant Dracaena. Walmart's gingko biloba had only dracaena, mustard, wheat and radish DNA.

So far, there has been no comparable large study on herbal or supplement products marketed for animals. Consumerlabs.com has done testing on a variety of supplements, including glucosamine and fish oil products marketed for both animals and people. Like the Guelph study, they found many, many products did not contain what was stated on the label. Nature's Way and GNC have announced implementation of new testing standards but for most of these types of products, there is absolutely no guarantee you are getting what you are paying for.

Look for the logo of the National Animal Supplement Council or ask us for a recommendation for any of these products before you buy.



A new blood test that screens for two of the most common cancers in dogs has become available.



Approximately 77 million dogs live in the US, and 6 million of them are diagnosed with cancer every year. Cancer is the most common cause of death in dogs over the age of 2 years in the U.S. Almost 50% of dogs over the age of 10 will develop cancer in their lifetimes. The older the pet, the higher the risk.

Until now, we haven't had screening tests like those used for cancer detection in humans. There are no mammograms, PSA tests or routine colonoscopies for dogs or cats. But now, a new blood test that screens for two of the most common cancers in dogs has become available. It's called NuQ, and it detects

cancer markers that break off from cancer cells and circulate in the bloodstream.

Early detection of cancer saves lives, improves quality of life and gives you more time with your dog than a late diagnosis. The prognosis is always more favorable when cancer is detected at stage I and not stage 4 or 5, where it has spread to multiple organs.

Current testing for cancer in pets usually only occurs when a dog has symptoms of cancer. Diagnostic testing at that point can be expensive and timeconsuming. In contrast, NuQ is a quick and easy blood draw after a brief 4-hour fast.

NUQ CANCER SCREENING TEST

Some dog breeds have particularly high risk for hemangiosarcoma and/or lymphoma. For these dogs, testing may be recommended at an earlier age. These include: •All senior dogs weighing over 50 lb. •Beagles •Boxers • Bernese Mountain Dogs •Flat-coated Retrievers •German shepherds •Golden Retrievers •Irish wolfhounds •Labrador Retrievers •Mastiffs • Miniature Schnauzers • Pembroke Welsh Corgis •Rottweilers • Scottish Wolfhound • Shetland Sheepdogs • Siberian Huskies • West Highland Terriers

the spleen and send a larger piece of it to a pathologist to know for sure which type it was.

Removing a spleen with hemangioma is curative. Removing a hamangiosarcoma, the cancerous form, buys some time, usually a couple of months, but then cancer usually recurs in some other organ, like a kidney or the heart. Whether to go ahead with surgery would be an easier decision if we knew if it would provide a good long-term prognosis. Now, we can find out with a simple blood test, so we can make a better treatment decision before spending thousands of dollars on emergency surgery.

It's also much easier to remove a spleen with a small, early tumor than a large one. These tumors eventually start tearing open and bleed into the abdomen. Catching it early means we can plan surgery rather than have it be a critical emergency as the dog is bleeding to death from a ruptured spleen. This turns a \$10,000 surgery at an emergency clinic in the middle of the night into a \$3000 surgery here during business hours. The \$150 or so you spend here on the NuQ test could save you thousands of dollars!

The other cancer NuQ can detect is called **lymphoma or lymphosarcoma** (LSA). It's a cancer that arises from

We can use the NuQ test for cancer screening in any dog. This testing is especially important for dogs older than age 7. Golden retrievers have particularly high risk for lymphoma and should be tested annually after age 4. We will also use it to screen any age dog with signs or suspicion of cancer.

NuQ detects Hemangiosarcoma, a cancer formed from blood



Removing a spleen with a large tumor, circled in blue

vessels that usually develops in the spleen (**see picture at left**); and lymphoma, a cancer of a specific type of white blood cells. Together, these two types of cancer make up about 1/3 of cancer cases in dogs.

Most tumors of the spleen are either hemangiosarcoma (HSA) or hemangioma. HSA is the cancerous

form and hemangioma is the benign form of the disease. We can't tell them apart by collecting cells from the tumor with a needle. Prior to the NuQ test, we have had to surgically remove

lymphocytes, the type of white blood cell that makes antibodies to fight specific disease-causing organisms. Because white blood cells are everywhere in the body, lymphoma can develop almost anywhere. It can cause a high white blood cell count, swollen lymph nodes, or disease in the kidneys, liver or spleen. Even skin nodules can turn out to be lymphoma. Lymphoma is treated with chemotherapy.



