

Section 9: Protecting persons at increased risk of zoonotic diseases: pregnant women, children younger than 5 years, organ transplant recipients and people with HIV/AIDS

- 9-1 Preventing infections from pets among persons at increased risk (CDC)
- 9-2 Safe pet guidelines (PAWS)
- 9-3 The Immunocompromised Household: Informing Clients about Pets and Zoonotic Disease – A Guide for Veterinarians (PAWS brochure) & Sample New Client Registration Form
- 9-4 HIV/AIDS Education: Still an important issue for veterinarians (Public Health Report article, included with permission from publisher)

Information & resources

Center for Disease Control and Prevention

9-1 Safe pet guidelines for people at extra risk: www.cdc.gov/healthypets/extra_risk.htm

Pets Are Wonderful Support (PAWS)

9-2 Safe pet guidelines (booklet): www.pawssf.org/SafePetGuide/SPG8.pdf

9-3 The Immunocompromised Household: Informing Clients about Pets and Zoonotic Disease – A Guide for Veterinarians:

www.pawssf.org/SafePetGuide/vets-pets-2008.pdf

9-3 Sample New Client Registration Form

<http://www.pawssf.org/SafePetGuide/sample-new-client-form.pdf>

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<http://www.cdc.gov/hiv/resources/brochures/pets.htm>

Centers for Disease Control and Prevention

Guidelines for people with HIV/AIDS - preventing Infections from Pets

- ▶ You do not have to give up your pet.
- ▶ Although the risks are low, you can get an infection from pets or other animals.
- ▶ Several simple precautions are all you need to take with pets or other animals.
- ▶ HIV can not be spread by, or to, cats, dogs, birds, or other pets.

Should I keep my pets?

Yes. Most people with human immunodeficiency virus (HIV) can and should keep their pets. Owning a pet can be rewarding. Pets can help you feel psychologically and even physically better. For many people, pets are more than just animals — they are like members of the family. However, you should know the health risks of owning a pet or caring for animals. Animals may carry infections that can be harmful to you. Your decision to own or care for pets should be based on knowing what you need to do to protect yourself from these infections.



What kinds of infections could I get from an animal?

Animals can have cryptosporidiosis ("crypto"), toxoplasmosis ("toxo"), Mycobacterium avium complex ("MAC"), and other diseases. These diseases can give you problems like severe diarrhea, brain infections, and skin lesions. You can learn more about many of these diseases and how to prevent them from other brochures in this series. These are listed at the end of this brochure.

What can I do to protect myself from infections spread by animals?

- ▶ Always wash your hands well with soap and water after playing with or caring for animals. This is especially important before eating or handling food.

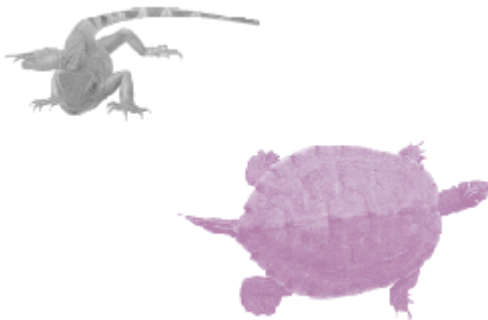


- ▶ Be careful about what your pet eats and drinks. Feed your pet only pet food or cook all meat thoroughly before giving it to your pet. Don't give your pet raw or undercooked meat. Don't let your pets drink from toilet bowls or get into garbage. Don't let your pets hunt or eat another animal's stool (droppings).
- ▶ Don't handle animals that have diarrhea. If the pet's diarrhea lasts for more than 1 or 2 days, have a friend or relative who does not have HIV take your pet to your veterinarian. Ask the veterinarian to check the pet for infections that may be the cause of diarrhea.
- ▶ Don't bring home an unhealthy pet. Don't get a pet that is younger than 6 months old — especially if it has diarrhea. If you are getting a pet from a pet store, animal breeder, or animal shelter (pound), check the sanitary conditions and license of these sources. If you are not sure about the animal's health, have it checked out by your veterinarian.

- ▶ Don't touch stray animals because you could get scratched or bitten. Stray animals can carry many infections.
- ▶ Don't ever touch the stool of any animal.
- ▶ Ask someone who is not infected with HIV and is not pregnant to change your cat's litter box daily. If you must clean the box yourself, wear vinyl or household cleaning gloves and immediately wash your hands well with soap and water right after changing the litter.



- ▶ Have your cat's nails clipped so it can't scratch you. Discuss other ways to prevent scratching with your veterinarian. If you do get scratched or bitten, immediately wash the wounds well with soap and water.*
- ▶ Don't let your pet lick your mouth or any open cuts or wounds you may have.
- ▶ Don't kiss your pet.
- ▶ Keep fleas off your pet.
- ▶ Avoid reptiles such as snakes, lizards, and turtles. If you touch any reptile, immediately wash your hands well with soap and water.



- ▶ Wear vinyl or household cleaning gloves when you clean aquariums or animal cages and wash your hands well right after you finish.
- ▶ Avoid exotic pets such as monkeys, and ferrets, or wild animals such as raccoons, lions, bats, and skunks.

*If you are bitten, you may need to seek medical advice.

I have a job that involves working with animals. Should I quit?

Jobs working with animals (such as jobs in pet stores, animal clinics, farms, and slaughterhouses) carry a risk for infections. Talk with your doctor about whether you should work with animals. People who work with animals should take these extra precautions:

- ▶ Follow your worksite's rules to stay safe and reduce any risk of infection. Use or wear personal protective gear, such as coveralls, boots, and gloves.
- ▶ Don't clean chicken coops or dig in areas where birds roost if histoplasmosis [his-to-plaz-MO-sis]



is found in the area.

- ▶ Don't touch young farm animals, especially if they have diarrhea.



Can someone with HIV give it to their pets?

No. HIV can not be spread to, from, or by cats, dogs, birds, or other pets. Many viruses cause diseases that are like AIDS, such as feline leukemia virus, or FeLV, in cats. These viruses cause illness only in a certain animal and cannot infect other animals or humans. For example, FeLV infects only cats. It does not infect humans or dogs.

Are there any tests a pet should have before I bring it home?

A pet should be in overall good health. You don't need special tests unless the animal has diarrhea or looks sick. If your pet looks sick, your veterinarian can help you choose the tests it needs.

What should I do when I visit friends or relatives who have animals?

When you visit anyone with pets, take the same precautions you would in your own home. Don't touch animals that may not be healthy. You may want to tell your friends and family about the need for these precautions before you plan any visits.

Should children with HIV handle pets?

The same precautions apply for children as for adults. However, children may want to snuggle more with their pets. Some pets, like cats, may bite or scratch to get away from children. Adults should be extra watchful and supervise an HIV-infected child's handwashing to prevent infections.

