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CANINE VACCINATION GUIDELINES

VACCINE INFORMATION

Consistent vaccination has long been an effective and safe method of disease prevention in both animals and human beings. Millions of animals in the United States are vaccinated each year with very minimal side effects, however no vaccine is one hundred percent safe and vaccination side effects are heavily dependent upon individual variability, vaccination and pathogen type. Not all vaccines are equal in safety and efficacy and vaccine formulation and technology can add significant risk for adverse reactions. At Arlington Animal Hospital we treat vaccination as a serious medical process, not to be taken lightly. Vaccination is one of the basic tenets of preventative care and should be performed in an informed manner. All patients are risk assessed based upon client and patient lifestyle to minimize over-vaccination and vaccine risk. We follow vaccine principles outlined by the largest bodies in veterinary medicine in the United States such as the American Animal Hospital Association (AAHA), American Association of Feline Practitioners (AAFP) and the American Veterinary Medical Association (AVMA) that have extensively studied vaccines, vaccine protocols, vaccine side-effects and vaccine studies dating back to 1998. Vaccination principles are not static but are dynamic and require risk assessment of the patient in regards to lifestyle and geographic location to provide an appropriate vaccination protocol that is both safe and effective.

CORE VACCINES: Vaccines all canines should receive

❖ DHP VACCINE	MINIMUM PROTOCOL: 3 DOSES GIVEN 3 WEEKS APART	MINIMUM AGE REQUIREMENT: 6 WEEKS
▪ Canine Distemper Virus (CDV), Canine Adenovirus-2 (CAV-2), Canine Parainfluenza		
❖ LEPTOSPIROSIS VACCINE	MINIMUM PROTOCOL: 2 DOSES GIVEN 3 WEEKS APART	MINIMUM AGE REQUIREMENT: 10 WEEKS
▪ Leptospira grippityphosa, pomona, canicola, icterohemorrhagica (HIGH RISK TO HUMANS)		
❖ BORDETELLA BRONCHISEPTICA	MINIMUM PROTOCOL: 2 DOSES GIVEN 3 WEEKS APART	MINIMUM AGE REQUIREMENT: 8 WEEKS
▪ Bordetella bronchiseptica		
❖ RABIES VACCINE	MINIMUM PROTOCOL: 1 DOSE	MINIMUM AGE REQUIREMENT: 12 WEEKS
▪ Rabies Virus (HIGH RISK TO HUMANS)		
❖ PARVOVIRUS VACCINE	MINIMUM PROTOCOL: 3 DOSES GIVEN 3 WEEKS APART	MINIMUM AGE REQUIREMENT: 6 WEEKS
▪ Recommended for all puppies, juvenile dogs and for adult dogs that have not received a Parvovirus series — high mortality rate.		
▪ Adult dogs can be silent carriers and transmit Parvovirus to puppies — vaccination of adult dogs in recommended in high risk areas.		
❖ CORONAVIRUS VACCINE	MINIMUM PROTOCOL: 2 DOSES GIVEN 3 WEEKS APART	MINIMUM AGE REQUIREMENT: 6 WEEKS
▪ Recommended for puppies, juvenile dogs and for adult dogs that have not received a Coronavirus series and that live in areas at risk for Parvoviral infection.		
▪ Concurrent infection of both Parvovirus and Coronavirus significantly increases mortality rate.		