Picture from Freepik.com, showing red blood cells, the smaller circles, and white blood cells, which are the larger, saucer-shaped ones.

NuQ isn't a perfect test. It detects 89% of hemangiosarcomas and 77% of lymphoma cases. However, that's far better than any cancer screening we've had in the past. We recommend testing at least annually. *If you are interested in doing this test when you bring your dog in for a wellness visit, please remember to not feed your dog in the 4 hours prior to your visit.* 



### NEW CANCER VACCINE



Adapted from an article in DVM360 (DVM360.com) by Sydney Yankowicz, Assistant Editor

A new vaccination shows successful treatment of canine cancer after a golden retriever, Hunter, has no evidence of bone cancer after therapy. In early 2022, Hunter was diagnosed with osteosarcoma, OSA, with only a 30% chance of living longer than 12 months after developing the disease. Osteosarcoma is the most common form of bone cancer in dogs, representing 85% to 98% of all bone tumors. It is typically found in large to giant dog breeds in middle to old age. When treated by amputation or tumor removal alone, median survival times do not exceed 5 months, with the majority of dogs suffering from metastatic disease – the spread of cancer to other organs, especially the lungs.



After undergoing treatment from Yale researcher, Mark Mamula, PhD, Hunter now has no evidence of cancer. The vaccination treatment is a form of immunotherapy currently under review by the US Department of Agriculture. The vaccine has also been tested in clinical trials and

has demonstrated promising results for the vaccine, showing its effectiveness in hundreds of dogs, including Hunter.

Much like in humans, researchers have discovered that dogs with various cancers, such as colorectal cancer, breast cancer, and osteosarcoma, exhibit elevated levels of proteins called epidermal growth factor receptor (EGFR) and human epidermal growth factor receptor 2 (HER2). The typical treatment for humans with these cancers involves monoclonal antibodies, which are proteins that can attach to and influence EGFR and/or HER2 function. However, patients often build resistance to these antibodies, diminishing their effectiveness over time.

To create a new treatment approach, Mamula and his team took am innovative route. While monoclonal antibody treatments are derived from a single immune cell and target specific parts of EGFR/HER2 molecules, Mamula and his team aimed to trigger a polyclonal response. This means generating antibodies from multiple immune cells rather than just one, enabling them to bind to various parts of the EGFR/HER2 molecules instead of a single area. The goal is to reduce the likelihood of resistance development, theoretically enhancing the treatment's effectiveness.

The first clinical trial was conducted in 2016 and more trials are still ongoing at 10 locations in the US and Canada. Over 300 dogs have now been treated with the vaccine. The vaccine induces the production of antibodies capable of targeting and binding to tumors, which then disrupt the signaling pathways responsible for tumor growth.



The research team currently reports a notable improvement in the 12-month survival rates of dogs with varying types of cancers, at approximately 35% to 60%. Additionally, many dogs undergoing the treatment experience tumor shrinkage. While exploring the vaccine's effectiveness in humans through clinical trials is a potential future step, the current focus for Mamula is obtaining USDA approval for the vaccine's use in dogs and its broader distribution.

"I get many emails from grateful dog owners who had been told that their pets had weeks or months to live but who are now 2 or 3 years past their cancer diagnosis," Mamula said. "It's a program that's not only valuable to me as a dog lover. Witnessing the happiness that successful therapies provide to families with dogs is incredibly rewarding."

Hunter had his front limb amputated and after the vaccine treatment, he has been cancer free for 2 years. He used to work alongside his owner, Deana Hudgins, as a searchand-rescue dog, helping find victims of building collapses and other disasters. After his cancer diagnosis, he no longer performs those duties, but now, at 11-years-old, Hunter helps Hudgins train other dogs.

Mamula told Yale that once this vaccine is approved and available on the market, it will be free for working dogs like Hunter.



### GENETIC TESTING IN CATS



I've written quite a bit in Best Friends Bulletins about genetic testing in dogs, but not a lot in cats. Cats can have genetic defects that lead to disease just

as dogs do. Some of them are even the same or similar to gene mutations in dogs. One of these is a gene called MDR1. MDR1 is a common gene variant in herding breeds, such as Australian shepherds, border collies and old English sheepdogs.