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http://www.cdc.gov/healthypets/bonemarrow_transplant.htm



Centers for Disease Control and Prevention

Organ Transplant Patients

Pet Safety Tips

Patients who have received organ transplants are more likely than most people to get diseases from animals. However, simple tips can be followed to reduce their risk of getting sick after contact with animals. These recommendations were originally made for bone marrow transplant patients, but they also may be useful for other organ transplant patients.

Although this section focuses on how to protect organ transplant patients from pet related diseases, many groups support the health benefits of pets (http://www.cdc.gov/healthypets/health_benefits.htm).



Keep Clean!

Wash your hands thoroughly with running water and soap after handling animals and their feces (stool). If possible, you should avoid direct contact with animal feces. Adults should supervise the hand washing of children.

Caring for Your Pet

If your pet is ill, seek veterinary care as soon as possible. Any cat or dog that has diarrhea should be checked by a veterinarian for infection with *Cryptosporidium*, *Giardia*, *Salmonella*, and *Campylobacter*.

Caring for Birds: Bird cage linings should be cleaned daily. Wear gloves whenever handling items contaminated with bird droppings. Routine screening of healthy birds for [zoonotic](#) diseases is not recommended.

Caring for Fish: Avoid cleaning fish tanks by yourself; ask a family member or friend for assistance. If this task cannot be avoided, you should wear disposable gloves during such activities. Wash your hands thoroughly with running water and soap afterwards.

Caring for Cats: If you have a cat try to have another person clean out litter on a regular (daily) basis. Do not place litter boxes in kitchens, dining rooms, or other areas where food is prepared and eaten. Keep your cat indoors. Avoid handling stray cats. Pet cats do not need to be tested for toxoplasmosis.



Feeding Your Pet

Just like people, pets can get diseases from eating contaminated food. By protecting your pet from foodborne diseases, you can protect your own health as well. Pets should be fed only high-quality commercial pet foods. If eggs, poultry, or meat products are given to your pet as supplements, they should be well-cooked. Any dairy products given to your pets should be pasteurized. Additionally, pets should be prevented from drinking toilet bowl water and from having access to garbage. Do not let your pet scavenge for food, hunt, or eat other animals' feces.

Getting A New Pet

When getting a new pet, avoid animals that are ill, stray, or young (cats and dogs less than 6 months old). These animals are more likely to carry diseases that can make you ill.

Animals to Avoid

The following animals are considered high-risk animals for immunocompromised people (including organ transplant patients):

- Reptiles, including lizards, snakes, and turtles.
- Baby chicks and ducklings.
- Exotic pets, including monkeys. Note: All persons should avoid direct contact with wild animals. Do not adopt wild animals as pets or bring them into your home.

Contact with these animals and their environments should be avoided by people with compromised immune systems. If you do touch these animals or their environment (their food or cage, for example), wash your hands thoroughly with running water and soap. Additionally, organ transplant patients should be extra cautious when visiting farms and when in contact with farm animals, including animals at petting zoos and fairs.

These pet safety guidelines for bone marrow transplant patients were developed from the following CDC resource: Guidelines for preventing opportunistic infections among hematopoietic stem cell transplant recipients. [Morbidity and Mortality Weekly Report](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4910a1.htm), October 20, 2000; 49(RR10):1-128.
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4910a1.htm>

<http://www.cdc.gov/healthypets/child.htm>

Centers for Disease Control and Prevention

Infants and Young Children - Animal Safety Tips

Infants and children less than 5 years old are more likely than most people to get diseases from animals. This is because young children often touch surfaces that may be contaminated with animal feces (stool), and young children like to put their hands in their mouths. Young children are less likely than others to wash their hands well. Objects such as pacifiers may fall to dirty surfaces and then be placed in an infant's mouth. For some animal diseases, young children are more likely than others to get very sick.

Tips to protect infants and young children from getting sick while handling animals:

- Children younger than 5 years old should be supervised while interacting with animals.
- Children should not be allowed to kiss pets or to put their hands or other objects into their mouths after handling animals.
- Childrens' hands should be washed thoroughly with running water and soap after contact with animals.
- Handwashing prior to breast feeding or preparation of formula is strongly recommended.



Although this section focuses on how to protect children from diseases from animals, many groups support the health benefits of animals for people, including children.

CDC recommends that infants and children under 5 years old avoid contact with the following animals:

- Reptiles (lizards, snakes, and turtles)
<http://www.cdc.gov/healthypets/animals/reptiles.htm>
- Amphibians (frogs, toads, newts, and salamanders)
<http://www.cdc.gov/healthypets/animals/aquarium.htm>
- Baby chicks and ducklings:
<http://www.cdc.gov/healthypets/animals/birds.htm>
- Petting zoos:
http://www.cdc.gov/healthypets/spotlight_an_exhbts.htm

Additionally, children less than 5 years old should be extra cautious when visiting farms and having direct contact with farm animals, including animals at petting zoos and fairs.

CDC Reports and Recommendations

Outbreaks and strategies related to farm visits and petting zoos. Outbreaks of escherichia coli O157:H7 infections among children associated with farm visits,

Pennsylvania and Washington, 2000. [Morbidity and Mortality Weekly Report](#), April 20, 2001; 50(15):293-7.

Outbreaks and recommendations related to chicks and ducklings. Salmonellosis associated with chicks and ducklings--Michigan and Missouri, Spring 1999. [Morbidity and Mortality Weekly Report](#) April 14, 2000; 49(14):297-9

Updated recommendations related to reptile-associated salmonellosis. [Morbidity and Mortality Weekly Report](#), December 12, 2003; 52(49):1206-1209.



<http://www.cdc.gov/healthypets/pregnant.htm>

Centers for Disease Control and Prevention Pregnant Women And Toxoplasmosis - Pet Safety Tips



Pregnant women need to be aware that [toxoplasmosis](http://www.cdc.gov/healthypets/diseases/toxoplasmosis.htm) (TOX-so-plaz-MO-sis) (<http://www.cdc.gov/healthypets/diseases/toxoplasmosis.htm>) can cause problems with pregnancy, including abortion. Toxoplasmosis is an infection caused by a parasite called *Toxoplasma gondii*. This parasite is carried by cats and is passed in their feces (stool). However, people are more likely to get toxoplasmosis from eating undercooked meat or gardening than from contact with pet cats. By following simple safety tips, pregnant women can reduce the risk of getting toxoplasmosis from cats.



- If you own a cat, have a non-pregnant person change the litter box every day. If there is no one else to change the litter box, wear gloves and wash hands with soap and running water after changing the litter.
- Risk may be reduced if the litter box is changed every day.
- Keep cats indoors.
- Avoid adopting or handling stray cats.
- Feed cats only canned or dried commercial cat food, never undercooked or raw meat.
- Do not bring a new cat into your house that might have been an outdoor cat or might have been fed raw meat.

