FOR: Bill Brown  
Operations Group Chair  

FROM: Greg Waymon  
Medical Working Group  

SUBJECT: Canine Leptospirosis Vaccination for US&R Search Canines  
Recommendation MED 2013-01  

DATE: 8/7/2013  

ISSUE STATEMENT  

▪ There is no system awareness regarding the increased need for Leptospirosis vaccination in search canines  

GENERAL BACKGROUND  

▪ Currently, system canines are required to have core vaccines as published by the American Animal Hospital Association: Canine Parvovirus, Canine Distemper Virus, Canine Adenovirus-2, and Rabies 1-year/3-year. There is a list of highly recommended non-core vaccines as published by the American Animal Hospital: Parainfluenza Virus, Bordetella bronchiseptica, Borrelia burgdorferi (Lyme), and Leptospirosis vaccine.  

▪ The zoonotic nature (transmissible to humans) of this disease increases the risk level for human Task Force members should a system canine contract the disease and shed the organism in urine  

▪ Late summer to fall is the highest reported incidence of Leptospirosis, coinciding with the higher incidence of natural weather storms and potentially increases in US&R deployments.  

▪ In areas of flooding, standing pools of water, the risk is higher. System K9s may be deployed from an area where Leptospirosis is rare to an area that has higher incidence  

▪ Dogs in suburban or rural environments have been shown to be at increased risk of leptospirosis, presumably because of greater likelihood of contact with wildlife habitats. Wildlife within urban areas and domestic pets shedding the disease allow for occurrence within city areas as well.
No consistent or distinct geographic pattern for positive test results was observed in one study but seropositivity was greater in the mid-west, south-central, and northwest regions of the United States. One study had a cluster of reported cases during the 1990's located in the Midwest. Another study out of Minnesota isolated the organism from 100% of streams, 65% of lakes, 28% of springs, 5% of bog lakes, and 0% of marsh tested.

Potential vaccine reactions are similar to other vaccines, including vomiting, diarrhea, lethargy, local irritation, swelling, angioedema, and anaphylaxis. Incidence is similar to other vaccines (low) with the exception of a high incidence of acute anaphylactic reactions reported in toy breeds, puppies <12 weeks old. Methods for decreasing reactions include separating this vaccine delivery to the canine from the other vaccines and pre-treating with diphenhydramine.

This vaccine protects against the bacterial organism *Leptospira interrogans*. There are over 200 recognized serovars (subtypes) of the leptospirosis organism worldwide. The vaccine may include serovars *canicola*, *icterohaemorrhagiae*, and also available with *grippotyphosa* and *pomona*. Different types are prevalent in different areas of the country. Some serovars detected by testing are not currently included in a vaccination form. This organism is often passed to dogs through contaminated water or soil. Carriers include rodents, skinks, raccoons, other dogs and people. Leptospirosis causes potentially fatal liver and/or kidney disease.

Efficacy - Protection for some of the serovars is reported to be 1 year; others may be only 6-8 months. High risk animals are recommended to be vaccinated twice per year.

Conclusions and clinical relevance in another study state the prevalence of leptospirosis among dogs examined at veterinary teaching hospitals in the United States and Canada has increased significantly since 1983. Male dogs of working and herding breeds were at greater risk.

Leptospirosis has recently been recognized as a re-emerging infectious disease among animals and humans and has the potential to become even more prevalent with anticipated global warming. The prevention of this potentially serious and fatal disease in both canines and human task force members is the driving force behind recommendation for the Leptospirosis vaccination.

**RECOMMENDATION**

The Medical Work Group and Canine Subcommittee Work Group **highly recommend** annual Leptospirosis vaccination for certified system canines.

**ATTACHMENTS**

Appendix A - Published references

**PROGRAM IMPACTS / DOCUMENTATION CHANGES**
Ensures that the health status of our canine resource is monitored and maintained.

- Decreases the potential for search canines to contract the Leptospirosis disease
- Decreases the potential transmission of Leptospirosis to humans from a search canine source

**FINANCIAL IMPACT TO TASK FORCES**

- $15/yr per canine

**ALLIED WORK GROUP COORDINATION REQUIRED**

- Medical Work Group
- Canine Subcommittee via Search Work Group

**TIMETABLE FOR IMPLEMENTATION**

- Immediately

**References**

1. Moore GE, Guptill LF, et al; Canine Leptospirosis, United States, 2002-2004; [http://www.cdc.gov/ncidod/EID/vol12no03/05-0809.htm#stu](http://www.cdc.gov/ncidod/EID/vol12no03/05-0809.htm#stu)
Appendix A

Annual Medical Recommendations
for the
Urban Search and Rescue Canine

1. Complete Physical Examination - Annual
   - Based on the American Animal Hospital Association (AAHA) recommendations, this includes a patient's history, temperature, attitude, hydration, mucous membrane color, capillary refill time, eyes (including pupils and retinas), ears, nose, mouth/throat, peripheral lymph nodes, heart, pulses, lungs/respiration, abdomen, urogenital system, skin, perineal and rectal exam, musculoskeletal system, and neurologic system.

