

Controlling Upper Respiratory Infections in Your Shelter

By Leslie Sinclair, DVM

[What You Should Know about Upper Respiratory Infections:](#)

This question-and-answer sheet can be adapted for use as a handout for adopters.

[Feline URI and Colony Cat Housing: What is the Risk?](#)

[A Summary of Strategies & Information Sources](#)

Upper respiratory infections can run through your shelter as quickly as a child's cold runs through a day-care center. With proper care, these common feline and canine illnesses typically present little or no problems. Affected animals usually recover quickly and with few long-term ill effects.

But without good management and care, the slightest upper respiratory infection can lead to severe illness, chronic health problems, even fatal pneumonia. Careful pre-adoption evaluation of animals, preventive health care, sanitation, and staff and adopter education are your best weapons against upper respiratory infections in your shelter.

Whether your shelter admits 20 animals per week or 2,000, it's faced with an ever-changing population. Who knows where all those dogs, cats, kittens, and puppies have been and to what diseases they've been exposed? Yours is a daily battle against incoming infectious diseases. And upper respiratory infections--feline URI and canine kennel cough--are the most common enemies for you and the animals you shelter.

The bad news is that you can't and won't win every battle against upper respiratory infections in your shelter. But the good news is that you can win the war. No single pill, vaccine, or procedure will eliminate the problem of upper respiratory infection, but many strategies, implemented together, will achieve the goal of disease control.

The two major strategies for controlling upper respiratory infections in the shelter are minimizing exposure to the disease-causing viruses and bacteria and strengthening each animal's immunity to infection. Each strategy is essential; success cannot be achieved by addressing one while ignoring the other. Implementing these two strategies also provides the added benefit of decreasing the incidence of other infectious diseases in your shelter population.

Minimizing Exposure to Infectious Agents

Wouldn't it be great if you could put up an invisible barrier at the entrance to your shelter through which no viruses or bacteria could pass? Unfortunately, most of the animals you intend to shelter would be left on the outsider. It is impossible to eliminate disease in the shelter because nearly every animal who walks through your front door is potentially--and probably-- a disease carrier. Some animals have "acute" infections--those infections which have just been acquired and are incubating within the animal and some animals have "chronic" (long-term) infections. Carriers of chronic infections may never show symptoms, but they are still capable of spreading disease.

Even though you can't shield the animals in your shelter from viruses and bacteria, you can minimize their exposure to infectious disease. One of the best ways to do this is to recognize that animals have different immunity to disease at different stages of their lives. Separating the animals you shelter not only by species Known characteristics or special qualities

Special needs but also by "life-stage groups" offers them some protection. Ideally, each group would have its own area in your shelter, but simply being aware of the different groups as you develop your shelter's routines will be beneficial. These life-stage groups include:

- Puppies and kittens separated from their mother before being weaned (at less than 8 to 10 weeks of age)
- Pregnant animals and nursing mothers with puppies or kittens.
- Weaned puppies and kittens (approximately 2 to 4 months of age)
- "Juvenile" puppies and kittens (approximately 4 to 9 months of age)
- Adult dogs and cats (9 months and older)
- Injured or ill animals

Plan cleaning, feeding, and other activities with life-stage groupings in mind. Care for young animals first, followed by the general shelter population, and finally, sick or injured animals. Wash hands and change clothing before tending to each new group; full-length, long-sleeved "surgical gowns" or technicians' smocks are ideal because they can easily be removed after handling each group, and later laundered. (Local hospitals may be able to donate disposable gowns to your shelter.)

If possible, use a separate set of cleaning supplies, feeding equipment, and other potential disease-transferring items to care for each different group. If that is not possible, then thoroughly disinfect the items before use with each new group.

Thorough sanitation of the shelter is a necessity. Follow these basic rules:

- Clean all kennels, cages, floors, utensils, bowls, litter pans, and other surfaces thoroughly at least once daily, twice if possible.
- Dilute disinfectants and cleaning agents according to label directions.
- Remove organic matter (including saliva and mucus on cage and kennel walls) before disinfection.
- Thoroughly dry all surfaces before placing the animal back into the cage or kennel.