[Toxoplasmosis: An important message for cat owners](#) - An informative brochure about the role cats play in toxoplasmosis and how you can protect you and your baby.

Preventing congenital toxoplasmosis. [Morbidity and Mortality Weekly Report](#), March 31, 2000; Vol 49(No RR02): 57-75.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4902a5.htm>

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Safe Pet Guidelines

A Comprehensive Guide for Immunocompromised Animal Guardians

*If I have further questions who
can I contact?*

Pets Are Wonderful Support
645 Harrison Street, Suite 100
San Francisco, CA 94107
www.pawssf.org
Phone: 415.979.9550
Email: info@pawssf.org

PETS ARE WONDERFUL!

Anyone who has ever lived with a companion animal knows that the unconditional love and acceptance we receive from them is unlike what we generally experience with our human relationships. This is especially important to us when our human contacts diminish through, for example, aging or isolation because of disease.

Animals can bring a unique sense of continuity, stability, and love to our lives; studies demonstrate that companion animals have a positive influence on the quality of life for the aging and ill. Please refer to the PAWS brochure *The Health Benefits of Companion Animals* for further information on this subject. However, if our immune system becomes suppressed through disease, age, or medical treatments, we become more vulnerable to infections, and may become fearful of contact with other living creatures, including our companion animals.

What Are Zoonoses?

Zoonoses (pronounced ZO-uh-NO-seez) are diseases that humans can catch from animals. This brochure will review general guidelines for minimizing your risk of catching a disease from a companion animal. If you are immunocompromised and have an animal companion or want to adopt one, carefully review these guidelines with your physician and your animal's veterinarian.

Am I at risk for catching a disease from my pet?

Current evidence supports the fact that pets pose a minimal health risk to their owners. An individual's risk may be slightly higher if he or she has a compromised immune system. This includes:

- > People with HIV/AIDS, especially if their CD4 count is low
- > People on chemotherapy or high doses of steroids
- > People who are aged
- > People born with congenital immune deficiencies
- > Pregnant women, and the children they carry
- > People who have received organ or bone marrow transplants
- > Children 5 years of age or younger

Zoonoses and HIV/AIDS

While there are a number of diseases we can catch from animals, there are only rare instances when people with HIV or AIDS have caught infections from their pets. The Centers for Disease Control and Prevention (CDC) also state that there is no evidence that dogs, cats, or any other non-primate animals can contract the Human Immunodeficiency Virus (HIV) or transmit it to people.

A healthy pet is a safe pet

General Guidelines For Your Animal

Follow these guidelines to help keep your pets healthy and as safe as possible. Keep in mind that a little preventive care can go a long way in maintaining your animal's health, and a healthy animal is less likely to pick up diseases and transmit them to you.

Having an appropriate healthy animal can provide companionship and health benefits. Zoonotic risk, although small, can be minimized by following good hygiene and the safe pet guidelines. If you have questions, always talk to your veterinarian and physician.

DIET

- > Feed your pet a high quality commercial diet that is designed for your animal and his or her stage of life.
- > Don't feed your animal raw or undercooked meats or unpasteurized milk. Keep in mind that microwaving may not heat the meat sufficiently to kill organisms in it.
- > Prevent your animal from eating his or her own or another animal's or human feces.
- > Provide plenty of clean, fresh water. Don't let your animal drink from the toilet or standing water outside.
- > Prevent your animal from raiding the trash.
- > Prevent your animal from hunting or eating other animals.
- > Keep cats indoors so they can't catch diseases from mice, birds or other animals. If your cat does go outdoors, consider placing two bells on the collar to help warn potential prey.

VETERINARY CARE

- > Have all new animals examined by a veterinarian.

- > Take your animals to the veterinarian for a check up at least once each year and whenever your animal develops diarrhea or becomes ill.
- > Keep your pet up to date on vaccines (shots). Consult with your veterinarian about the best protocol for your area.
- > Keep your pet free of worms and other parasites. Ask your veterinarian about the best testing and treatment protocol for your area.
- > With the guidance of your veterinarian, employ a strategic deworming program.
- > Have your cat (particularly a new cat or an outdoor cat) checked for the Feline Leukemia Virus (FeLV) and Feline Immunodeficiency Virus (FIV), because while not transmittable to humans, these diseases suppress the cat's immune system, making him or her more susceptible to diseases which could be passed on to you.

GROOMING/FLEA CONTROL

- > Have your animal bathed, brushed, and combed as needed to keep the skin and coat healthy.
- > Keep your animal's toenails trimmed to minimize the risk of your being scratched. If necessary, ask your vet about rubber caps that can be placed on your cat's nails as an alternative to declawing.
- > Use good flea control. Consult with your veterinarian about the best available products.
- > Have your pet examined if there is any hair loss.
- > A clean environment is important. Keep your pet's living and feeding areas clean. Wash your pet's bedding regularly.

The benefits of animal ownership far outweigh the risks

ADOPTING A NEW ANIMAL

Adopting a new animal companion is always exciting, but keep in mind new pets, especially puppies and kittens, present more of a risk. If you are going to adopt a new pet, an adult animal is safer. Consult with your veterinarian and physician before adopting a new animal. Your veterinarian may recommend some tests for parasites and other diseases on a new animal. It is best not to take a new animal into your home until you know that he or she is healthy.

ANIMALS TO AVOID

Unfortunately, some animals simply present too much risk to immunosuppressed people and should be avoided altogether: stray animals, animals with diarrhea, reptiles (turtles, lizards, and snakes) and amphibians, "exotic" pets (such as potbellied pigs, sugar gliders and prairie dogs), other wild animals and some birds (including pigeons, baby chicks and ducklings), farm animals, and non-human primates (monkeys). Non-human primates carry the greatest risk because of their close genetic relationship to humans and should not be pets under any circumstances. It is also good to remember that the humans in the household pose many risks to the animal as well.

FIRST AID FOR BITES/SCRATCHES

- > Rinse a bite wound or scratch right away with plenty of running water.
- > Wash the area with a mild soap or with a tamed iodine solution such as Betadine® solution that has been diluted with water.
- > Contact your physician.

HYGIENE

- > Wash your hands frequently, especially before eating or smoking.
- > Avoid contact with your pet's bodily fluids such as vomit, feces, urine or saliva.
- > In the event of an accident, clean up the mess with a disinfectant (an ounce of bleach in a quart of water works nicely to kill many infectious organisms) then wash your hands thoroughly. Better yet, wear gloves, or have someone not at risk clean it up.
- > Don't let your pet lick a wound on your face or body.
- > Never walk barefoot or contact the soil where feces in the soil or sand is likely to be found.
- > Control rodent infestations.

