

Infection Control for Home Based Foster Care

Miranda Spindel, DVM, MS
Director of Veterinary Outreach, ASPCA
mirandas@aspca.org

Introduction

Homeless animals enter into care and placement programs from many sources, often without prior preventive health care. Some animals are already sick, injured, stressed, have parasites, or are otherwise vulnerable to developing disease on arrival. Most have potential to either acquire or transmit infectious disease.

Without a systematic approach to infection control that focuses on creating healthy animals, those who care for homeless animals in their home environments risk creating situations that can ultimately lead to decreased welfare for foster animals. Strong environmental, medical, and behavioral health care practices are the foundation of a program placing ever-increasing numbers of healthy, friendly animals into the community.

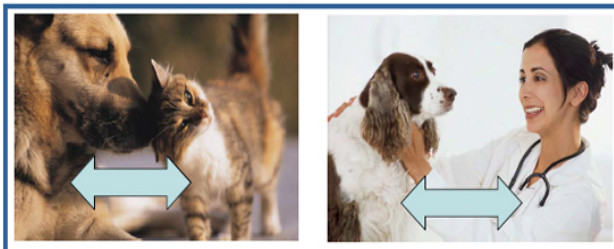
Guiding Principles

1. Homeless animals always present a risk for transmission and/or development of infectious disease.
2. Basic infection control relies on understanding
 - Disease transmission
 - Application of routine practices for preventing disease transmission as a standard of care
 - Preventive health-care practices that help animals resist disease

Modes of Disease Transmission

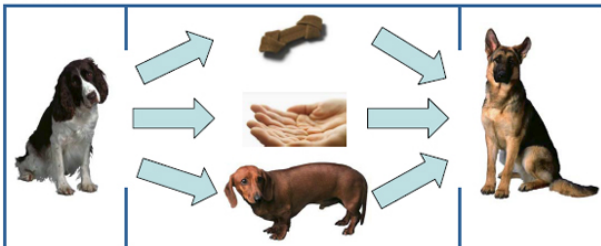
Direct Contact – involves direct body surface to body surface — from one animal to another or from an animal to a human.

Direct Contact



Indirect Contact or Fomite – contact between susceptible animal and a contaminated inanimate object (a fomite), such as equipment, clothing, or surfaces. Often the result of poorly washed hands.

Indirect Contact



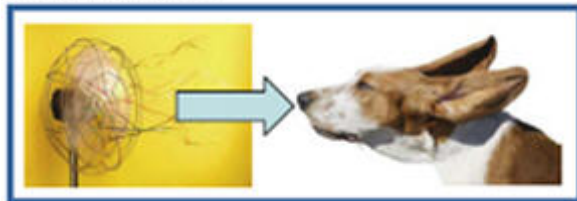
Droplet – small infectious droplets that do not remain suspended in the air but travel a short distance through the air and deposit on host's mucosal surfaces. Droplets can also land in the environment and lead to indirect contact transmission.

Droplet (<1 metre)



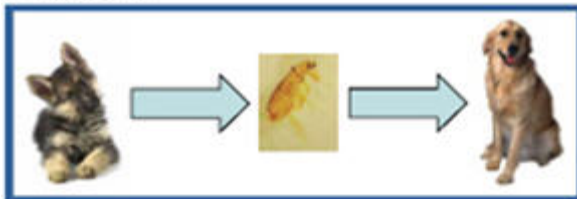
Airborne –infectious residue from dried droplets or dust remains suspended and able to travel distances through the air. This residue is infectious for long periods of time.

Airborne (>1 metre)



Vector – disease transmission occurs through another animal capable of transmitting disease host, such as a rodent, fly, mosquito, or tick.

Vectorborne



Routine Practices in the Home Environment

Routine practices to control disease transmission include:

- Setting up an isolation area for the foster animals
- Practice good hand hygiene before and after handling animals or objects in the isolation area
- Cleaning and disinfecting items in the isolation area using the appropriate agents

Recommendations for Setting Up an Isolation Area

- Isolated from other pets in home
- Surfaces are easy to disinfect (vinyl or tile floor — no carpet)
- Pet-proof
- Stocked with supplies that are dedicated to the area and easy to sanitize
- Area has a good, ideally separate source of ventilation
- Low human traffic

Hand Hygiene

Clean hands before and after handling animals or items in the animals' environment.

