



# Dear Doctor



News, updates, and practice tips for today's veterinarian. | Vol. 1 No. 3 Oct./Nov.

## A Closer Look

# Increased leptospirosis cases make prevention critical

### THE RESPONSE TO CLIMBING CANINE LEPTOSPIROSIS CASES YIELDS A NEW STANDALONE VACCINE THAT TARGETS FOUR SPECIFIC SEROVARS.

How many tests submitted for canine leptospirosis come back positive? Fort Dodge Animal Health representatives have conducted surveys of veterinary practices in about 20 states since 2002. So far, with data provided by Zoasis Corp. and Antech Diagnostics Inc., the results indicate that 20% to 30% of submitted leptospirosis tests return with positive results.

These findings mirror what researchers already knew: Leptospirosis is on the rise. "In the last 20 years, we've seen a reemergence of canine leptospirosis, along with changes in geographic distribution and the most common serovar types," says Larry Glickman, VMD, DPH, head of clinical epidemiology in the department of veterinary

pathology at Purdue University's School of Veterinary Medicine in West Lafayette, Ind. Dr. Glickman co-authored a study in early 2002 that found a significant increase in canine leptospirosis prevalence between 1983 and 1998.<sup>1</sup>

More recent retrospective studies conducted at Purdue's School of Veterinary Medicine corroborate the shift in geographic distribution and serovar-specific prevalence. For example, one study published in the July 1, 2004, issue of *JAVMA* found significant associations between leptospirosis and environmental factors, including dogs living in rural areas that were urbanized between 1990 and 2000.<sup>2</sup> Simply put, cases that once flourished predominantly in rural environments are now cropping up in metropolitan areas. As housing developments replace former woodlands, wetlands, and farmland, pets and people are more likely to encounter raccoons, skunks, opossums, and rats—the most common mammalian hosts for *Leptospira* species. And even though leptospirosis is more common in wet, moderate climates, infection is possible in any environment, says Dr. Glickman. "I haven't seen any place where leptospirosis is not present," he says. "You'll see it wherever you look for it."

In regard to *Leptospira* serovars, a

### Quick leptospirosis facts

#### Clinical signs

- fever
- appetite loss or anorexia
- vomiting
- lethargy
- diarrhea
- abdominal pain
- unexplained hemorrhaging
- kidney or liver dysfunction

#### Diagnostic tests

- polymerase chain reaction test using a urine sample (best for early diagnosis)
- microscopic agglutination test (best for later diagnosis)

#### Treatment

- penicillin or ampicillin (to eliminate the bacteremic phase)
- oral doxycycline (to eliminate the carrier state)
- supportive care (fluid therapy and urine output measurement)

2004 *JAVMA* study looked at 90 dogs from Indiana that were diagnosed with leptospirosis from 1997 to 2002. Most of the cases were associated with *grippityphosa*, followed by *bratislava*, *icterohaemorrhagiae*, and *pomona*.<sup>3</sup>

### A new vaccination

These trends in *Leptospira* infection—higher frequency, broader areas of incidence, and newly recognized serovars—

Leptospirosis (continued)

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## Leptospirosis (continued)

have led Fort Dodge Animal Health to develop LeptoVax™ 4, the newest member of its Duramune line of *Leptospira* vaccines. “The number of canine leptospirosis cases has risen dramatically in recent years, with most cases caused by the emerging serovars *grippotyphosa* and *pomona*,” says Mike LaRosh, DVM, director of Fort Dodge’s companion animal professional services. “LeptoVax™ 4 and other Duramune *Leptospira* vaccines are the only vaccines proven effective against these two emerging serovar threats, as well as the traditional serovars.” In addition, Dr. LaRosh says vaccines that only protect against traditional serovars may not offer cross-protection against newly emerging serovars, which leaves dogs at risk for serious infection.

Another advantage of LeptoVax™ 4 and other Fort Dodge *Leptospira* vaccines is the company’s use of subunit technology, which helps produce safe and highly effective vaccines (see *Take Note* sidebar).