"Until one has loved an animal, a part of one's soul remains unawakened."

- Anatole France



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About Dogs

Can dog diseases make me sick?

Most healthy dogs carry little or no health risk to people. Some dogs, particularly puppies, however, do carry some diseases that could be harmful to someone at higher risk. Parasites which dogs can transmit to people include roundworms, hookworms, *Cryptosporidium* and *Giardia*. In rare instances, dogs can also transmit bacteria such as *Salmonella* and *Campylobacter*. These parasites and bacteria are most often associated with puppies or with adult dogs that live in unsanitary environments. Any new dog or any dog having diarrhea should have his or her stools tested for these infections by a veterinarian.

Can I reduce the risk of catching a disease from my dog?

Yes. PAWS recommends that people at risk only get dogs older than nine months of age. Puppies are more likely to harbor infections than healthy adult dogs. Following the guidelines listed earlier will help to reduce your risk of catching any infections your dog may have.

My dog bit someone with AIDS. Can I get AIDS from my dog now?

No. HIV is a very fragile virus and cannot be spread to animals. There is no risk of catching HIV or AIDS from a pet.

What could a person with a compromised immune system catch from a dog bite?

The biggest concern with dog bites is the normal bacteria that is on one's own skin get pushed into deeper tissue, which could more easily cause a serious infection. Any wound that breaks the skin requires first aid and, if necessary, medical care. Please refer to the *General Guidelines* for steps to be taken.

"My little dog – a heartbeat at my feet."

- Edith Wharton

About Cats

Can I reduce the risk of catching a disease from my cat?

Yes. Most cats pose a minimal risk for transmitting a disease. Indoor cats have the lowest risk of carrying a disease that can spread to a person. Following the guidelines in this brochure will help you reduce your risk of contracting a disease from a cat. If you are at an increased risk, you should review these recommendations with your physician and your veterinarian.

CAT SCRATCH DISEASE & BACILLARY ANGIOMATOSIS

What is Cat Scratch Disease?

Cat Scratch Disease (CSD) is a bacterial infection caused by *Bartonella henselae*. The infection usually causes fever, fatigue, and swollen lymph nodes. Most cat scratches do not develop into CSD.

What is Bacillary Angiomatosis?

Bacillary Angiomatosis (BA) is a rare complication of *B. henselae* infection, which usually occurs in people with HIV/AIDS. Patients with BA may have skin lesions which sometimes resemble *Kaposi's Sarcoma* (KS). BA can also affect internal organs such as the liver or spleen.

What is Bartonella?

Both CSD and BA appear to be caused by the same bacteria, *Bartonella henselae*. Human *Bartonella* diseases are the most common zoonotic disease in the U.S. today.

How is my cat affected by this organism?

Cats that carry the bacteria are generally not ill and show no signs of infection. Recent research shows that cats acquire the *Bartonella* organism from fleas.

How is this organism transmitted to people?

Cats may transmit *Bartonella* to people by scratches or possibly bites. Fleas may also be involved with transmission to people. Kittens are more likely to be associated with transmission of CSD or BA to humans than are adult cats.

Should I have my cat tested?

Although tests are available to determine if your cat has been exposed to *Bartonella*, testing is not recommended because test results can be confusing and wouldn't change recommendations.

Is it treatable in people?

It is extremely important to see a doctor if you think you may have BA. The condition is very treatable (and curable). CSD in people with healthy immune systems is usually benign. If you are concerned about CSD, consult your doctor. If you are scratched or bitten by a cat and develop a wound that will not heal, a fever, unusual skin lesions or are otherwise ill from unknown causes, you should let your doctor know that you were scratched or bitten.

Can I prevent myself from getting this disease?

Following the *General Guidelines* at the beginning of this brochure will reduce your risk of getting CSD or BA from your cat.

How can I reduce my risk of cat scratch disease and other infections?

- > Follow the *General Guidelines* listed earlier.
- > Minimize contact with kittens.
- > Wash your hands after handling a cat.
- > Wash all bites or scratches immediately with soap and water. If you are bitten contact your doctor.
- > Discourage your cat from scratching or biting you. Avoid rough play.
- > Keep your cat's nails trimmed short. If your cat tends to scratch frequently, talk to your veterinarian about behavior modification or nail caps for cats to help minimize scratches.
- > Don't allow a cat to lick open wounds on your body.

RINGWORM

What is ringworm?

Ringworm is not actually a worm. It is the common name for a group of fungal infections that affect the skin of a large variety of animals, including cats and people.

How will I know if my cat is carrying ringworm?

Most cats with ringworm will lose hair and have crusty skin where the infection is. This can look very similar to many other skin conditions, so contact your veterinarian if you are concerned that your cat may have ringworm. Some cats, particularly certain purebred cats, can carry ringworm

without showing any symptoms. Ask your veterinarian if your cat may be at risk.

Can I catch ringworm from my cat?

The rate of transmission is low, but anyone, including someone with a healthy immune system, can potentially contract ringworm from a cat (or other animal) that is carrying the disease.

What if I catch ringworm?

Ringworm is treatable. Contact your doctor if you are concerned about possible exposure. There is no evidence that ringworm is more severe or more common in people with compromised immune systems.

TOXOPLASMOSIS

What is toxoplasmosis?

Toxoplasmosis is an infection caused by the single-celled parasite, *Toxoplasma gondii*. It can infect most mammals (including humans) and some birds.

Why are cats blamed for toxoplasmosis?

Cats are the only species of animal to shed the infectious stage in their feces. Other animals, however, can disseminate *Toxoplasma gondii* if their infected meat is eaten without proper cooking. Humans most commonly contract *toxoplasmosis* by eating undercooked infected meat.

How do cats get toxoplasmosis?

Cats acquire *toxoplasmosis* by eating rodents, undercooked meat, the feces of other cats, or contaminated soil. Cats can acquire the infection easily if they are allowed to hunt or are fed raw or undercooked meat; as many as 90% of cats are

"I love cats because I enjoy my home; and

exposed to *Toxoplasma gondii* during their lives.

How will I know if my cat has toxoplasmosis?

Most infected cats show no symptoms of the disease. Sometimes there is a short episode of diarrhea, pneumonia, or ongoing eye problems or problems of the nervous system. Healthy cats pass the infectious stage in their feces only during the first two weeks after they are exposed. After that time, the cat's immune system will usually prevent passing of the organism.

Should I test my cat for toxoplasmosis?

No. Although a test is available to measure a cat's antibody response to *toxoplasmosis*, testing cats is not recommended because the test results would not change the recommendations.

How do I prevent my cat from getting it?

To minimize your cat's chance of infection, follow the *General Guidelines* listed earlier.

Should I worry about getting toxoplasmosis from my cat?