Alcohol-based hand sanitizers

- are recommended when hands are not visibly soiled
- provide for a rapid kill of most transient microorganisms

Instructions:

1. Ensure hands are visibly clean (if soiled, follow hand washing steps).
2. Apply 1 to 2 full pumps of product.
3. Spread product over all surfaces of hands, concentrating on finger tips, between fingers, back of hands, and base of thumbs. These are the most commonly missed areas.
4. Rub hands until product is dry. This will take a **minimum of 15 to 20 seconds** if sufficient product is used.

Soap and water

- Recommended when significant soiling or risk is present

Instructions:

1. Wet hands with warm (not hot) water.
2. Apply liquid or foam soap 1-2 full pumps.
3. Vigorously lather all surfaces of hands for a **minimum of 15 seconds**.
 - Removal of transient or acquired bacteria requires a minimum of 15 seconds mechanical action.
 - Pay particular attention to finger tips, between fingers, backs of hands and base of the thumbs. These are the most commonly missed areas.

Cleaning and Disinfecting Agents

Soaps and detergents are not the same as disinfectants. It's important to understand how these two groups of products work and to use them appropriately:

- **Soaps and detergents** are cleaning agents that work by suspending dirt and grease and breaking up organic matter. Soaps do not necessarily kill germs. Dish and laundry soaps are common examples of detergents.
- **Disinfectants** are chemical solutions that kill germs. The particular germs killed depend on the ingredients in the disinfectant. While some disinfectants serve a dual purpose and have some cleansing properties, many disinfectants do not effectively remove dirt and grease. Bleach, Trifectant, and quaternary ammonium products — such as Roccal, A-33, and Kennelsol — are examples of common disinfectants. The following table identifies some common disinfectants and the pros and cons of their use.

Disinfectant Name	Common Name	Pros	Cons	Contact Time
Sodium Hypochlorite	5% Household Bleach	Inexpensive Easy to obtain Effective against ringworm when used at 1:10 dilution Effective against parvo, panleukopenia at 1:32 dilution	Inactivated with organic material No detergent activity (cleaning step required) Irritating fumes and corrosive at higher concentrations Needs to be prepared fresh daily and protected from light	10 minutes
Quaternary Ammonium	Roccal Kennelsol A-33 Others	Some detergent activity Mild inactivation with organic material	Not reliable against parvo virus, ringworm, or panleukopenia	10 minutes
Potassium Peroxymonosulfate	Virkon-S Trifectant	Some detergent activity Stable for 7 days when mixed from powder Less inactivation with organic material	Not reliable against ringworm More expensive	10 minutes

Cleaning and Disinfecting Objects and Surfaces in the Isolation Area

Surface/Object	Suggested Procedure	Special Steps
High contact surfaces	Daily cleaning with a detergent Weekly disinfection	
Visibly soiled objects/surfaces	Cleaning with a detergent Disinfection	
Litter boxes and food bowls	Cleaning daily Disinfection weekly	Sanitize food bowls separately from litter boxes
All regular surfaces	Weekly cleaning and disinfection	Increase frequency to daily or more often when infectious disease is present
When new animals are introduced (between animals)	Thorough cleaning and disinfection between animal residents	
Laundry	Remove organic material before laundering Use soap and bleach Machine or sunlight to dry	

Preventive Health Care

Two key components of preventive health care for shelter animals, including those who spend time in foster care are vaccination protocols and parasite control.

Vaccinations

Vaccines are one of the most important and lifesaving tools available to shelters when vaccination protocols are appropriately developed and applied. The American Animal Hospital Association (AAHA) and American Association of Feline Practitioners (AAFP) have developed shelter specific panel guidelines that shelter professionals can refer to. Recognizing that no universal protocol will apply to every situation and that shelter animals are unique from household pets, protocols must be customized for each facility. Vaccination is a medical procedure. Oversight of vaccine protocols and specific patient questions should be directed to a veterinarian.

