

Infection Prevention and Control Best Practices for Small Animal Veterinary Clinics

Canadian Committee on Antibiotic Resistance, 2008

ABSTRACT

This document was developed by the Canadian Committee on Antibiotic Resistance and is intended to guide clinical practice and provide assistance for decision-making on infection prevention and control issues. Furthermore, this document is designed to provide a complete and readily accessible summary of infection prevention and control best practices for small animal veterinary clinics, and is intended to be understandable to all members of the veterinary practice team.

SUMMARY OF KEY MESSAGES IN REGARDS TO INFECTION PREVENTION AND CONTROL

Infection prevention and control strategies are designed to protect patients, owners, veterinary personnel and the community. All veterinary personnel should play an active role in protecting every person and animal associated with the veterinary clinic. Decreasing exposure to microorganisms is the most important aspect of disease control in most situations. Every veterinary clinic, regardless of type or size, should have a formal infection control program, a written infection control manual that describes the program, and an infection control practitioner (ICP) to coordinate the program. Some form of surveillance (either passive or active) should be practiced by all veterinary facilities. The keys to passive surveillance are to centralize the available data, and to have a designated ICP who compiles and evaluates the data on a regular basis.

ROUTINE PRACTICES THAT ARE CRITICAL TO INFECTIOUS DISEASE PREVENTION AND CONTROL HAND HYGIENE

Hand hygiene is the single most important way to prevent infections. Intact skin is the first line of defense against bacteria, therefore, hand hygiene should be performed:

- Before and after contact with a patient (especially before performing invasive procedures)
 - Before and after contact with items in the patient's environment
 - After any contact with or any activity involving the body fluids of a patient
 - Before putting on and especially after taking off gloves
- Alcohol-based hand sanitizers are the preferred method for decontaminating hands that are not visibly soiled, as they have superior ability to kill microorganisms on the skin (even better than hand washing with antibacterial soap), can quickly be applied, are less likely to cause skin damage and can be made readily available. Alcohol-based hand sanitizer should contain 70-90% alcohol.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment (PPE) is used to protect veterinary personnel and to reduce the risk of pathogen transmission by clothing to patients, owners, veterinary personnel and the public. Street clothes should always be covered by protective outerwear, such as a lab coat, when working in the clinic. Protective outerwear, including scrubs, should not be worn outside the clinic. Lab coats and gowns worn when handling patients with potentially infectious diseases should be laundered after each use. Gloves should be worn when contact with blood, body fluids, secretions, excretions and mucous

membranes is impossible, as well as when cleaning environmental surfaces and when doing laundry if grossly contaminated. Face protection should be used whenever exposure to splashes or spays is likely to occur. Designated footwear or disposable shoe covers may be required for some patients with infectious diseases. In veterinary clinics, it is important to prevent the spread of infectious materials present on the floor, as patients and personnel often have very close contact with the floor.

CLEANING AND DISINFECTION

Cleaning involves the removal of visible organic matter with soap or detergent, whereas disinfection involves the application of a chemical or other procedure in order to kill the remaining microbes that cannot be adequately removed by cleaning. Cleaning is essential because the survival time of many infectious agents outside the host is prolonged by the presence of organic matter, and organic matter also decreases the effectiveness of disinfectants.

Cleaning

Recommended cleaning procedures for common environmental surfaces:

- ☑ Ensure all areas are well ventilated during cleaning
- ☑ After cleaning, allow all surfaces to dry completely

Removing loose, dry debris from surfaces:

- ☑ Avoid generating airborne dust that may contain pathogens by using a vacuum cleaner equipped with a

HEPA filter, spraying surfaces with water prior to mopping or sweeping, using an electrostatic wipe, or use a wet mop

- ☑ Exposure to aerosols generated by brushes during cleaning can be minimized by taking certain precautions, such as wearing a face mask and containing spatter if the brush or surface is damp

Removing sticky, wet or dried-on organic material from surfaces

- ☑ This kind of debris should be removed using a detergent or soap and a brush or cloth, as necessary
- ☑ During cleaning, it is the mechanical action and surfactant properties of the soap that are important

- ☑ Avoid the use of pressure washers, particularly those that produce more than 120 psi of pressure. This amount of pressure may cause aerosolization of pathogens, and pressure washing may even damage surfaces, thus making them harder to disinfect properly

Disinfection

Disinfection can only be maximally effective if it is preceded by thorough cleaning. Some pathogens (e.g. *C. difficile*) are highly resistant to disinfection, therefore cleaning in these cases is particularly crucial in order to mechanically remove the organisms.