Humans will only rarely acquire toxoplasmosis from an infected cat. More commonly, people are exposed by eating undercooked meat and unwashed fruits or vegetables, congenitally (from an infected mother to her fetus through the placenta), or by accidental ingestion of contaminated soil when gardening. About 15-50% of the U.S. population (depending on where you live) has already been exposed.

What happens if I get toxoplasmosis?

A healthy adult person is unlikely to get sick when exposed to *Toxoplasma gondii*; most commonly they will only exhibit mild flu-like symptoms. If you are pregnant, however, and if and only if it is your first exposure, infection can lead to birth defects and possible miscarriage. If you have a compromised immune system due to conditions such as HIV/AIDS or chemotherapy, *toxoplasmosis* can be life threatening, often leading to central nervous system disorders. Most cases of *toxoplasmosis* in immunocompromised people are due to a reactivation of a previous infection and not a new infection.

Should I be tested for exposure to toxoplasmosis?

A test is available to determine if you have been exposed to *Toxoplasma gondii*. This test is currently recommended for all immunocompromised people. Consult your doctor if you are concerned.

If you have a compromised immune system:

1. If you test positive, your doctor may put you on therapy.
2. If you test negative, be sure to follow the *General Guidelines* listed earlier.

If you are pregnant:

1. If you test positive, you have built up antibodies to protect you and the fetus from a new infection.
2. If you test negative and you become infected with *Toxoplasma gondii* during your pregnancy, you risk having a baby with birth defects, so be sure to follow the *Safe Litter Box Guidelines* listed on page nine.

How can I reduce my risk of contracting toxoplasmosis?

- > Use caution around the litter box (see *Safe Litter Box Guidelines* on page nine).
- > Cook all meats well (This means cooking to an internal meat temperature of 165°F). Microwaving may not always cook meat well enough.
- > Wash hands and food-preparation surfaces thoroughly after contacting raw meats.
- > Wash vegetables well.
- > When gardening, wear gloves and avoid touching your mouth (don't smoke or drink).

PLAGUE

What is plague?

Plague is a rare bacterial disease caused by the bacteria *Yersinia pestis*. It is found most commonly in the southwestern U.S. (for example, Colorado and New Mexico).

Do cats carry the plague bacteria?

Yes, in very rare cases, cats do carry *Yersinia pestis*, but most often fleas living on rodents (mice and rats) are the source of infection for humans and cats.

How do I keep my cat from catching plague?

Keep your cat indoors at all times and use good flea control measures in your home and on your cat. Eliminate rats or mice in your home.

How would I know if my cat is infected with plague?

Cats typically will be very tired and have swollen lymph nodes and a fever. Sometimes they may also have lung problems.

Can I catch plague from my cat?

Most human plague infections occur when the person is bitten by an infected flea from a mouse or rat. If your cat becomes infected, however, it is possible for you to also become infected from your cat.

How do I protect myself from catching plague?

Don't handle or pickup dead animals from your home, work or recreation areas. Treat your pets with flea control products regularly.

What happens if I get plague?

People usually show symptoms two to six days after being infected. The initial symptoms usually include: fever, chills, weakness, swollen and painful lymph nodes, headaches, and occasionally respiratory signs may also be present initially. Plague can be cured, so consult with your doctor if you feel you may have been exposed to plague.

OTHER ZOOBOTIC DISEASES OF CATS

What other diseases can I catch from contact with my cat's feces?

Cats can occasionally be the source for a variety of intestinal ailments including some bacterial infections (*Salmonella* and *Campylobacter*) and some intestinal parasites (*Giardia*, *Cryptosporidium*, hookworms, and roundworms.) These diseases can be spread to people by direct contact with the feces of an infected cat, or by contact with soil that has been contaminated by the feces of an infected cat. Many animals other than cats also can carry these infections. *Salmonella* and *Campylobacter*

are most often spread through undercooked meat or improperly prepared food.

How will I know if my cat is carrying one of these diseases?

Cats that are carrying one of these infections will sometimes, but not always, have diarrhea. Cats at highest risk for one of these infections are stray cats, young kittens, cats recently adopted from an animal shelter, or cats that are immunocompromised themselves.

What will happen if I catch one of these diseases?

This group of bacterial and parasitic infections will usually produce only temporary symptoms in someone with a healthy immune system. For people who are immunocompromised, however, these infections can be life-threatening, often resulting in prolonged diarrhea.

Feline Leukemia Virus (FeLV) and Feline Immunodeficiency Virus (FIV)

Both of these viruses are different from the human AIDS virus (HIV). Both FeLV and FIV are contagious between cats, but neither of them can infect humans, nor can the human virus infect cats.

These diseases do, however, suppress the cat's immune system, making him or her more susceptible to diseases which could be passed on to you. If you are immunocompromised, it is best not to keep a cat with FeLV or FIV. If you do keep a cat with one of these diseases, be extra careful about following the *General Guidelines* listed earlier.

SAFE LITTER BOX GUIDELINES

- > Keep the box away from the kitchen and eating areas.
- > If possible, have someone who is not at risk change the litter box. Otherwise, change the litter box daily using disposable gloves. It takes the *Toxoplasma* parasite at least 24 hours to become infectious.
- > Use disposable plastic liners and change them each time you change the litter.
- > Don't dump the litter! If inhaled, the dust could possibly infect you. Gently seal the plastic liner with a twist tie and place in a plastic garbage bag for disposal.
- > Disinfect the litter box at least once a month by filling it with boiling water and letting it stand for ten minutes. This will kill the *Toxoplasma* organism, which can normally persist in the environment. Do not use disinfectants like Lysol as it is toxic to young cats.
- > Always wash your hands with soap and warm water after cleaning the litter box, even if you wear gloves.

"An animal's eyes have the power to speak a great language."

- Martin Buber



"A bird does not sing because it has an answer. It sings because it has a song."

- Chinese Proverb

About Birds

Can bird diseases make me sick?

Most healthy pet birds pose little or no health risk to humans, but some bird diseases can cause illness in people. *Mycobacterium Avium Complex* (MAC), *psittacosis* (parrot fever), *cryptococcosis* (*Cryptococcus*) and *salmonellosis* (*Salmonella*) are the primary diseases associated with pet birds that can potentially transmit to humans. *Allergic alveolitis* can also develop in sensitive humans. Some birds can carry the intestinal parasite *Giardia*. It is unlikely that you will acquire an infection from your bird, but caution is always advised, especially for higher risk groups.

What are the chances that my bird has one of these infections?

That depends on the species of bird, its source, age, and general health status. Newly adopted birds and birds undergoing other stresses are always more risky. A veterinarian experienced in avian medicine should be consulted to evaluate your particular situation.

How can I tell if my bird has an infection?