Vaccines Recommended on Admission

Dogs:

Da2PP – (Canine Distemper, Hepatitis, Parvovirus, Parainfluenza)

- Administration site: right shoulder or interscapular space subcutaneously
- Pups begin at 4-6 weeks of age
 - Boost at 2-3 week intervals until 16 weeks of age, then annual booster
 - (Breeds like Rottweilers and Dobermans should be vaccinated until 24 weeks of age)
- Adult dogs should receive one vaccine on admit
 - Boost in 2-3 weeks
- Mildly ill or injured dogs and pups should be vaccinated
- Severely ill animals, injured animals should be isolated and consult veterinarian
- Pregnant animals – weigh risk:benefit and consult veterinarian

Bordetella, Parainfluenza +/- Adenovirus Type II – (Kennel Cough)

- There are intranasal and subcutaneous kennel cough vaccines
 - The subcutaneous kennel cough vaccine contains Bordetella
 - Intranasal vaccines are available with just Bordetella, Bordetella and Parainfluenza, or Bordetella, Parainfluenza and Adenovirus II (recommended).
- Puppies & Adults: One intranasal or subcutaneous vaccine on admission
 - Booster subcutaneous in 2-3 weeks

Cats:

FVRCP – (Feline Rhinotracheitis (herpes), Calici, Panleukopenia)

- Modified live vaccines induce more rapid immunity than killed vaccines and are preferred
- There are intranasal and subcutaneous forms of feline vaccines available. Intranasal vaccines induce immunity locally vs. systemically but sometimes can cause mild clinical signs. IN panleukopenia fraction is generally not relied upon in the shelter environment.
- Administration site: subcutaneous in the right shoulder or intranasal
- Kittens begin at 4-6 weeks of age
 - Boost at 2-3 week intervals until 16 weeks of age, then annual booster
- Adult cats should receive one vaccine on admit
 - Boost in 2-3 weeks

Vaccines Recommended on Admission or Exit

Rabies

- Recommended either on intake or exit from the shelter.
- Some states require a veterinarian for this vaccine's administration
- Follow state legal requirements for age, administration and appropriate revaccination schedule
 - Kittens and puppies usually receive at 12 - 16 weeks
- Booster given in one year and then every 1- 3 year vaccination recommended. There are some vaccines that must be given annually.

Other Vaccines

There are many other available vaccines that may or may not be appropriate for a shelter program to incorporate. These include:

- Feline Bordetella
- Feline Leukemia
- Feline Immunodeficiency Virus
- Ringworm
- Giardia
- Lyme Disease
- Leptospirosis.

Parasite Control

Dogs and cats can carry a wide variety of internal and external parasites, some of which can be passed to humans, and some of which can cause significant disease and discomfort in their host. It is not possible or practical to test or treat each animal for all possibilities. Programs should create written guidelines for prophylactic parasite control tailored to regional and facility parasite prevalence and based upon the sheltering facility and mission. The Center for Disease Control and the Companion Animal Parasite Council provide guidelines that can be used for shelters to reference.

General Recommendations

- Because no product will safely and cheaply treat for all parasites, de-worm animals on intake with a product that covers the main zoonotic agents of concern (hookworms and roundworms).
 - Example products include pyrantel pamoate, fenbendazole
- Animals with clinical signs of parasite infestation should additionally receive individualized workup and treatment.
- It is strongly advised that all shelters provide written information explaining to adopters that adopted animals should have a physical examination and a stool sample checked by their regular veterinarian soon after adoption to check for parasites.

Summary

Homeless animals entering home-based care programs are a population that are at high risk for developing infectious disease for a variety of unpreventable reasons. Many animals that appear healthy may actually be incubating disease that can soon affect other animals and people in the home. Proper forethought must be given to a home infection control plan to prevent the very homes who are striving to rehabilitate animals in need from becoming unhealthy havens themselves.