NON-CORE VACCINES: Vaccines canines should receive based upon risk

❖ LYME DISEASE VACCINE	MINIMUM PROTOCOL: 2 DOSES GIVEN 3 WEEKS APART	MINIMUM AGE REQUIREMENT: 8 WEEKS
▪ Dogs that have access to land that contains wildlife, especially opossums, raccoons, mice, skunks, squirrels, feral cats, etc.		
▪ Dogs that travel frequently or spend significant time outdoors such as hunters, hikers, working dogs, training dogs, etc.		
▪ Dogs on property that have a high prevalence for fleas, ticks and/or mosquitoes.		
❖ RATTLESNAKE VACCINE	MINIMUM PROTOCOL: 2 DOSES GIVEN 3 WEEKS APART	MINIMUM AGE REQUIREMENT: 16 WEEKS
▪ Reduces toxic effects of the poisons of the Western and Eastern Diamondback Rattlesnake, Prairie Rattlesnake, Great Basin Rattlesnake, Northern and Southern Pacific Rattlesnakes, Sidewinder, Timber Rattlesnake, Massasauga and Copperhead.		
▪ Dogs that spend significant time outdoors, such as hunters, hikers, working dogs, training dogs, etc., that frequent rattlesnake endemic areas.		
❖ INFLUENZA VACCINE	MINIMUM PROTOCOL: 2 DOSES GIVEN 3 WEEKS APART	MINIMUM AGE REQUIREMENT: 8 WEEKS
▪ Dogs that travel frequently or are exposed to dogs at places such as dog shows, dog parks, grooming parlors, day care centers, etc.		

IMMUNIZATION PROTOCOLS

INITIAL IMMUNIZATION PROTOCOLS:

<u>PUPPY: < 20 WEEKS</u>	<u>JUVENILE: > 20 WEEKS</u>	<u>ADULT: > 1 YEAR</u>
8 WEEKS: DHP-PC	INITIAL: DHP-PC, BORDETELLA	INITIAL: DHP-PC, BORDETELLA
11 WEEKS: DHP-PC, BORDETELLA	3 WEEKS: DHP-PCL, BORDETELLA	3 WEEKS: DHP-PCL, BORDETELLA
14 WEEKS: DHP-PL, BORDETELLA, 1-2 NON-CORE	3 WEEKS: DHP-PL, RABIES, 1-2 NON-CORE	3 WEEKS: DHP-PL, RABIES, 1-2 NON-CORE
17 WEEKS: DHP-L, RABIES, 1-2 NON-CORE	3 WEEKS: 1-2 NON-CORE	3 WEEKS: 1-2 NON-CORE
20 WEEKS: 1-2 NON-CORE	3 WEEKS: 1-2 NON-CORE	3 WEEKS: 1-2 NON-CORE

BOOSTER VACCINATION WITH INITIAL IMMUNIZATION PROTOCOL COMPLETED:

CORE VACCINATION:	DHP — Every 1-3 years depending upon risk
	PARVOVIRUS - Annually
	LEPTOSPIROSIS — Annually
	BRONCHOSHIELD — Annually for low risk dogs, every 6 months of high risk dogs
	RABIES — 1 year after initial vaccination and every 3 years thereafter
NON-CORE VACCINATION:	Annually

- ❖ **The actual vaccination schedule depends upon the combination of core and non-core vaccines and may differ in intervals from the above protocols.**
- ❖ **The minimum vaccine interval is 2 weeks or vaccine interference may cause vaccine failure. Exceeding a vaccine interval of 5 weeks requires restarting the protocol.**
- ❖ **Final vaccination of the Distemper series must occur past 16 weeks of age to override maternal antibody interference, the most common cause for vaccine failure.**
- ❖ **Reducing vaccine volume will not reduce or prevent adverse reactions and will only make patients susceptible to disease. A minimum vaccine dose is required to stimulate lymphocyte response and induce protection against disease.**

PLEASE TURN OVER

DISEASE SUMMARIES

CANINE DISTEMPER

CAUSATIVE PATHOGEN(S): Canine Distemper Virus (CDV).

DISEASE SUMMARY: A highly contagious, systemic viral disease observed in dogs worldwide by CDV. CDV also infects wild canids such as foxes, wolves, coyotes and other wildlife such as raccoons, skunks and minks. Mortality rate and life-long neurological disorders are very high, especially in young dogs.

EXPOSURE: Respiration of infective airborne droplet secretions. Viral shedding may occur for months.