There are no specific symptoms characteristic of each disease. If your bird stops eating, loses weight, has vomiting or diarrhea, appears fluffed up and chilled, or has any other behavioral change, then your bird should be seen by a veterinarian immediately.

How do I get these diseases from my bird?

These diseases can be transmitted by

direct contact with stool and nasal discharge or by breathing dried, powdered droppings.

Can I acquire these diseases from sources other than my bird?

Yes. In fact, it is much more common to acquire these diseases from the environment, undercooked or contaminated foods, or in some cases, from other people. Complete avoidance of all zoonoses is impossible.

What happens if I get any of these diseases?

MAC (*Mycobacterium Avium Complex*, also known as *Atypical Mycobacterium*, a disease similar to tuberculosis) is most commonly acquired from the environment, can cause a variety of symptoms (including night sweats, weight loss, abdominal pain, fatigue, diarrhea and anemia) and is suspected to be involved with AIDS wasting syndrome. MAC is a lifelong infection that can be reactivated as the immune system deteriorates. There are now drugs that can help control human infections of MAC.

***Psittacosis* (parrot fever)** produces flu-like symptoms and is usually accompanied by a dry, nonproductive cough and fever. *Psittacosis* can be acquired multiple times. People catch this infection by breathing dried secretions from infected birds. To date, there are no reported cases of *psittacosis* in people with HIV/AIDS. Those at greatest risk are pet bird owners, pet shop employees, veterinarians and employees in poultry processing plants.

Salmonella infections cause fever and gastrointestinal symptoms including stomach cramps and diarrhea. Sometimes the symptoms are so severe that medical treatment is required. *Salmonella* infections can occur repeatedly and an infected person can become a chronic carrier without showing any symptoms.

Cryptococcosis is a fungal infection that rarely causes any signs of illness in healthy individuals, but for those that are immunocompromised, severe brain and spinal cord disease can occur. The disease is spread by breathing the droppings of wild birds including pigeons. Dogs and cats can also contract *cryptococcosis* from birds, but they cannot transmit it to humans. Those with compromised immune systems should avoid areas where wild birds congregate.

Allergic alveolitis produces coughing and difficulty breathing. *Allergic alveolitis* is a progressive respiratory disease and can be alleviated by total avoidance of bird dander, feathers and in some cases poultry products.

If you are diagnosed with any of these diseases, your doctor will outline a treatment plan. Once again, it is important to emphasize that the likelihood of acquiring these infections from your pet bird is quite low.

Are there other bird-associated illnesses?

Yes, but the above five diseases are by far the most common. Good sanitation and keeping your bird healthy is the best prevention for most infectious diseases.

Can a pet bird catch bird flu?

As of 2005, the H5N1 strain of avian influenza (often called bird flu) was found only in wild birds (especially wild ducks) and in farmed chickens. This virus is found mostly in Asia, although it is possible that it will eventually infect wild birds in the U.S. If bird flu comes to the U.S., the best way to protect your pet bird is to prevent him or her from coming in contact with any wild birds or their droppings. In general, it is a good idea for any person to avoid unnecessary contact with wild birds and farmed birds.

How do I prevent my bird from getting these diseases?

- > Never expose your bird to other birds that have not been tested for psittacosis and quarantined for 45 days. It is especially important to avoid contact with pigeons and other wild birds.
- > Avoid situations in which your bird will have casual contact with other birds (such as going to the pet store for wing clips and nail trims). Ideally, birds should be cared for at home rather than in boarding facilities.
- > All sick birds should be seen by a veterinarian as soon as possible.

How can I prevent myself from getting these diseases?

- > Good sanitation and hygiene. See *General Guidelines* listed earlier.
- > Clean your bird's cage liner daily.
- > If you are in a higher risk category, use a surgical mask when cleaning your bird's cage.
- > Wash your hands after contact with birds.

- > Avoid contact with wild birds, including pigeons.
- > Avoid farmed birds and baby ducklings or chicks.

How can I adopt a safe bird?

- > In accordance with the 1992 Wild Bird Conservation Act, PAWS recommends only buying birds from a reputable breeder. Even though importation of wild birds for the pet trade has been illegal in the United States since 1992, these illegally imported birds are commonly sold at flea markets and by street vendors for a much reduced price. Illegally imported birds have a higher risk for carrying infectious diseases.
- > Do not buy birds that have been housed with imported birds.
- > Avoid pet store birds and any bird that appears sick.
- > Always set up a post-adoption veterinary visit to have your bird examined and to get all of your questions answered.

Should my bird be tested for any of these diseases?

Since each situation is different, your veterinarian will be better able to make recommendations for your particular situation. In general, we do not recommend routine screening for MAC or *Salmonella* because even some birds carrying these diseases will have a negative test result. In general, all newly acquired birds in the parrot family should be tested for *psittacosis*, but it is important to keep in mind that no single test or combination thereof can definitively rule out *psittacosis* in any bird or human.

How do I locate a veterinarian who has experience with birds?

Contact your state or local veterinary medical association, or the Association for Avian Veterinarians (AAV) at PO Box 811720, Boca Raton, FL 33481, call 561.393.8901, or on the web at www.aav.org. AAV also publishes a great brochure on psittacosis.

About Aquarium Fish and Amphibians (frogs, toads and salamanders)

What disease can I catch from fish?

Aquarium fish can occasionally be the source of infectious diseases. Mycobacterial infections (a type of tuberculosis) can be transmitted by aquarium fish and some skin infections can be spread by contact with infected aquarium water. People can catch *Salmonella* from contact with infected amphibians and aquarium water.

What can I do to reduce my risk if I decide to keep aquarium fish or amphibians?

Wear gloves when cleaning an aquarium or when handling fish or amphibians. Fish suspected of having mycobacterium or any fish showing unusual lumps should be removed from the tank, and the aquarium should be disinfected before new fish are introduced. Follow the *General Guidelines* listed earlier.

About Reptiles

(snakes, turtles, and lizards, including iguanas)

A word of caution about reptiles

We do not recommend that people with compromised immune systems keep or handle reptiles. Salmonella infection can be transmitted by almost any reptile. Many reptiles are carriers of *Salmonella* without showing any signs of illness. Because reptiles have a tendency to lie in or move through their own feces, these bacteria can be found anywhere (and everywhere) on the animal's body. Treating the reptile with antibiotics is not a reliable method to rid the animal of *Salmonella*, and is not recommended.

What can I do to reduce my risk if I decide to keep a reptile in my home?

Use gloves and a face mask when handling or cleaning these animals or their habitat. Better yet, have someone not at risk do the cleaning. Never wash your reptile in your kitchen sink or bathtub. Thoroughly wash your hands after handling a reptile. Feed a reptile a commercial diet and avoid feeding raw meat and eggs to reduce your animal's risk of acquiring *Salmonella*. If possible, dead prey rather than live should be offered to your reptile.

