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9 **FOR:** Bill Brown
10 Operations Group Chair
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12 **FROM:** Greg Waymon
13 Medical Working Group
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15 **SUBJECT:** Canine Leptospirosis Vaccination for US&R Search Canines
16 Recommendation MED 2013-01
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18 **DATE:** 8/7/2013
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22 **ISSUE STATEMENT**

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24 ▪ There is no system awareness regarding the increased need for Leptospirosis
25 vaccination in search canines
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28 **GENERAL BACKGROUND**

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30 ▪ Currently, system canines are required to have core vaccines as published by the
31 American Animal Hospital Association: Canine Parvovirus, Canine Distemper Virus,
32 Canine Adenovirus-2, and Rabies 1-year/3-year. There is a list of highly recommended
33 non-core vaccines as published by the American Animal Hospital: Parainfluenza Virus,
34 Bordetella bronchiseptica, Borrelia burgdorferi (Lyme), and Leptospirosis vaccine.
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- 36 ▪ The zoonotic nature (transmissible to humans) of this disease increases the risk level
37 for human Task Force members should a system canine contract the disease and shed
38 the organism in urine
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- 40 ▪ Late summer to fall is the highest reported incidence of Leptospirosis, coinciding with
41 the higher incidence of natural weather storms and potentially increases in US&R
42 deployments.
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- 44 ▪ In areas of flooding, standing pools of water, the risk is higher. System K9s may be
45 deployed from an area where Leptospirosis is rare to an area that has higher incidence
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- 47 ▪ Dogs in suburban or rural environments have been shown to be at increased risk of
48 leptospirosis, presumably because of greater likelihood of contact with wildlife habitats¹.
49 Wildlife within urban areas and domestic pets shedding the disease allow for
50 occurrence within city areas as well.
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- 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 States¹. One study had a cluster of reported cases during the 1990's located in the Midwest⁴. 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 tested⁵.
 - 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 worldwide¹. The vaccine may include serovars *canicola*, *ictrtohaemorrhagiae*, 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 form¹. This organism is often passed to dogs through contaminated water or soil. Carriers include rodents, skinks, raccoons, other dogs and people². 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^{2,3}.
 - 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 risk⁶.
 - 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.(<http://emedicine.medscape.com/article/220563-overview>)
 - 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

91 **RECOMMENDATION**

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

96 **ATTACHMENTS**

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- Appendix A - Published references

100 **PROGRAM IMPACTS / DOCUMENTATION CHANGES**

- 102 ▪ Ensures that the health status of our canine resource is monitored and maintained.
- 103 ▪ Decreases the potential for search canines to contract the Leptospirosis disease
- 104 ▪ Decreases the potential transmission of Leptospirosis to humans from a search canine
- 105 source

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108 **FINANCIAL IMPACT TO TASK FORCES**

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- 110 ▪ \$15/yr per canine

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113 **ALLIED WORK GROUP COORDINATION REQUIRED**

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- 115 ▪ Medical Work Group
- 116 ▪ Canine Subcommittee via Search Work Group

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119 **TIMETABLE FOR IMPLEMENTATION**

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- 121 ▪ Immediately
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126 **References**

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128 <http://www.cdc.gov/ncidod/EID/vol12no03/05-0809.htm#stu>
- 129 2. *Leptospirosis in Dogs*; http://pet-diseases.suite101.com/article.cfm/leptospirosis_in_dogs
- 130 3. 2006 AAHA Canine Vaccination Guidelines for the General Veterinary Practice, Revised;
131 <http://www.aahanet.org/PublicDocuments/VaccineGuidelines06Revised.pdf>
- 132 4. Ward, MP: *Clustering of reported cases of leptospirosis among dogs in the United States and*
133 *Canada*; Preventative Veterinary Medicine, Vol 56, Issue3, 2002, p. 215-266.
- 134 5. Henry, RA, Johnson, RC; *Distribution of the Genus Leptospira in Soil and Water*; Allied and
135 Environmental Microbiology, March 1978, p. 492-499.
- 136 6. J Am Vet Med Assoc. January 2002;220(1):53-8. Michael P Ward¹; Lawrence T Glickman;
137 Lynn E Guptill. Prevalence of and risk factors for leptospirosis among dogs in the United States
138 and Canada: 677 cases (1970-1998)

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Appendix A

Annual Medical Recommendations for the Urban Search and Rescue Canine

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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

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

US&R OPERATIONS GROUP VOTE

VOTE TAKING DATE(s)	June 25, 2008		
ISSUE	Operations Group Recommendation # K-9 08-01		
Work Group Chair Vote	Y/N	Work Group Chair Vote	Y/N
C&GS	Y	Training	Y
Communications	Y	WMD	Y
IST	Y	Technical S/G	
Legal Issues	Y	Canine S/G	
Logistics	Y	TFL Rep	
Medical	Y	East TFL Rep	Y
Public Affairs	Y	Central TFL Rep	Y
Rescue	Y	West TFL Rep	
Search	Y	Operations	Y
Grants	Y		