Considering these developments, Dr. Glickman advises veterinarians to do three things. First, vaccinate for leptospirosis routinely. He strongly recommends twice-a-year vaccination for sporting, hunting, or outdoor dogs, and once a year for all other dogs (see the *Don’t Wait* sidebar).

Second, know the science behind this devastating disease so you can diagnose it, treat it, and ideally, prevent it.

Finally, submit tests to laboratories for confirmation if you suspect leptospirosis. The sooner you identify this potentially deadly disease and begin antibiotic therapy, the better the outlook for your patient’s recovery.

## Don’t wait until it’s too late

On June 22, the doctors at Cheektowaga Veterinary Hospital in Cheektowaga, N.Y., were forced to euthanize a German shepherd—but this incident was harder to bear than most. The dog presented with a two-day history of vomiting and severe lethargy. Clinical signs included fever, dehydration, and icterus. Laboratory testing revealed severe, acute renal failure and hepatic disease. Serologic testing by a diagnostic lab confirmed the diagnosis of leptospirosis. (Clinic doctors had documented two confirmed cases in 2003.)

Unfortunately, the dog was receiving DHLPP vaccinations once every three years—the last vaccination had been administered in late November 2001. The next booster was scheduled for this November.

Michael Keem, DVM, a doctor at Cheektowaga Veterinary Hospital, wants other doctors who administer leptospirosis vaccinations in

## References

1. Ward, M.P. *et al.*: Prevalence of and risk factors for leptospirosis among dogs in the United States and Canada: 677 cases (1970–1998). *JAVMA* 220 (1):53-58; 2002.
2. Ward, M.P. *et al.*: Evaluation of environmental risk factors for leptospirosis in dogs: 36 cases (1997–2002). *JAVMA* 225 (1):72-77; 2004.
3. Ward, M.P. *et al.*: Serovar-specific prevalence and risk factors for leptospirosis among dogs: 90 cases (1997–2002). *JAVMA* 224 (12):1958-1963; 2004.

two- or three-year intervals to reconsider this approach. Until he listened to a presentation by Larry Glickman, VMD, DPH, several years ago, Dr. Keem had stopped vaccinating annually because another doctor had warned him about the numerous allergic reactions associated with the old leptospirosis bacterin.

“I work at three practices, and after Dr. Glickman’s presentation, we [the doctors] decided to begin vaccinating for leptospirosis again on an annual or semiannual basis,” says Dr. Keem. “But this time we used a new vaccine from Fort Dodge that contains four serovars and features low antigenicity.” The veterinarians have administered this vaccine to most of their canine patients for the past few years, and they’ve seen no increase in allergic post-vaccination reactions.

Tragic cases like the one at Cheektowaga Veterinary Hospital can be avoided. Vaccinate your canine patients every six months or every year, depending on their outdoor exposure.

## Take Note

### Subunit technology provides added measure of safety to *Leptospira* vaccines

Safety and efficacy are important considerations to Fort Dodge Animal Health when manufacturing their *Leptospira* vaccines. That’s why Fort Dodge uses its exclusive

subunit technology—an innovative method to produce *Leptospira* vaccines.

“Subunit technology involves separating the surface immunogens of *Leptospira* from extraneous intracellular debris,” says Dr. Mike LaRosh, Fort Dodge’s director of companion animal professional services. “The final result is a purified vaccine containing the majority of surface *Leptospira* immunogens necessary for protection.” This differs from other canine vaccines that rely on whole-cell products, which contain the entire

*Leptospira* organism, he explains.

In fact, in a study of more than 144,000 doses given to dogs, the reaction rate for Fort Dodge’s *Leptospira* vaccines is just 0.27 percent for all breeds.

LeptoVax™ 4, the newest member of the Duramune line of *Leptospira* vaccines, is a standalone vaccine that includes four prevalent *Leptospira* serovars: *grippotyphosa*, *pomona*, *icterohaemorrhagiae*, and *canicola*. If preferred, veterinarians can continue to offer leptospirosis protection using the Duramune line of combination vaccines.