2. Blood Work - Annual
   - CBC, biochemical profile, heartworm test

3. Additional Testing – Annual
   - Urinalysis, fecal exam

4. Preventive Medications – Annual
   - Heartworm Preventative
   - Flea and Tick Control

5. Vaccinations – Guidelines as per AAHA
   - Core Vaccines - Required
     - Canine Parvovirus (CPV-2, MLV)
     - Canine Distemper Virus (CDV, MLV) or recombinant rCanine Distemper Virus (rCDV)
     - Canine Adenovirus-2 (CAV-2, MLV parenteral)
     - Rabies 1-year (killed) or 3-year (killed) as per state legislation

6. Highly Recommended Based on Outdoor Lifestyle
   - Parainfluenza Virus (CPIV, MLV-parenteral)
   - Bordetella bronchiseptica (killed bacterin or cell wall antigen extract, parenteral)
   - Borrelia burgdorferi (Lyme borreliosis killed whole bacterin or rLyme borreliosis[OspA])
   - Leptospirosis (killed bacterin) - serovar specific for endemic types:
     - Leptospira interrogans with canicola and icterohaemorrhagiae
     - Also available with serovars grippotyphosa and Pomona

EXAM INCLUDES ANY FURTHER TESTING BASED ON ANY ABNORMALITIES FOUND IN THE PHYSICAL EXAMINATION
# Vaccine Schedules as Recommended by AAHA

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Initial Puppy Vaccination (&lt;16 weeks old)</th>
<th>Initial Adult Vaccination (&gt;16 weeks old)</th>
<th>Revaccination Booster</th>
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<tr>
<td>Canine Parvovirus (CPV-2, MLV)</td>
<td>Give at 6-8 weeks old then every 3-4 weeks until 12-14 weeks old</td>
<td>2 doses, 3-4 weeks apart</td>
<td>Booster at 1 year then every 3 years unless label says otherwise</td>
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<td>Canine Distemper Virus (CDV, MLV) or rCanine Distemper Virus (rCDV)</td>
<td>Give at 6-8 weeks old then every 3-4 weeks until 12-14 weeks old</td>
<td>2 doses, 3-4 weeks apart</td>
<td>Booster at 1 year then every 3 yrs unless label says otherwise</td>
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<td>Canine Adenovirus-2 (CAV-2, MLV parenteral)</td>
<td>Give at 6-8 weeks old then every 3-4 weeks until 12-14 weeks old</td>
<td>2 doses, 3-4 weeks apart</td>
<td>Booster at 1 year then every 3 yrs unless label says otherwise</td>
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<td>Rabies 3-year (killed)</td>
<td>Give one dose as early as 3 months</td>
<td>Administer as a single dose</td>
<td>2nd rabies 1 year after initial dose, then every 3 yrs per the area law</td>
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<tr>
<td>Parainfluenza Virus (CPIV, MLV-parenteral)</td>
<td>Give at 6-8 weeks old then every 3-4 weeks until 12-14 weeks old</td>
<td>Administer as a single dose</td>
<td>Booster at 1 year then every 3 yrs unless label says otherwise</td>
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<td>Bordetella bronchiseptica (killed bacterin) parenteral</td>
<td>Give one dose at 6-8 weeks old, one dose at 10-12 weeks old</td>
<td>Two doses, 2-4 weeks apart</td>
<td>Annual booster or more often in high-risk animals</td>
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<td>Bordetella bronchiseptica (cell wall antigen) Parenteral</td>
<td>Give one dose at 8 weeks old and one dose at 12 weeks old</td>
<td>Two doses, 4 weeks apart</td>
<td>Annual booster or up to every 6 months in high-risk environments</td>
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<td>Borrelia burgdorferi (Lyme borreliosis killed whole bacterin or rLyme borreliosis [OspA])</td>
<td>Initial dose at 9 or 12 weeks old (per manufacturer) then 2nd dose 2-4 weeks later</td>
<td>Two doses, 2-4 weeks apart</td>
<td>Annual booster; revaccine prior to start of region tick season</td>
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<td>Leptospirosis (killed bacterin) serovar specific for endemic types</td>
<td>Give one dose at 12 weeks and another at 14-16 weeks. For best response do not give to dogs less than 12 weeks old</td>
<td>Two doses, 2-4 weeks apart</td>
<td>Annual booster, not for toy breeds restricted to areas of high risk</td>
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# US&R Operations Group Vote

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