About Ferrets

Zoonoses transmitted by pet ferrets are rare. Intestinal parasites are common in young ferrets and can potentially be spread to people. PAWS does not recommend that people at risk come in contact with an immature ferret. Ferrets are also

susceptible to human influenza and can easily pass it back to the human. Following the *General Guidelines* will help to reduce your risk of acquiring any infections your ferret may have.

About Horses

Zoonoses transmitted by horses are rare. Intestinal parasites and infections such as *Salmonella* can potentially be spread to people. PAWS does not recommend that people at risk come in contact with an immature horse, a horse with diarrhea, or areas where horses are raised. Most adult horses kept in a clean environment pose little or no risk for transmitting a disease.

About Rabbits and Rodents

Zoonoses transmitted by pet rabbits and rodents (rats, mice, guinea pigs, hamsters, or gerbils) are rare. The most common problems usually stem from reactions to rabbit scratches, or infections from rabbit or rodent bites. The *Pasteurella* bacteria carried by most rabbits may infect scratches or bite wounds. Scratches and bite wounds should be immediately washed and disinfected. Some external parasites of the rabbit, including fur mites and ringworm (a type of fungal infection), may be transmitted to humans. *Tuleriemia* and rabbit hemorrhagic fever have occasionally been associated with humans also.

Guinea pigs, mice, and rats can occasionally be the source for a variety of intestinal ailments, including some bacterial infections (*Salmonella* and *Campylobacter*) and some intestinal parasites (*Giardia* or *Cryptosporidium*). These diseases can be

ask no questions and they pass no criticisms.”

- George Elliot

spread to people by direct contact with the feces of an infected animal or by contact with soil that has been contaminated by the feces of an infected animal. *Lymphocytic choriomeningitis* (LCMV) is a potentially serious disease humans can catch from infected mice and hamsters. Pet mice and hamsters contract LCMV from other animals in a pet store or from exposure to wild mice in your home.

How can I reduce the risk of catching a disease from my rabbit or rodent?

Do not feed your animal raw eggs or raw meat. Be diligent about washing your hands after handling your animal. Use disposable gloves when cleaning your animal's cage, or better yet, have someone who is not at risk care for the animal. Follow the *General Guidelines* listed earlier. If you are adopting a new rabbit or rodent, be sure that the animal is healthy and has not recently been exposed to any ill rabbits or rodents.

About Rabies

What is rabies?

Rabies is a virus that can infect the brain of some animals, including dogs, cats, and ferrets. In rare situations, it can also infect people.

Can I get rabies from my pet?

In the U.S., human rabies cases are usually picked up from bats, raccoons, skunks, foxes and coyotes—or from bites from dogs in other countries. It has been more than 30 years since someone caught rabies from a dog or cat in the U.S.

How can I protect my pet from catching rabies?

Rabies vaccinations (rabies shots) are available for dogs, cats and ferrets to keep them from catching rabies. Ask your veterinarian about the best protocol for rabies vaccination. If possible, keep your cat indoors so that he or she will not come into contact with other animals that can carry rabies. If your dog or cat is bitten by a wild or stray animal, call your veterinarian.

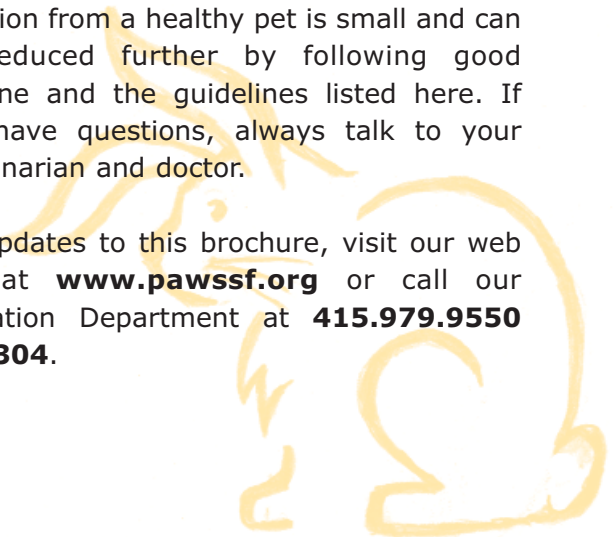
How can I protect myself from catching rabies?

Prevent bats from entering your home, and if one does enter your home, call a professional service, or local city animal control, to have it removed. Consult with your doctor right away if you are ever bitten by any animal or have had a bat in your home. Many bat bites go unnoticed because the wound is small and painless.

Remember

Having an appropriate healthy animal companion can provide companionship and health benefits. The risk of picking up an infection from a healthy pet is small and can be reduced further by following good hygiene and the guidelines listed here. If you have questions, always talk to your veterinarian and doctor.

For updates to this brochure, visit our web site at **www.pawssf.org** or call our Education Department at **415.979.9550 ext. 304**.



CONTACTS

If I have further questions who can I contact?

Pets Are Wonderful Support
645 Harrison Street, Suite 100
San Francisco, CA 94107
www.pawssf.org
Phone: 415.979.9550
Email: info@pawssf.org

Additional information on specific zoonotic diseases can be found at National Center for Infectious Diseases: Health Pets Healthy People at:

www.cdc.gov/healthypets

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CREDITS

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Pets Are Wonderful Support (PAWS) is a volunteer-based organization that provides for the comprehensive needs of companion animals for low-income persons with HIV/AIDS and other disabling illnesses. By providing these essential support services, educating the larger community on the benefits of the human-animal bond, and advocating for the rights of disabled individuals to keep service animals, PAWS improves the health and well-being of disabled individuals and the animals in their lives.

This brochure was funded by the Banfield Foundation.

Who needs the information

Your clients — and members of the pet's household — who are or may become immunocompromised:

- Pregnant women
- Elderly persons
- Infants/neonates
- People receiving chemotherapy, transplant patients, or those on immunosuppressive medications (including prolonged courses of corticosteroids)
- Persons with diabetes mellitus, chronic renal failure, or other chronic conditions
- Persons with HIV or AIDS
- Splenectomy patients
- Those with cirrhosis of the liver or advanced-stage alcoholism



Potentially, someone in every household with a pet may become immunocompromised at some point during a pet's lifetime.



Identifying clients who may need this information

Some clients might not realize they may be immunocompromised. Questions on your New Client Form can help you determine if the pet lives with an immunocompromised individual, and the extent of information you need to provide about zoonotic disease. These questions can help a client feel more comfortable approaching you now and in the future because you are being inclusive about everyone in the household.

A sample New Client Form is available at the PAWS website at www.pawssf.org

prevention – existing pets

A client informs you that his elderly mother just moved into his home... A woman undergoing chemotherapy for treatment of cancer... Young children, pregnant women, those with HIV...