For animals in cages, it is ideal to designate two cages per animal. Label your cages "MA" and "(1)B," "(2)A" and "(2)B," and so on. Every animal can be transferred to the alternate cage while the dirty cage is being cleaned. "Think of each cage as a dog kennel, inside and outside," says Carole Nicodemus, animal caretaker for the Potter League for Animals in Newport, Rhode Island. Because the level of infectious disease contamination increases as the number of animals in your shelter increases, this two-cages-for-every-animal rule also limits overcrowding in your adoption area. Post signs to let the public know that "every animal needs two cages to stay happy and healthy." And while some may insist that using only half of the "available" cage space will increase the number of euthanasias performed in your facility, the alternative endangers the health of your animals and may lead to the same result.

Adequate ventilation, temperature, and humidity control are additional ways to minimize animals' exposure to upper respiratory infections. Ideally, a ventilation system should be engineered to achieve between 10 and 15 air exchanges per hour. This means that all the air inside the shelter's animal-housing areas should be replaced with fresh air from outside between 10 to 15 times an hour. Airflow also should follow the rules of life-stage grouping. For example, air should never flow from adult animal areas into puppy and kitten areas.

In addition, the heating and cooling systems should work for the animals, not against them. Wide fluctuations in temperature are conducive to upper respiratory infections. Temperature should be maintained at a minimum of 75 degrees for infant animals and at 65-70 degrees for adults. Similarly, high environmental humidity means longer lives for viruses and bacteria, as well as slower drying of surfaces. Heating and cooling systems should keep humidity levels below 50 percent. Maintaining temperature,

humidity, and ventilation standards can be tricky. "We see relatively few cases of kennel cough," says Bob Downey, executive director of the Capital Humane Society in Lincoln, Nebraska. "But when we do, it's in the winter. When we close our indoor/outdoor dog runs to protect the animals from the cold, it greatly decreases the amount of ventilation in our kennels, and then we see kennel cough."

Thinking about Facility Design

When renovating a shelter or designing a new one, work with your architect and veterinarian on devising ways to control the spread of infectious upper respiratory diseases. Here are some basic considerations:

- All surfaces-kennel walls, floors, cages-should be made of non-porous materials that can be easily and effectively sanitized, such as stainless steel, fiberglass, sealed concrete, or ceramic.
- Adequate ventilation and humidity control systems are vital; manage airflow patterns wisely.
- Traffic-flow patterns (the ways animals are transported from room to room in your facility) should keep incoming animals with unknown health status separate from the general shelter population. Public traffic should flow through your shelter similarly, progressing from early life-stage groups to older animals.
- Use dishwashers (either household or industrial) to effectively sanitize feeding utensils and litter boxes. 0 Isolation areas are essential for animals who exhibit symptoms of illness.
- Noise-reduction efforts can reduce the stress of life in the shelter and thereby help limit disease susceptibility, especially for cats and timid dogs. Sound baffles above dog kennels are effective. Cat areas should be as free of the sounds of barking dogs as possible. Insulation between the walls of stainless steel cages greatly reduces noise within the cages.
- Consider the animal's comfort one of the most important factors throughout the design process.

Strengthening Immunity Against Infection

Proper nutrition is critical for a healthy immune system. Provide the best quality food your shelter can afford, and be sure individual animals are eating. Use every method at your disposal to decrease the stress your shelter's animals are undergoing. Keep them warm, dry, and comfortable; ask your staff and volunteers to give them walks, disposable toys, and the human companionship that most of them crave.

Bonnie Yoffe-Sharp, DVM, medical chief of staff for Peninsula Humane Society in San Mateo, California, encourages her staff to be especially aware of the stress sheltered cats are more likely to feel. She recommends covering cat carriers with a towel when transporting cats, allowing "cooling off" periods for cats who are fractious when admitted, and preventing cats from being exposed to the sights, sounds, and smells of dogs.

Institute a strong animal-health program that includes vaccination against upper respiratory infections and other contagious diseases. Include procedures for the elimination of internal and external parasites, and screen animals for other diseases as soon as possible after they arrive at your facility.

