

## **Recommendations to mitigate the transmission of canine infectious diseases in canine group settings**

### **General recommendations**

- Every canine group setting should have an attending or consulting veterinarian available who is familiar with the environment and purpose of the setting (category IB). This individual, on- or off-site, should provide assistance in developing and implementing site-specific protocols for infectious disease prevention (category IB).
- Training for all involved staff on the risks of and methods for prevention of infectious diseases within the group setting should be required and documented. Staff knowledge on this topic should be assessed periodically (category IB).
- Only dogs without clinical evidence of infectious disease should participate in group settings (category IA). Dogs that are suspected to have an infectious disease, or with signs of infectious disease not verified by a veterinarian to be due to a noninfectious cause, should be excluded from the setting (category IA). As applicable, dogs suspected to have an infectious disease should be immediately reported to the setting veterinarian or responsible official (category IA).
- Valid health certificates for dogs traveling to a group setting from out of the state, province, or country should be required for entry into that setting (category IC).
- Disease prevention and control protocols should be developed on the basis of a risk assessment for the setting. This assessment should take into account the location and nature of the setting (eg, indoor or outdoor, amount of expected dog-to-dog and

person-to-dog contact, event duration, population turnover, and ages of dogs involved; category IB).

- A complete infection prevention and control plan should include strategies aimed at the individual dog, the population of dogs in that setting, and the local environment (eg, exposure to pathogen-infected vectors or wildlife; category IB).
- Requirements for involvement in group settings (including pertinent jurisdictional regulations and the rationale for such requirements) should be clearly articulated to human participants prior to their arrival, and these requirements should be uniformly enforced (category II).

## **Vaccination**

- Dogs should be up-to-date on vaccinations considered core for shelter populations (ie, vaccines against CDV, CAV-2, CPV-2, *Bordetella bronchiseptica*, CPiV, and rabies virus; category IA).
- If the vaccination status of the dog is unknown or not up-to-date, at a minimum a single dose should be administered prior to entry, with an adequate time provided for the development of immunity (category IA).
- All dogs should be vaccinated against rabies (and certificates required) in accordance with the jurisdictional laws that apply where the dog lives and the group setting is located (category IC).
- When the benefits of involving young dogs are high (eg, well-organized puppy socialization or obedience classes), other preventive measures should be taken, such

as appropriate environmental cleaning and disinfection and strict exclusion of dogs with signs of respiratory or gastrointestinal illness (category IB).

- Noncore vaccines (eg, against *Leptospira* spp, *Borrelia burgdorferi*, or CIV) should be considered on the basis of the epidemiologic characteristics of those pathogens specific to the setting location when expected activities pose an elevated risk of transmission (category II).
- The vaccination status of all dogs should be individually verified on the basis of a reliable source (eg, veterinary medical record; category IB).
- Because vaccination does not guarantee protection, preventive measures in addition to vaccination must also be considered for these diseases (category IA).

### **Insect and wildlife control**

- Group setting coordinators should actively try to limit insects, rodents, and other wildlife from accessing or inhabiting the facility or dog housing areas (category IB).
- When feasible, measures should be taken to exclude wildlife from dog areas (category IB).
- Feces, unnecessary organic debris, and garbage (including uneaten human and dog food) should be immediately removed to assist in controlling insects, rodents, and other wildlife (category IB).
- A safe and effective insect and wildlife control program should be used in and around buildings, parks, and kennels (category IB).