- ☑ Ensure all the areas are well ventilated during disinfection
- ☑ Gloves should be worn when handling disinfectants
- ☑ Use of protective eye goggles is also recommended when handling disinfectants due to the splash risk
- ☑ Always apply the selected disinfectant according to the product label, with particular attention to appropriate dilution and the required contact time
- ☑ If animals or personnel may have direct skin contact with the surface, or if the disinfectant used may damage a particular surface, the disinfectant may need to be rinsed off with clean water after an appropriate amount of time has elapsed
- ☑ After disinfection, allow all surfaces to dry completely

SINGLE-USE VS. REUSABLE EQUIPMENT

Single-use equipment (e.g. hypodermic needles) should not be re-sterilized or disinfected for re-use. Such items should be properly disposed of immediately after initial use. Multi-use equipment must be properly cleaned and disinfected between each patient. There are three categories of multi-use equipment used on patients: critical, semi-critical, and non-critical.

Critical equipment such as surgical instruments, enter sterile tissues, including the vascular system. They need to be cleaned followed by sterilization. Semi-critical equipment such as endoscopes, come in contact with non-intact skin or mucous membranes but does not penetrate them. These need to be cleaned followed by high level disinfection as a minimum. Lastly, non-critical equipment such as a stethoscope touches only intact skin and not mucous membranes, or it does not directly touch the patient. These should be cleaned followed by

low level disinfection, in some cases cleaning alone is acceptable.

Food and water bowls used by animals with communicable diseases should be cleaned and disinfected separately, but careful selection of the disinfectant used is required because only some disinfectants are approved for use on surfaces that come in contact with food. Otherwise disposable dishes can be considered for these animals. Cleaning alone is adequate for food and water bowls from other animals. Toys, litter boxes, and other miscellaneous items should be cleaned and disinfected between animals, or discarded if they are not amenable to proper cleaning and disinfection.

DISINFECTANT SELECTION

Selection of a disinfectant for a particular purpose should take into account the products spectrum of activity, susceptibility to inactivation by organic matter, potential pathogens in the environment, compatibility with soaps and detergents, toxicity for personnel and animals, contact time required, corrosiveness, environmental effects and cost.

SURGICAL PROCEDURES

All surgical procedures cause breaks in the normal defensive barriers of the skin and mucous membranes, and therefore carry an inherent risk of surgical site infections (SSI). Steam sterilization is most commonly used in veterinary clinics for sterilization of surgical instruments. Quality control testing of autoclaves should be performed regularly. At a minimum, anesthetic equipment must be thoroughly cleaned with hot water and detergent immediately after use to prevent any discharge or debris from drying and forming a biofilm on the device. Additional disinfection may be required for certain pieces of equipment or under particular circumstance.

ISOLATION AREAS

Every veterinary clinic should have an isolation area for caring for and housing animals with potentially

contagious infectious diseases. All items entering an occupied isolation area should be considered infectious and disposed of or disinfected after discharge of the patient. All personnel entering an isolation area, regardless of whether they plan on having direct contact with the animal, must wear appropriate PPE. All waste from an isolation room should be treated as potentially infectious.

FOOTWEAR AND FLOOR SURFACES

Footwear and floor surfaces cannot be overlooked in an infection control program in a small animal clinic because patients so often have extensive direct contact with the floor. Maintaining proper concentrations of active disinfectants in footbaths and foot mats is essential for proper performance.

ANIMALS FROM SHELTERS

Animals from shelters and similar facilities should be considered high risk from an infectious disease standpoint. All animals from such facilities should be examined immediately upon arrival without coming in contact with other animals in the waiting/reception area. Animals from these facilities should be housed separately, if possible.

EDUCATION

All personnel should receive education and training about injury prevention and infection control, including temporary lay-personnel, kennel staff, students and volunteers. Furthermore, it is the clinics responsibility to educate clients of zoonotic and infectious disease risks or the veterinarian has a reasonable suspicion of a potentially infectious disease.

REFERENCE

Canadian Committee on Antibiotic Resistance (2008). Infection Prevention and Control Best Practices for Small Animal Veterinary Clinics.