The MDR1 variation in dogs causes the blood-brain barrier to be leaky, thus enabling some medications to affect the brain that wouldn't cause a problem in a normal dog. Doses of these drugs that are safe for a normal dog may not be safe for a dog with MDR1. This issue with medication will be worse if the dog has two copies of the gene, one from each parent, than if it only inherited one copy from one parent.

One of the medications dogs can have trouble with if they are MDR1 positive is Ivermectin, the heartworm preventive in Heartgard<sup>™</sup> and many generic heartworm preventives. Well, it turns out cats with MDR1 can be sensitive to some forms of heartworm prevention also.

According to information released from the veterinary school at Washington State University, up to 4% of all cats, approximately

4 million in the U.S. alone, have either one or two mutated copies of the MDR1 gene. This can make common medications, including those used for parasite control, potentially lethal, even when used at recommended dosages.



#### Dr. Katrina Mealey is the veterinarian

who initially discovered the MDR1 mutation and invented the first test to detect the condition. Mealey and her team have already identified some medications, including products containing eprinomectin and ivermectin, that can put cats with the MDR1 mutation at increased risk of adverse reactions, but they suspect additional drugs might be causing adverse reactions in cats with the MDR1 mutation. Cats with the mutation may experience lethargy, ataxia, muscle tremors, disorientation, blindness, muscle weakness, and death when treated with the drugs.

The MDR1 mutation is more common in non-purebred cats, with the exception of Maine coons, which appear to have a higher representation than any other pure breed. **Mealey recommends all cats be tested for the mutation to avoid preventable adverse reactions to medications.** 

WSU offers both canine and feline MDR1 genotyping for a fee but they are currently collecting cheek swab samples from cats for MDR1 genotyping at no cost to owners. She is specifically looking for cats that may have experienced a neurological adverse reaction to NexGard COMBO<sup>™</sup> (eprinomectin), Centragard<sup>™</sup> (eprinomectin), Profender<sup>™</sup> (emodepside), Revolution<sup>™</sup> (selamectin) or Cisapride (compounded formulation). They have sent us three kits we can submit for testing at no charge. **If your cat has had neurological symptoms after receiving one of these preventives and you'd like to participate in the study, give us a call.**  Dr. Mealy says "If we can determine a drug is causing adverse reactions in cats with the MDR1 mutation, we can recommend that an appropriate warning be included on applicable product labels."

We had started prescribing Nexgard Combo for cats, which contains eprinomectin, but we've backed away from that, temporarily at least, until we know more. It seems that the neurologic issues from eprinomectin are much worse than anything we've seen with Ivermectin or selemectin. MDR1-positive cats given Nexgard combo had a pretty high fatality rate in the first small study that was released. Since this information came out very

recently and there hadn't been an MDR1 test for cats, we haven't been testing for it. We have no idea which 4% of our feline patients have this gene, so we don't feel safe newly prescribing Nexgard Combo. (If your cat has already been given Nexgard Combo with no problems, it should be perfectly safe to continue on it. If it were going to cause a problem, you should have seen it with the first dose. For 96% of cats, it will be perfectly safe. (We have continued our clinic cats on Nexgard Combo.)

"If your cat has already been given Nexgard Combo with no problems, it should be perfectly safe to continue on it."

Previous to using it, we recommended Revolution<sup>™</sup> or Revolt<sup>™</sup>, containing selemectin, to prevent heartworms, fleas, ticks and roundworms. If the kitten or cat also had intestinal parasites, we would use Profender<sup>™</sup> in addition to the selemectin. Nexgard combo is nice because it killed intestinal parasites, as well as being the preventive medication. It's less expensive to only have to give one product instead of two. However, at the moment we think it's safer to pay the extra money to use both medications, rather than risking eprinomectin if we don't know a cat's MDR1 status.