Finally, never admit defeat. Once you have realized that the fight against upper respiratory infections in sheltered animals is a daily battle, you are well on your way to winning the war. Understand that feline URI will be a constant presence, and that episodes of canine kennel cough can occur suddenly and without warning. If you do everything in your power to control and contain them, chances are good you'll hear considerably fewer sneezes in the cat room and coughs in the dog kennels.

When Treatment is an Option

Shelters often euthanize sniffing, sneezing, and coughing animals to protect the rest of the shelter population and to prevent public perception of the shelter as a place where all the animals are sick- But some shelters are now able to provide medical care for these treatable conditions or allow adopters to do so.

"I think we've seen a change in the adopting public," says Bob Downey, executive director of the Capital Humane Society in Lincoln, Nebraska. "It's different now than it was ten years ago, or even five years ago. It used to be that people didn't even consider adopting a sick animal. Now they have become more educated about what a shelter is. When people are willing to provide treatment for a sick animal, it's hard to tell them they cannot adopt a dog or cat because she has a [treatable] upper respiratory infection."

The Peninsula Humane Society in San Mateo, California, makes special provisions for cats with feline URI, depending on the number of cats in the shelter.

"In the winter, when there are fewer cats available for adoption, we designate a 'sick cat room' where we isolate cats, treat them until they've recovered, and put them back up for adoption," says Executive Director Kathy Savesky.

In December 1994, the Denver Dumb Friends League (DDFL) designated its DDFL West satellite shelter as an extended care facility" where animals with upper respiratory infections and other mild, treatable conditions could be isolated from the general shelter population and treated for their illnesses. Since that time, more than 460 animals who previously would have been euthanized because of their illnesses were adopted out to responsible homes.

'We tell the public that this is an extended care facility, and that the animal they are interested in adopting is sick,' says Gail Barlow, shelter manager of DDFL West. "People are very receptive. Because they realize they are getting an unhealthy animal, they are ready and willing to provide the care that animal needs."

How does the program work? When an animal at one of the DDFL shelters shows signs of an upper respiratory infection, kennel staff evaluate the animal for characteristics that make him or her a good candidate for adoption. If selected as an extended care candidate, the animal is transferred to the DDFL West shelter, where staff are trained to follow standard medical treatment protocols. A DDFL staff veterinarian visits the facility once a week to examine the animals and monitor treatment, and is also available at all times for consultation with shelter staff.

If adopted, the animals are released to their new owners along with any remaining medication and instructions on how to care for their new companion. Any necessary follow-up care is provided by the DDFL's Health Care Clinic. The animals return for their spay/neuter surgery two weeks after symptoms have subsided. The program boasts a 99.8 percent spay/neuter compliance rate.

"This program has actually decreased the occurrence of both feline and canine upper respiratory infections in our shelter," says Joan Casey, director of operations for DDFL. "We no longer worry about staff members hiding sneezing cats and coughing dogs from us to delay the euthanasia of those animals. Now [the animals] have another option, and the speedy removal of sick animals from the shelter has prevented the spread of disease and protected the other animals."

Like any program that improves the health and the lives of sheltered animals, this program also improves the emotional health of shelter staff: "It definitely improves staff morale," says Casey. "It's good to know that every lost-and-found dog or cat is not destined for euthanasia because of the inevitability of their developing an upper respiratory infection during the stray-holding period."

It's a luxury not every shelter can afford. But for those shelters with the space, staff, veterinary support, and knowledgeable adopters, treatment of upper respiratory infections in sheltered animals can be a winning situation for all involved.

Should Your Shelter Use Intranasal Vaccines?

When an animal is vaccinated against disease, the vaccine is typically injected under the animal's skin (subcutaneously or "SQ") or into a muscle (intramuscularly or "IM"). The vaccine is absorbed by the body from the site of the injection and processed by the immune system. If the vaccination is successful, the immune system will be prepared to fight off the disease wherever that disease may attempt to enter the body. This is called "systemic immunity."

