

VACCINES and VACCINATION: Change is in the WIND!

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In March 2006, the American Animal Hospital Association (JAAHA) published the Canine Vaccine Guidelines on their website (www.aahanet.org). The American Association of Feline Practitioners has sponsored the 2006 Feline Vaccination Guidelines were published in November of 2006 (available at: www.aafponline.org). While publication of these updates continues to influence how individual practices select and use vaccine, a number of questions/controversies prevail. This presentation is designed to address some of the key issues expressed by practicing veterinarians in many countries.

THE VACCINATION GUIDELINES: BUILDING THE VACCINATION PROTOCOL

First, and most importantly, the currently published Canine and Feline Vaccination Guidelines are **not** *vaccination standards*. The Guidelines were *never* intended to be used as a set of enforceable statutes against which all practices would be held accountable. They're just Guidelines. But for the cat and the dog, the published Guidelines were developed by separate Task Forces that included academicians, practitioners, legal advisors, industry, and representative from organized veterinary medicine, including the AVMA's Council on Biologics and Therapeutics. Secondly, the Canine and Feline Vaccination Guidelines **do not** *represent a vaccination protocol*. In fact, attempting to use the Guidelines as *the protocol* in the individual practice will be difficult to impossible. Instead, they're intended to serve as a tool to be used by clinicians in developing a rational vaccination protocol appropriate for the individual patient. **Remember...even the conventional phrase "Annual Booster Recommended" that has driven justification for vaccinating dogs and cats annually for several years was initially not based on scientific study.** Yet, some vaccines are still known to protect for several years, while others do *not* even protect for 12 months. Yet, the "Annual Booster" recommendation persists. The Canine and Feline Vaccination Guidelines, therefore, are to be used as an additional tool whereby logical decisions can be made regarding selection and use of individual types of vaccine.

Selection of Antigens

Canine and Feline Vaccination Guidelines center on what has been termed **CORE** and **NON-CORE** vaccines. **CORE** vaccines are those recommended for administration to every dog/cat presented to the practice. Recommendations for designating a particular vaccine as **CORE** are determined by: 1) severity of disease caused by the agent, 2) the risk of transmissibility the agent to susceptible animals, and 3) the potential for a particular infection to be zoonotic. **NON-CORE** vaccines, on the other hand, are vaccines recommended to clientele when a known or likely risk of exposure is anticipated or when the individual animal's lifestyle represents a reasonable risk of infection. Examples include feline leukemia virus (FeLV) and canine Lyme borreliosis (*Borrelia burgdorferi*) vaccine. *It is important to understand that*

Vaccination Guidelines merely suggest, they do not mandate, which vaccines should be CORE or NON-CORE.

Building the Protocol

The concept of CORE and NON-CORE vaccines is valid and has direct application in veterinary medicine today. Simply stated, this means separating the vaccines currently in your refrigerator into 2 separate groups: those that every dog and every cat will receive (CORE) and those that the attending clinician decides are necessary (or NOT necessary) based on health risk assessment of the individual patient (NON-CORE). While this may not sound especially important, there is value in assuring that every person in the hospital, technicians as well as veterinarians, is aware of the CORE vaccines and can consistently communicate the same vaccine message to clientele. The series of 4 tables that follow represent a list the CORE vaccines for the dog and cat *and* current recommendations for incorporating these vaccines into a rational vaccination protocol.

A. Recommendations for Administration of Canine Vaccines-CORE

CORE Canine Vaccines and Recommendations for Administration

(based on the 2006 Report of the AAHA Canine Vaccine Task Force)

CORE Vaccines	Primary Series (≤ 16 weeks)	Primary Series (> 16 weeks)	Booster Interval
Distemper Recombinant, or Modified-Live Parvovirus Modified-Live Adenovirus-2 Modified-Live (SQ injection)	Administer 1 dose at 6-8 weeks of age, then, Every 3 to 4 weeks until 15-16 weeks of age.	Administer 2 doses 3 to 4 weeks apart.	Administer 1 dose one year following completion of the initial series; then Every 3 years thereafter.
Rabies Killed-1 Year Killed-3-Year (SQ injection)	Administer 1 dose at 12 to 16 weeks of age.	Administer 1 dose	Administer 1 dose one year following administration of the first dose, then Every 3 years thereafter.

B. Recommendations for Administration of Feline Vaccines-CORE**CORE Feline Vaccines and Recommendations for Administration**

(based on the 2006 Report of the AAFP Feline Vaccine Advisory Group)

CORE Vaccines	Primary Series (≤ 16 weeks)	Kitten (≤ 16 weeks)	Primary Series (> 16 weeks)	Adult (> 16 weeks)	Booster Interval
<p>Parvovirus (Panleukopenia)</p> <p>Herpesvirus-1 and Calicivirus Modified-Live (non-adjuvanted), or Killed (adjuvanted)</p> <p>(SQ or intranasal administration)</p>	Administer 1 dose as early as 6 weeks of age, then	Every 3 to 4 weeks until 16 weeks of age	Administer 2 doses, 3 to 4 weeks apart	Administer 2 doses, 3 to 4 weeks apart	Administer 1 dose one year following completion of the initial series; then Every 3 years thereafter. <u>Note:</u> Annual booster of cats against FHV-1 and FCV may be recommended in cats housed in high risk environments.
<p>Rabies Recombinant (non-adjuvanted)</p> <p>- <u>RECOMMENDED-</u> (SQ injection)</p>	Administer 1 dose at 12 to 16 weeks of age.		Administer 1 dose	Administer 1 dose	Annually
<p>Rabies Killed-1 Year Killed-3-Year (adjuvanted)</p> <p>(SQ injection)</p>	Administer 1 dose at 12 to 16 weeks of age.		Administer 1 dose	Administer 1 dose	Administer 1 dose one year following administration of the first dose, then Every 3 years thereafter.