# Vaccinations encourage wellness exams

## USE VACCINATION PROTOCOLS TO ENCOURAGE TWICE-A-YEAR EXAMS IN YOUR PRACTICE.

Ask most pet owners why they visit the veterinarian once every year, and they'll probably say, "to get my pet's shots." Annual vaccination schedules have offered veterinarians a great opportunity to see clients annually to recognize and treat disease early. Unfortunately, many clients today think that vaccinations are the most important reason for routine veterinary visits. That's why it's important to review the vaccinations you offer to see how they might fit in a twice-a-year wellness program. Consider these facts:

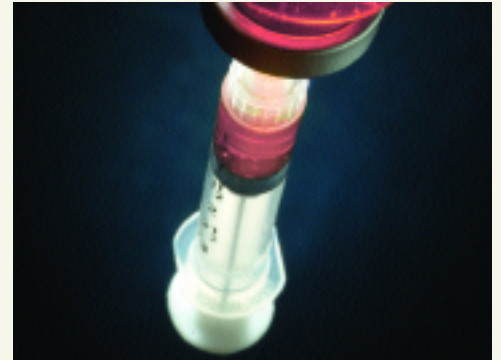
1. The 2003 AAHA Canine Vaccine Guidelines and the 2000 American Association of Feline Practitioners and Academy of Feline Medicine Advisory Panel on Feline Vaccines Report both recommend administering certain vaccines no more frequently than every three years. The guidelines also sup-

port administering other vaccines annually or more often for pets at increased risk for certain diseases. The important point: Many practitioners are re-examining their vaccination schedules in light of these recommendations. You can use changing vaccination protocols to your advantage if you 1) analyze the vaccinations you recommend and stagger them between visits, 2) develop a twice-a-year wellness program, and 3) educate clients about all the important services you offer during twice-a-year exams.

2. The 2002 AAHA Compliance Study found that overall compliance for canine and feline core vaccines in pets that visited a veterinarian during the preceding 12 months was 87 percent. However, there were still 12.4 million dogs and cats that weren't protected against core diseases (distemper, hepatitis, and parvovirus infection in dogs and feline viral rhinotracheitis, calicivirus infection, and panleukopenia in cats), even though they visited a veterinarian during the previous 12 months. These figures didn't include some 10.6 million dogs and 22.7 million cats in the United States that weren't seen by a veterinarian at all in that time. Obviously, there's room to improve compliance in all areas—including vaccinations—regardless of the vaccination schedule you follow.

To encourage client compliance, first establish a uniform healthcare protocol.

*A 2002 AAHA study showed 12.4 million dogs and cats weren't protected against core diseases.*



Stress the importance of all aspects of a comprehensive, individualized healthcare programs, including:

- dental care
- nutrition
- behavior counseling
- diagnostic testing
- parasite control
- zoonotic disease prevention
- vaccination and its potential benefits and risks, as well as the pet's lifestyle (contact with other animals) and exposure risks
- regional incidence and risk factors for various infectious diseases.

It's difficult to provide all this information in a 15- to 30-minute appointment. And even if you fit it all in, clients will likely feel overwhelmed and stop listening. A better solution is to plan twice-a-year wellness visits to thoroughly assess each pet and offer and implement your recommendations.

Explain to clients that during a six-month period, a pet's health status can change, as can its environment, lifestyle, and travel habits. All of these factors warrant reassessing healthcare recommendations for vaccinations, diagnostic testing, parasite control, and so on. You'll also review the client's compliance with recommendations you made at the last appointment, including internal and external parasite prevention and control, dental care, and so on.

Vaccinations provide a great tool to reinforce the importance of twice-a-year wellness exams. So review your vaccination protocols today and see how they might fit into a twice-a-year wellness program.