Several brands of DNA tests for cats test for over 150 genetic defects in cats. Oravet and Embark are brands we've used quite a bit. We've mostly been genotyping purebred cats for specific diseases they are at risk for, such as cardiomyopathy in ragdoll cats and polycystic kidney disease, PKD, in Persians. We hope the MDR1 test eventually is included in these kits so we can test for many diseases in a single swab. Since average domestic shorthair

ASK US BEFORE PURCHASING A DNA TEST KIT FOR ANY PET ONLINE. SOME OF THOSE KITS ARE INACCURATE TO THE POINT OF BEING USELESS. DNA TESTING IS DIFFICULT AND REQUIRES A VERY GOOD LABORATORY. verage domestic shorthair and longhair cats are at risk for the MDR1 abnormality, we will be recommending MDR1 testing for all cats in 2025.

One of the DNA test companies, Base Paws (BasePaws.com) has DNA

test kits using oral swabs that include the cat's genotype but also bacterial DNA markers to evaluate the different bacteria in the mouth. They give you a risk evaluation for periodontal disease and for tooth resorption along with DNA testing of the cat itself. This kit gives you the advantage of knowing if your cat needs more frequent dental cleanings and dental radiographs. They can even tell you the approximate age of a rescued cat based on the level

of deterioration in the genes - DNA slowly degrades with age, which can be measured.

DNA testing is a great idea for both dogs and cats. The more you know about your cat's health, the more proactive you can be to keep them healthy and happy.



## H5N1 AVIAN INFLUENZA 🦽

We keep getting and passing on to you updates on the current worldwide epidemic of avian flu. The news keeps getting worse. The virus has now been reported in cats, dairy cattle and goats, and it's killed thousands of sea lions on the west coast. Any day now, it could start affecting humans. Influenza A viruses change over time as they reproduce in cells and, occasionally, mix with other variants and become adapted to new hosts.

ORGANIZATIONS EXPECT TO REACH GOAL OF HELPING 100,000 PETS IN UKRAINE BY THE END OF 2024



### ADOPT Me'a'

We are still in need of a home for Lionel! He is 3 years old. He was surrendered because his owners couldn't afford to care for his urinary tract problem. He is now healthy (as long as he stays

on the correct prescription food and daily antianxiety medication). Cats surrendered to us often end up going home with an employee, but everyone seems to be full up right now.

Lionel is affectionate and friendly. He loves being picked up and snuggled. We would like him to have a better life than he does at the clinic, where we have to lock him up all the time to keep him out of trouble while we are working.

Lionel has been a problem here with our other clinic cat, Tia, though he got along with our other foster cat who



was here for a couple of months. He would probably do best in a single cat household, where he will be a snuggly lap cat and hog all the attention! Lionel is fine with dogs. He is neutered and up-to-date on vaccinations.

If you have a space in your house and heart for a kitty, come meet him!

There has been very little press coverage about what happens to animals in a war-torn country. Along with the millions of displaced people, there are millions of displaced or homeless pets and farm animals with no one left to provide for them. Well, here is something positive about that.

Since their collaboration began two years ago, animal protection charity Humane Society International and the Ukrainian Red Cross are expected to help 100,000



pets, as well as 40,000 pet owners, in wartorn Ukraine by the end of 2024, Humane Society International announced.

GOAI

**REACHED** 

The organizations

have been working together to provide lifesaving aid such as pet food, veterinary care and supplies for pets and support for their owners internally displaced or otherwise affected by conflict in Ukraine.

So far, the partnership has provided emergency relief in 14 regions across Ukraine, reaching over 19,000 pet owners and 40,000 pets and delivering over 205 tons of pet food. In addition, 48 tons of cat litter, 3,530 litter boxes, 2,500 pet carriers and 9,000 packages of flea and tick prevention have been distributed to help dogs and cats in need, the organization said.

To donate to this cause, go to https://donate.hsi.org



### INTERESTING TIDBITS

A team of Swedish and British scientists have used information from over 35,000 pairs of twins in the Swedish Twin registry to show dog ownership has a genetic basis. A person's genetic makeup is a significant influence in whether they own a dog. Rates of dog ownership are higher in identical twins than in nonidentical ones. Overall, genetics and environment play about equal roles in determining pet ownership.

One female German shepherd and two male border collies were able to help scientists track endangered blunt-nosed leopard lizards in California's San Joaquin Valley after they were trained to detect the reptile's scat, which is often hard for humans to find. "Conservation dogs" have successfully tracked the San Joaquin kit fox, wolves, cougars, moose, river otters, black-footed ferrets and even a species of whale. Scientists think the method could work on a wider scale for many species.