## **Vector control and vector-borne disease prevention**

- Effective ectoparasite and related pathogen (eg, heartworm) preventive products for topical or oral administration should be used prior to and during group event involvement on the basis of season, weather, geography, and the type of group setting (eg, indoor vs outdoor; category IA).
- Integrated environmental vector control measures should be taken on the basis of the risk for ectoparasite-borne disease (category IB).
- Dogs entering group settings should be monitored for the presence of ectoparasites, particularly fleas and ticks (category II). If fleas or ticks are found, dogs should be treated with a rapid-kill insecticide product and excluded from entry (or placed in isolation) until confirmed to be free of the ectoparasite (category IB). Individual ticks can be manually removed, but this must be done by someone who is familiar with proper tick removal technique (category II). Steps should be taken to determine the source of the ectoparasite and, when possible, use individual dog strategies, environmental strategies, or both to mitigate ectoparasite risk (category II).
- Surfaces that promote flea infestation, such as carpet and upholstery, should be kept to a minimum in the group setting environment (category II).
- In areas where American trypanosomiasis is a concern and the disease-causing triatomine vector is known to be present, insecticides should be used to reduce vector prevalence (category IB). In areas where triatomine bugs are endemic, dogs should be housed indoors whenever possible to decrease exposure to the vector (category II).

- Whenever possible, outdoor events to be held in locations with a high prevalence of tick-borne disease should be scheduled when the risk of tick exposure is lowest (eg, November to March in some regions; category IB).
- Where and when the risk of exposure to potentially infected ticks is high, outdoor group events should be held away from wooded areas and tall grass (category IB).
- Grass in outdoor areas with which dogs have contact should be kept short and free of litter and brush (category IB).
- To minimize mosquito exposure, canine group settings should be located away from standing water, such as stagnant ponds or catch basins, whenever possible. Human-provided water sources (eg, water bowls) should be changed at least twice per week to prevent mosquito larvae from developing (category IB).

### **Enteric disease prevention**

- All dogs should be on an effective endoparasite prevention program prior to and during group setting involvement on the basis of season, geography, and type of group setting (eg, indoor vs outdoor; category IA).
- Prompt removal and disposal of dog feces should be encouraged and canine coprophagia discouraged in group settings (category IB).
- All dogs in group settings should be fed a standard commercial diet that has been processed to reduce or eliminate foodborne bacteria (eg, heating, irradiation, or high pressure pasteurization) or a thoroughly cooked homemade diet to decrease the risk of spreading enteric pathogens (category IB).

## **Environmental disinfection and hygiene**

- A cleaning and disinfection program should be developed and implemented for indoor and outdoor exercise, grooming, and housing areas. Key principles such as prompt removal of gross debris, cleaning with detergent and water, and correct use of a disinfectant (appropriate product, dilution, and contact time required for killing or inactivating pathogens that dogs may encounter in the setting) should be followed (category IA).
- Whenever possible and applicable, the flooring in the group setting should be made from nonporous material that is easy to clean and disinfect (category IA).
- As appropriate for the group setting, owners or handlers should bring their own items (eg, bedding, toys, grooming tools, and water or food bowls) and be discouraged from sharing those items with other dogs, owners, or handlers (category IB). Equipment and soft goods provided by the setting coordinators, such as leashes, collars, toys, and bedding, should be for dedicated single animal use (category II). Following use, equipment (notably clipper blades, grooming tools, water or food bowls, and nondisposable medical items such as thermometers) should be routinely cleaned and disinfected, particularly prior to use with a different dog (category IB).
- Setting coordinators should encourage staff, owners, handlers, and others with dog contact to wash hands with water and liquid soap (or apply an alcohol-based hand sanitizer when hands are not visibly soiled) on entry to and exit from the group setting and between contact with each dog (category IB).
- Hand washing or alcohol-based hand sanitizer stations should be readily accessible in group settings to encourage hand hygiene and reduce pathogen spread (category IB).

- To reduce fecal contamination, ectoparasites, and other pathogens on the coats of dogs, owners should be encouraged to bathe dogs with a routine pet shampoo prior to entry into a group setting (category II). For group settings involving repeated entries, such as dog daycare, bathing should be performed on a regular basis or whenever debris is visible on a dog. Regular brushing may be useful when frequency of bathing is impractical (category II).