### Join today!

Join the Pet Wellness Month campaign to educate pet owners

about the importance of twice-a-year wellness exams. Veterinarians can order a free In-Clinic Wellness Education Kit by sending an e-mail to [petwellness@lpm-adv.com](mailto:petwellness@lpm-adv.com).

## A race for survival

### FORT DODGE TEAMS UP WITH THE CHEETAH CONSERVATION FUND TO HELP SAVE CHEETAHS FROM EXTINCTION.

The fastest land animal and one of the oldest cats on Earth, the cheetah can reach speeds in excess of 70 mph in as little as four strides. That's why it's devastating to learn that cheetahs are sprinting toward extinction. With the help of Fort Dodge Animal Health, the Cheetah Conservation Fund (CCF) is racing against time to protect the species.

Founded by Laurie Marker, PhD, in 1990, CCF is on the core management team of the large cat specialist group of the World Conservation Union, the world's largest scientific organization for nature conservation. With the help of EarthWatch volunteers, the CCF's conservation efforts encompass all aspects of the cheetah's struggle, including losing its habitat and falling prey to commercial farming. About 95 percent of cheetahs live on farmland in Namibia, Africa, where farmers, who fear that cheetahs threaten livestock, may trap or kill the cats.

CCF's goal is to develop livestock management and nonlethal predator control practices to resolve the cheetah and farmer conflict. For example, the organization created an Anatolian shepherd guard dog pro-

gram, which places eight-week-old puppies with farmers' herds to protect them against cheetahs, baboons, jackals, caracals, and leopards. Trained to bark and stand in an attack stance if threatened, an Anatolian shepherd's large size and bark frighten away most predators. CCF has placed more than 200 puppies on Namibian farms.

CCF also conducts conservation education programs for villagers, ranchers, and school children in Namibia to teach them about the cheetah and its plight. "If people can understand cheetahs better, they might be willing to try other solutions to protect the cheetahs' livelihood," Dr. Marker says.

#### A helping hand

To support the group's data collection and treatment efforts, Fort Dodge has formed a partnership with CCF. Every year, Fort Dodge donates anesthetics. CCF's professional staff members use these products intensively in their work. CCF performs routine health exams and blood screenings, offers treatment for emergencies and illness, collects sperm for cryopreservation studies, and gathers tissue samples—such as gastric biopsies to study gastritis, a common disease among cheetahs.

Dr. Marker says CCF has anesthetized animals in some pretty remarkable circumstances. "Many times we've had to pick up cheetahs captured by farmers," she says. "Sometimes farmers release the cheetahs into enclosures that are too large, and we can't coax them into boxes for transportation. In these cases, we dart the cheetah so we can move it into the box."

Dr. Marker says Fort Dodge's sponsorship has made an enormous difference in CCF's success. "Without Fort Dodge, CCF would not be able to collect the crucial biomedical samples we need for cheetah research," Dr. Marker says.



#### A lifetime of struggle

The cheetah, *Acinonyx jubatus*, could once be found roaming throughout Africa and Asia. In the late 19th century, the cheetah population was around 100,000. Today, cheetahs are only sparsely located in sub-Saharan Africa and Iran. Listed under the United States Endangered Species Act, it's estimated that only 9,000 to 12,500 cheetahs remain, with the largest population residing in Namibia, Africa.

A drastic climate change 10,000 years ago nearly wiped out the cheetah population. Only the *jubatus* species survived. The drastic reduction forced close relatives to breed and, as a result, cheetahs lack genetic diversity, which has led to a high cub mortality rate, poor sperm quality, vulnerability to disease, and poor adaptability to environmental or ecological changes. Even if cheetah cubs do survive into adulthood, it takes a female cheetah almost two years to raise one litter, which means she will have only a few litters in her lifetime.

To learn more, visit the Cheetah Conservation Fund at [www.cheetah.org](http://www.cheetah.org).



Above: CCF Founder Laurie Marker, PhD, with Chewbaaka, a leash-trained cheetah.

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