Veterinarians say they are handling a growing number of marijuana toxicity cases, and AVMA spokesman Michael San Filippo says edibles are especially dangerous for pets because many contain chocolate or xylitol. Marijuana does not cause the same high in animals as in humans and instead is frightening, makes them sick and can kill them, San Filippo says. Pets that may have ingested marijuana need immediate veterinary attention.

Many pet rabbits show signs of neglect such as overgrown nails and teeth, digestive issues, and skin problems and might be leading solitary, lonely lives, according to a study of pet rabbits in the UK. Rabbits need companionship; a large, safe exercise area; a grass- or haybased diet; vaccinations and periodic veterinary checkups.



Veterinarians led by Cynthia Otto at the University of Pennsylvania School of Veterinary Medicine's Penn Vet Working Dog Center are calling for the formation of a coalition of dog breeders in the US to sell detection dogs to federal agencies. The American Kennel Club's Detection Dog Task Force is running a pilot program to help breeders raise detection dogs and find buyers. Dog owners are 24% less likely to die prematurely of any cause than people who don't own dogs, and the benefit associated with dog ownership

is especially pronounced among people who have heart problems, a study published in Circulation: Cardiovascular Quality and Outcomes found. Prior studies have come to similar conclusions, and researchers say dog ownership has both physical and mental health benefits.

Intensive breeding of floppy- or lop-eared rabbits has produced animals whose altered head shape causes dental pain and problems eating, and whose ears are prone to deafness and accumulation of wax, a study published in Vet Record found. Some ears are so long they restrict movement, leading to obesity, and a statement from the British Veterinary Association urges potential owners to consider health instead of looks when choosing a pet.

An estimated 100,000 dogs are killed each year while riding in pickup truck beds, and many more suffer broken bones, pelvic fractures, internal injuries and spinal cord injuries. Dogs should



ride inside the passenger cabin, secured by a seat belt, says veterinarian Enrique Carlo. Those that must ride in the back of a pickup should do so only in a secured crate and should never be tethered.

When their 7-year-old border collie managed to escape from a hotel room near Glacier National Park in Montana, Carole and Verne King launched an all-out search that would result in success 57 days later, after Carole quit her job and Verne invested in night-vision goggles.



### TOO MANY PET OWNERS ARE NOT TAKING HEARTWORM DISEASE SERIOUSLY



In honor of National Heartworm Prevention Month, Banfield Pet Hospital has released the results from its pet owner survey, examining the public's attitudes towards parasite prevention. The veterinary network surveyed

1,000 dog and cat owners within the United States and analyzed pet medical records for insights into seasonal and local trends. The key findings include the following:

Nearly 40% of dog and cat owners don't believe their pet is at risk of getting heartworms. Nearly 30% said their pet is not on heartworm prevention. 21% of pet owners don't believe the mosquitos in their state carry the parasite, despite heartworm cases being diagnosed in all 50 states.

41% of surveyed pet owners said they believe heartworm is only a risk during part of the year. 51% skip year-round prevention, with 18% only using heartworm prevention for their pets during spring and summer months.

These numbers can be disappointing for veterinary professionals because the rate of heartworm disease is high and trending up, even though this disease is preventable with year-round preventatives. "Research has shown rates of heartworm in pets have continued to trend upward nationwide, despite prevention being generally safer, easier and less expensive than treating an existing infection," said Alea Harrison, DVM, chief medical officer of Banfield Pet Hospital, in the company release.

Pets in all states are at risk of heartworm. According to the American Heartworm Society (AHS), rates have continued to trend upward in both heartworm "hot spots" and in locales where heartworm cases were once rare. According to Banfield's records database, Delaware had a 299% increase in rates of heartworm in the past five years, while Montana had a 140% increase, and Nevada had a 101% increase to make the top 3 list.

Overall, Banfield reported finding a 47% increase in felines diagnosed with heartworms in the past 5 years. These data reports and owner surveys show the importance for continued client education on the necessity of parasite prevention and especially education surrounding the need for year-round upkeep.

Here at Best Friends, we recommend that all cats and dogs, indoors or out, be given monthly preventives all year 'round. It could save your pet's life!

Overall, Banfield reported finding a 47% increase in felines diagnosed with heartworms in the past 5 years.