### **Additional exclusionary measures**

- Dogs that have originated from or spent time outside Canada and the United States should be excluded from group settings for 2 weeks following their return or entry (category II).
- Dogs not formally involved in a group setting, such as those brought to a dog show for socialization or sale, can contribute to an increase in the overall risk of infectious disease and, particularly young dogs, should be excluded from the setting (category IB).
- To reduce the risk of spreading pathogens, high-density kennel situations should be avoided (category IA). This is particularly important for young dogs (puppies) and dogs that have not received their full core vaccination series (category IA). Dog density should not interfere with the ability to appropriately disinfect the setting environment or maintain adequate air quality (category IB).
- Unnecessary dog-to-dog contact should be minimized, while still allowing any intended benefits of the group setting (category IA). When dog-to-dog contact is an integral part of the setting (eg, dog daycare), semipermanent small subgroups

(cohorts) should be established to reduce new contacts and infectious disease transmission (category IB).

- Careful attention should be paid to anticipated or potential dog and person movement when developing a facility or setting layout to minimize unnecessary dog-to-dog and dog-to-person contact (category IB).
- Group settings should have a dedicated isolation area where dogs known or suspected to have an infectious disease can be immediately segregated from other dogs in the setting (category IA). The location of this area should allow for physical and procedural separation from other dogs (category IA).

### **Disease recognition and response**

- Coordinators of group settings should have a surveillance program in place to monitor for infectious diseases, focusing on dogs that develop clinical signs at the setting.
- Owners or handlers should be encouraged to report suspected or confirmed cases of infectious disease that develop in their dogs within 2 weeks after attending a group event (category IB).
- Group setting coordinators should use record-keeping systems that capture individual dog information regarding dates of involvement in the setting, location and housing during their attendance, required health documentation, reported disease or syndrome concerns, and contact information for owners or handlers (category IB).
- Staff, handlers, and owners should visually monitor dog health and report dogs with any of a predetermined set of signs (syndromic surveillance) to the setting coordinator or veterinarian (category IB).

- Any dog that becomes ill or is believed to have an infectious disease should be immediately removed from the group setting (to isolation or removed from the premises), pending evaluation by a veterinarian (category IB). While a dog is in isolation, physical and procedural measures appropriate for the suspected pathogen should be used to reduce the risk of disease transmission to other dogs and contamination of the environment, as recommended by the setting veterinarian (category IB). To further reduce the risk of transmission, dogs exposed to dogs with infectious disease should be identified, given that these dogs may develop infectious disease following the pathogen-specific incubation period.
- Susceptible dogs with known exposure to another dog or dogs with infectious disease should be excluded from the group setting for a quarantine period of 2 weeks, or as recommended by a veterinarian (category IB).
- A plan for responding to reports of suspected or confirmed infectious disease in dogs involved in group settings should be developed to describe how information will be acquired and evaluated to identify disease transmission associated with the setting, general and pathogen-specific approaches for how affected and exposed dogs will be handled, and actions that will be taken to contain pathogen spread. Identification of a person who will be responsible for overseeing response actions and communication with the public is strongly encouraged as part of the plan (category IB).

Classification system used to categorize the quality of evidence used to develop the recommendations.\*

<i>Category</i>	<i>Description</i>
IA	Strongly recommended for implementation and strongly supported by well-designed experimental, clinical, or epidemiologic studies
IB	Strongly recommended for implementation and supported by certain experimental, clinical, or epidemiologic studies and a strong theoretic rationale
IC	Required by provincial or territorial, state, or federal regulation, or representing an established association standard
II	Suggested for implementation and supported by limited clinical or epidemiologic studies or by a theoretic rationale
Unresolved	No recommendation offered; no scientific consensus or insufficient evidence exists regarding efficacy

\*Schulster LM, Chinn RYW, Arduino MJ, et al. Guidelines for environmental infection control in health-care facilities. Recommendations from CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC). Chicago: American Society for Healthcare Engineering/American Hospital Association, 2004;117.