CLINICAL SIGNS SUMMARY: Fever, lethargy, anorexia, thick, serous nasal discharge, mucopurulent ocular discharge, vomiting, diarrhea, hyperkeratosis (thickening) of the footpads and nose, twitching, paresis (weakness) or paralysis, ataxia (poor balance), convulsions, hypersalivation, oral chewing fits, head pressing, pacing, permanent neurological disorders.

VACCINATION: Injectable vaccine administered subcutaneously.

ZOOLOGICAL POTENTIAL (SPREAD TO HUMANS): None.

CANINE HEPATITIS

CAUSATIVE PATHOGEN(S): Canine Adenovirus-1 (CAV-1).

DISEASE SUMMARY: A contagious, systemic viral disease in dogs observed worldwide caused by CAV-1. CAV-1 also infects wild canids such as foxes, wolves, coyotes and other wildlife such as bears and raccoons. Mortality rate is very high, especially in young dogs.

EXPOSURE: Ingestion of infective urine, feces and saliva. Viral shedding in urine occurs for over 6 months.

CLINICAL SIGNS SUMMARY: Fever, lethargy, anorexia, excessive thirst, mucopurulent ocular and nasal discharge, abdominal pain, vomiting, diarrhea, hyperemia (excessive redness) of the oral mucosa, enlarged tonsils, edema of the head, neck and body, hemophilia, convulsions, paresis (weakness), paralysis, corneal opacity (grayness) or "blue eye", hepatic cirrhosis.

VACCINATION: Injectable vaccine against CAV-2 administered subcutaneously. Vaccination against CAV-1 produces corneal opacity. Vaccination against CAV-2 results in excellent cross-protection against CAV-1 with little tendency to produce corneal opacity.

ZOOLOGICAL POTENTIAL (SPREAD TO HUMANS): None.

CANINE PARVOVIRUS

CAUSATIVE PATHOGEN(S): Canine Parvovirus (CPV), multiple strains.

DISEASE SUMMARY: A highly contagious, systemic viral disease observed in dogs worldwide caused by multiple strains of CPV. CPV is highly environmentally stable and can withstand wide pH and temperature ranges in addition to being resistant to most common disinfectants. CPV can survive for months to years in contaminated areas. Rotweilers, American Pitbull Terriers, Doberman Pinschers, Labrador Retrievers and Chihuahuas are at increased risk of infection. Mortality is reported to be 16% - 48%.

EXPOSURE: Ingestion of infective feces both directly and/or indirectly. Viral shedding in asymptomatic and recovered dogs can occur for up to 3 weeks.

CLINICAL SIGNS SUMMARY: Infected dogs can often be asymptomatic and clinical disease may be triggered by stress. Cardiopulmonary failure, pulmonary edema, cyanosis, collapse, vomiting, hemorrhagic diarrhea, lethargy, anorexia, fever.

VACCINATION: Injectable vaccine administered subcutaneously.

ZOOLOGICAL POTENTIAL (SPREAD TO HUMANS): None.

CANINE INFECTIOUS TRACHEOBRONCHITIS (KENNEL COUGH)

CAUSATIVE PATHOGEN(S): VIRUSES: Canine Parainfluenza, Canine Adenovirus-1, 2 (CAV-1 and CAV-2), Canine Distemper Virus (CDV), Canine Reovirus Type-1, 2, 3, Canine Herpesvirus. BACTERIA: Bordetella bronchiseptica, Mycoplasma (multiple species), Streptococcus zooepidemicus and other bacteria such as Pseudomonas (multiple species), Escherichia coli and Klebsiella pneumonia.

DISEASE SUMMARY: Highly contagious disease that is usually a mild, self-limiting disease but may progress to fatal bronchopneumonia or chronic bronchitis when left untreated. Illness spreads rapidly among dogs, especially those in close confinement. Clinically signs typically develop 5 – 10 day after exposure to affected dogs and can persist longer than 30 days.