Can intranasal vaccines provide better protection for the animals in your shelter? It's possible. Consult with a veterinarian who is familiar with the special health needs of sheltered animals and who is familiar with your particular shelter's environment and its inhabitants. Here are the brand names of several intranasal vaccines you should discuss with your shelter's veterinarian:

- Bronchi-Shield II (canine adenovirus type 2--parainfluenza-Bordetella bronchiseptica vaccine) manufactured by Fort Dodge
- Naramune-2 (canine parainfluenza-Bordetella bronchiseptica vaccine) manufactured by Boehringer-Ingelheim Animal Health, Inc.
- Intra-Trac-11 (canine parainfluenza-Bordetella bronchiseptica vaccine) manufactured by Schering-Plough Animal Health
- Rhinolin-CP (feline rhinotracheitis-calici-panleukopenia vaccine) manufactured by Boehringer-Ingelheim Animal Health, Inc.
- Felornune CVR (feline rhinotracheitis-calici vaccine) manufactured by Pfizer Animal Health, Inc.
- Progard-KC (canine parainfluenza-Bordetella bronchiseptica vaccine) manufactured by Intervet, Inc.

But respiratory infections such as feline URI and canine kennel cough are "local" infections. They attack only one part of the body: the upper respiratory system, which consists of the nose, sinuses, and throat. When an animal is likely to be exposed to an upper respiratory infection, such as in an animal shelter, it may be more effective to vaccinate the animal at the site of the infection.

Intranasal vaccines are available for protection against the most common causes of feline URI and canine kennel cough. Intranasal vaccines are delivered to the nasal passage with syringes or special applicators provided with the vaccine (similar to the "squirt" provided with a nasal decongestant). The vaccines go directly to the infection site, the soft tissues lining the nose and sinuses, and create a type of disease protection called "local immunity."

The biggest advantage of intranasal vaccines is that they work fast, often protecting the dog or cat from infection within 48 to 72 hours after administration. And because they are not affected by the maternal immunity that puppies and kittens get from their mothers, intranasal vaccines can be used to protect animals as young as two to three weeks of age.

But intranasal vaccines also have their drawbacks. They are more difficult to deliver than pills and liquid medications because animals often resist during administration. Their effect is immediate but may last a shorter time; that's why veterinarians often administer a systemic vaccination after the animal has been adopted and removed from the shelter environment. And because they so closely mimic infection with the real virus, intranasal vaccines may actually cause some mild symptoms of the disease they are intended to prevent. Cats are particularly susceptible to a few days of sneezing-without fever or loss of appetite-after being administered an intranasal feline herpesvirus-feline calicivirus vaccine.

Adopters, volunteers, shelter staff, and local veterinarians must be informed when an intranasal vaccine has been used and understand that some sneezing may be expected. 'You have to help the staff understand that it's okay if the cat sneezes,' says Bob Rohde, executive director of the Denver Dumb Friends League.

Controlling Upper Respiratory Infections in Your Shelter:
A Summary of Strategies

Minimizing Exposure to Infectious Agents

- Provide separate housing for different life-stage groups

Strengthening Immunity Against Infection
General Immunity

- Provide excellent nutrition
- Decrease stress-

SOURCES FOR THIS FEATURE SECTION

Ford, DVM, MS, Richard B. "The Future of Feline Vaccines and Vaccinations." *Veterinary Technician*, September 1996, pp. 647-649.

Hawkins, DVM, Eleanor C. "Controlling Feline Upper Respiratory Infections in Crowded Households." *Veterinary Technician*, October 1996. pp. 713-715

<p>in order of life-stage groups</p> <ul style="list-style-type: none">• Thoroughly clean and disinfect• Ensure adequate ventilation• Ensure adequate temperature and humidity control	<ul style="list-style-type: none">• Eliminate other disease-causing conditions in the animal <p>Specific Immunity</p> <ul style="list-style-type: none">• Give "systemic" vaccinations (subcutaneous)• Give "local" vaccinations (intranasal)	<p>Sherding, DVM, Robert G., ed. <i>The Cat: Diseases and Clinical Management</i>, second edition. New York: Churchill Livingstone, 1994.</p>
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