C. Types of Vaccines Licensed for use in Dogs and Duration of Immunity

VACCINE TYPE	CORE vs. NON-CORE	Minimum DURATION OF IMMUNITY
Distemper: Modified Live (parenteral) Recombinant Distemper: (parenteral) Distemper-Measles: Modified Live (parenteral)	Core Core NR	5+ to 7+ years 3 years + (not applicable)
Parvovirus: Modified Live (parenteral) Parvovirus: Killed (parenteral)	Core Non-Core	7 + years 1 year (studies are not available)
Coronavirus: Modified live (parenteral) Coronavirus: Killed (parenteral)	NR NR	Can not be determined Can not be determined
Canine Adenovirus-2: Modified Live (parenteral) Canine Adenovirus-2: Modified Live (topical) Canine Adenovirus-2: Killed (parenteral)	Core NR NR	7 + years unknown unknown
Canine Adenovirus-1: Modified Live & Killed (parenteral)	NR	unknown
Parainfluenza Virus: Modified Live (parenteral) Parainfluenza Virus: Modified Live (topical)	Non-Core Non-Core	3 + years 3 + years (preferred)
<i>Bordetella bronchiseptica</i> : Killed (parenteral) <i>Bordetella bronchiseptica</i> : Avirulent Live (topical) <i>Bordetella bronchiseptica</i> : Antigen Extract (parenteral)	Non-Core Non-Core Non-Core	< 12 months < 12 months <12 months
<i>Leptospira var. canicola</i> <i>Leptospira var. icterhemorrh.</i> <i>Leptospira var. pomona</i> <i>Leptospira var. grippotyphosa</i> } Killed (parenteral)	Non-Core Non-Core Non-Core Non-Core	Not definitively established (antibody titers persist approximately 3 months in dogs that seroconvert following an initial vaccination series)
Recombinant Lyme: (parenteral) Lyme: Killed (parenteral)	Non-Core Non-Core	1 year 1 year
<i>Giardia lamblia</i> : Killed (parenteral)	NR	Is not known to prevent infection
<i>Crotalus atrox</i> (The Rattlesnake Vaccine)	Not Evaluated	Licensed November 2004. License is "Conditional". Canine challenge data is not available.
<i>Porphyromonas</i> (periodontitis/gingivitis vaccine)	Not evaluated	Just licensed...October 2005. License is "Conditional". Canine challenge data is not available.
Rabies, 1-year: Killed (parenteral) Rabies, 3-year: Killed (parenteral)	Core Core	3 + years 3 + years

D. UPDATE: Types of Vaccines Licensed for use in Cats and Duration of Immunity

VACCINE TYPE	Adjuvanted vs. Non-adjuvanted	CORE vs. NON-CORE	<u>Minimum</u> DURATION OF IMMUNITY
Panleukopenia: Modified Live (parenteral)	Non-adjuvanted	Core	7 + years
Panleukopenia: Killed (parenteral)	Adjuvanted	Non-core	5 + years
Panleukopenia: Modified Live (topical)	Non-adjuvanted	Non-core	Not known to be more than 1 year...but likely
Herpesvirus-Calicivirus: Modified Live (parenteral)	Non-adjuvanted	Core	5 + years
Herpesvirus-Calicivirus: Killed (parenteral)	Adjuvanted	Non-core	5 + years
Herpesvirus-Calicivirus: Modified Live (topical)	Non-adjuvanted	Non-core	Not known...but expected to be at least 2 years
<i>Chlamydophila felis</i> : Killed	Adjuvanted	Non-core	1 year (maximum)
<i>Chlamydophila felis</i> : Live, avirulent	Non-adjuvanted	Non-core	
Recombinant Feline Leukemia (Needle-free administration)	Non-adjuvanted	Recommended for the first year of life; then, Non-Core thereafter	1 year
Feline Leukemia Virus: Killed	Adjuvanted	Recommended for the first year of life; then, Non-Core thereafter	1 year
Feline Immunodeficiency Virus: Killed	Adjuvanted	Non-core	1 year
Feline Infectious Peritonitis: Modified Live (topical)	Non-adjuvanted	NR	Does not confer protective immunity
<i>Bordetella bronchiseptica</i> : Modified Live	Non-adjuvanted	Non-core	1 year

(topical)			
<i>Giardia lamblia</i> : Killed (parenteral)	Adjuvanted	NR	Is not known to prevent infection
Virulent Systemic (VS) Feline Calicivirus	Adjuvanted	NR ¹	Not Known at this time.
Recombinant Rabies: (parenteral) Rabies, 1-year: Killed (parenteral) Rabies, 3-year: Killed (parenteral)	Non- adjuvanted Adjuvanted Adjuvanted	Core Core Core	1-year 3 years (must be administered annually) 3 years

NR = Not Recommended

NOTE: The VS Feline Calicivirus vaccine was not available in 2006 when the latest iteration of the feline vaccine guidelines was published. The author does not recommend routine use of this vaccine in cats.