EXPOSURE: Inhalation of droplets of oronasal fluid directly or from fluid contaminated surfaces. Dogs in close confinement such as boarding kennels, shows and grooming parlors are most susceptible and diseases rapidly and easily.

CLINICAL SIGNS SUMMARY: Dry persistent non-productive honking type cough that is most severe at night or in the early morning. Based upon the pathogen the cough can be productive. Coughs that progress to bronchopneumonia are productive, raspy, harsh coughs that can impair respiratory function causing respiratory distress, cyanosis and death.

VACCINATION: Intranasal vaccine against Bordetella bronchiseptica, Canine Parainfluenza and CAV-2 results in secretory immunity at entry sites of the mouth and nasal passages. Injectable vaccine against CAV-2 and Canine parainfluenza produce systemic immunity. Injectable vaccine against Bordetella bronchiseptica is also available.

ZOOLOGICAL POTENTIAL (SPREAD TO HUMANS): LOW RISK: Bordetella bronchiseptica can cause upper respiratory infections in humans. Immune suppressed humans may develop bacterial upper respiratory infections.

RABIES

CAUSATIVE PATHOGEN(S): Lyssavirus in the Rhabdovirus family.

DISEASE SUMMARY: An acute viral encephalomyelitis (brain) disease that can affect any mammal and is generally fatal once clinical signs appear. Rabies is found throughout the world however a few regions exist that a disease free due to successful elimination programs, strict entry and quarantine programs or their island status. In North America the rabies reservoir in most commonly found in skunks, bats, coyotes, foxes and raccoons. Most human cases of rabies have been caused by bat rabies. Cats are the most commonly reported rabid domestic animal in the United States and reported cases in domestic cats have outnumbered those in dogs every year since 1988.

EXPOSURE: Introduction of infected saliva into tissue either by a bite or introduction of infected saliva, salivary glands or brain tissue into fresh wounds or intact mucous membranes.

CLINICAL SIGNS SUMMARY: Clinical signs are divided into 3 phases – prodromal, excitative/furious and paralytic/dumb endstage. However phase division is variable and irregular. **PRODROMAL PHASE:** This phase lasts 1-3 days with only vague CNS signs which may intensify rapidly and some animals may die without significant clinical signs. **EXCITATIVE/FURIOUS PHASE:** This is the classic "mad dog" syndrome. Clinical signs include irritability, aggression, hypervigilance, extreme anxiety, loss of caution and fear, pica (eating of strange objects), attacking of animals/people, muscular incoordination, seizures, paralysis and death. **PARALYTIC/DUMB PHASE:** Paralysis of oral muscles, profuse salivation, inability to swallow, slack lower jaw, coma and death.

VACCINATION: Injectable vaccine administered subcutaneously, mandatory in most states but frequency of administration varies from state to state.

ZOOLOGICAL POTENTIAL (SPREAD TO HUMANS): HIGH RISK: Rabies causes fatal disease in humans.

CANINE BORRELIOSIS (LYME DISEASE)

CAUSATIVE PATHOGEN(S): Borrelia burgdorferi

DISEASE SUMMARY: A tick borne bacterial disease of domestic animals and humans. In the United States the main areas of greatest incidence include the Atlantic seaboard, upper Midwest and the Pacific coast. The main vector of borreliosis is a tick that becomes infected by feeding on infected reservoir hosts such as small mammals, especially rodents. Risk of disease is highest during the spring and fall when tick nymphs and adults actively seek hosts.

EXPOSURE: The vector or borreliosis is the Ixodes pacificus tick on the west coast and the Ixodes scapularis elsewhere in the United States.

CLINICAL SIGNS SUMMARY: Painful limb and joint disease resulting in lameness, fever, anorexia, lethargy, lymphadenopathy (enlarged lymph nodes). Renal (kidney) failure can result in urine protein loss and edema of the legs. Cardiac abnormalities include bradycardiac (increased heart rate) although this is rare. Neurological abnormalities include facial paralysis and seizures.

VACCINATION: Injectable vaccine administered subcutaneously.

ZOOLOGICAL POTENTIAL (SPREAD TO HUMANS): LOW RISK: Although the disease is tick borne the incidence of disease in animals and humans are similar in a geographic region. However the risk in dogs in particular is higher in the same geographic region.

CANINE LEPTOSPIROSIS

CAUSATIVE PATHOGEN(S): Leptospira canicola, icterohaemorrhagiae, grippityphosa and pomona.

DISEASE SUMMARY: A worldwide disease of domestic animals and wildlife caused by multiple serovars of the spirochete bacteria Leptospira, of which there are greater than 17 species and 200 serovars. Although the disease is the same in multiple animals, some animals are more resistant to infection than others. Infection can be asymptomatic or clinical and carriers can shed the organisms in large numbers for months to years. Leptospira are waterborne and can survive on surface waters such as swamps, streams, rivers, mud and moist soil.

EXPOSURE: Leptospira often localizes in the urine and reproductive organs and are shed in the urine. Infection is acquired by contact of the skin, mucous membranes, conjunctiva or vaginal mucosa with urine, contaminated feed and water. Transmission can also occur venereally or by ingestion of infected tissue.

CLINICAL SIGNS SUMMARY: Fever, icterus, renal (kidney) failure, infertility, abortion, stillbirth, endometritis and death.

VACCINATION: Injectable vaccine administered subcutaneously.

ZOOLOGICAL POTENTIAL (SPREAD TO HUMANS): HIGH RISK: Leptospirosis is easily and rapidly transmitted to humans from animals.

CANINE INFLUENZA

CAUSATIVE PATHOGEN(S): Canine H3N8 Influenza Virus

DISEASE SUMMARY: Originally an equine influenza virus, the virus has now mutated to infect and spread amongst dogs. The equine influenza virus has been known to exist for over 40 years but recently emerged into dogs in 2004. In 2005 the H3N8 influenza virus was identified as an emerging pathogen in the United States. Dogs are naive to the virus and have no natural immunity making them highly susceptible to the virus.

EXPOSURE: Inhalation of droplets of oronasal fluid or fluid contaminated surfaces. Dogs in close confinement such as boarding kennels, shows and grooming parlors are most susceptible and disease spreads rapidly and easily.

CLINICAL SIGNS SUMMARY: Influenza in the early stages appears identical to Canine Infectious Tracheobronchitis or kennel cough. Early clinical signs include severe cough, very thick yellow nasal discharge and fever. Progression of the disease leads to bronchitis and pneumonia. Death associated with pneumonia can be as high as 40% despite treatment.

VACCINATION: Injectable vaccine administered subcutaneously.

ZOOLOGICAL POTENTIAL (SPREAD TO HUMANS): LOW RISK: Mutation of the virus to infect people is possible but there have been no proven cases.

CORONAVIRUS

CAUSATIVE PATHOGEN(S): Canine Coronavirus (CCV)

DISEASE SUMMARY: CCV next most common cause of viral diarrhea in puppies secondary to Parvovirus but unlike Parvovirus is not associated with high death rates. However concurrent CCV and Parvoviral infection has a significant higher death rate in puppies compared to Parvovirus alone. CCV is commonly found in asymptomatic adult dogs who often have antibody titers to CCV indicating prior exposure. Most adult dogs do not require vaccination for CCV as they are naturally immune or may only suffer a mild, often missed case of diarrhea.

EXPOSURE: Ingestion of infective feces both directly and/or indirectly. Viral shedding in asymptomatic and recovered dogs can occur for up to 3 weeks.

CLINICAL SIGNS SUMMARY: Watery diarrhea, occasionally bloody and/or with mucus, identically similar to Parvovirus. Vomiting is absent with CCV infection.

VACCINATION: Injectable vaccine administered subcutaneously.

ZOOLOGICAL POTENTIAL (SPREAD TO HUMANS): None.