All are scenarios that you may encounter during a regular wellness exam for the pets of these individuals. These individuals should take precautions to keep their pets healthy. Healthy pets pose a minimal risk of transmitting a zoonotic disease, especially, when appropriate preventative measures are followed.

It is important to remind clients of the following preventative measures at each and every visit:

- Feed your pet a high quality commercial diet. Avoid feeding raw or undercooked meat or unpasteurized milk.
- Good flea control is essential; be sure to use a monthly flea preventative. Regular screening for intestinal parasite is also recommended.
- Regular and frequent handwashing is extremely important
- Prevent pets from drinking from the toilet or eating feces
- Keep pet litter boxes, dishes and beds as clean as possible. Litter boxes should be cleaned daily, ideally by an immunocompetent person. If the immunocompromised person is to be cleaning a litter box, they should wear latex gloves and wash their hands thoroughly afterwards.

For additional information, see the PAWS brochure entitled "Safe Pet Guidelines"

additional resources

The PAWS website www.pawssf.org contains education sheets such as: Safe Pet Guidelines, Your Cat and Your Health, Your Bird and Your Health, Pets and the Immunocompromised Patient (available at PAWS in brochure form for \$1). Also on the website are a sample new client form and a full reference list.

The Centers for Disease Control and Prevention have several statements and brochures available at their Healthy Pets Healthy People site: www.cdc.gov/healthypets/.

CDC brochures: Preventing Infections from Pets: A Guide for People with HIV Infection... (also available in Spanish) www.cdc.gov/hiv/pubs/brochure/oi_pets.htm.

Safe guidelines for pet reptiles (Reptile Rules www.doh.wa.gov/here/CRA; Reptile Handling Steps www.cdc.gov/healthypets/pdf/reptile.pdf).



The Immunocompromised Household: Informing Clients about Pets and Zoonotic Disease

a guide for veterinarians



paws

Pets Are Wonderful Support

DEDICATED TO PRESERVING THE HUMAN-ANIMAL BOND

PAWS
645 Harrison St, Suite 100
San Francisco, CA 94107
<http://www.pawssf.org>

Why it's our job

We give information about zoonoses to our clients all the time. Think about the family with kids whose dog you've just diagnosed with ringworm.

While veterinarians and human health care providers share responsibility for providing information about zoonoses, veterinarians are often the educational resource for clients about their pet's health and any zoonotic risks that pets may pose.

The love and companionship pets provide is invaluable and can help improve quality of life and reduce stress in people who have medical conditions. Further, having a pet can actually improve one's health.

A brochure on the health benefits of the human-animal bond is available at the PAWS website at www.pawssf.org

The risk of zoonotic disease transmission from pets is minimal, especially when clients take extra precautions to ensure a healthy household.

While it's not our job to give medical advice to clients about their own health, we can ensure the healthiest pet possible and suggest ways that people can reduce the risk of acquiring a zoonotic disease, especially in a household with an immunocompromised member.

Incentive – why should we reach out?

- **Client satisfaction** leads to increased compliance, healthier pets, and client retention.
- **Veterinarian's Oath:** our scientific knowledge and skills benefit society through the protection of animal health and the promotion of public health.
- **Liability:** failure to provide information about zoonoses constitutes a disservice to patients and clients, and practitioners may be liable.

In the exam room – client/doctor communication

The exam room offers a safe and confidential place to express their concerns. An extra few questions during the appointment goes a long way (and won't take much additional time).

- Review their New Client Form to identify clients who may be immunocompromised.

- Ask about other family members; be inclusive.

- Offer the service verbally during visits: "If anyone in your household is immunocompromised, we can set up a preventive program to decrease the risk of Fluffy transmitting any zoonotic diseases to your family member." (If the answer is no, you have made yourself available as a resource if needed later on.)

- You can also include the client brochures mentioned on the back of this brochure in your new puppy/kitten well-packets.

Respecting patient/client confidentiality

-Do not ask what specific condition a client or household member has.

-Educate staff to respect confidentiality and client/patient privacy.

-Whether a client self-discloses or not, be sure to maintain client/patient privacy in your clinic and in your medical records.

-Document in patient's file: "discussed prevention of zoonotic disease re: concern about immunocompromised family member", "gave Safe Pet Guidelines" or wording to this effect.

-As a legal document, the medical record should contain specific information about doctor client communication. You may want to seek legal advice from your clinic's attorney about specific wording you should use.

How to listen and what to say

- Use wording that the client can understand
- Address clients using their name
- Use eye contact and appropriate gestures.
- Let clients finish their introductory remarks.
- Solicit client understanding and participation.
- Ask clients if they have any questions
- A follow up phone call a few days later is always appreciated

Use empathy

Empathy is vital to client understanding, satisfaction and compliance. In a recent study, only 7% of veterinarians to client communication contained empathetic statements. Using empathetic statements acknowledges a client's emotions and feelings while maintaining objectivity. Use statements such as:

- "I see this is distressing for you"
- "It sounds like you ..."
- "This must make you feel..."

A teamwork approach

- **Community liaison**

-Be willing to talk to your client's health care provider(s) if needed.

-Discuss with your colleagues different ways to approach these situations.

-Consider working with local nonprofit groups such as animal welfare organizations

- **Staff education**

-Remind staff to respect client/patient privacy at staff meetings.

-Educate staff on reducing the risk of acquiring zoonotic disease at the clinic.

-Lead by example: model good hygiene, be inclusive and approachable to staff and clients

SAMPLE NEW CLIENT REGISTRATION FORM

Client Information:

First Name _____ Last Name _____
Street/PO Box _____
City _____ State _____ Zip _____
Home Phone _____ Cell Phone _____ Work Phone _____
Spouse/Partner/Co-owner _____ Work/Cell Phone _____
Best Daytime Emergency Phone _____
Email Address _____

Patient (Pet) Information:

Pet's Name _____ Cat _____ Dog _____ Other _____
Breed _____ Male _____ Female _____ Neutered/Spayed? YES NO
Age _____ Birthday _____ Color _____
Diet _____ Supplements _____
Describe any exercise routine your pet is on _____
Indoor/outdoor pet (or both)? _____ If indoors, does your pet **ever** go outside? _____
Date of last vaccination _____ Which vaccines were given? _____
Ever dewormed? _____ Date last dewormed _____ Product used _____
Travel history outside the greater Bay Area? List where and dates _____

List all current medications and frequency _____

Past surgeries (please list dates & procedures) _____
Any allergies (please list) _____
Adverse reaction to any medications (if yes, list) _____
What do you use for flea control? _____ How often? _____
On heartworm preventive? _____ Product used _____ How often? _____
What problem bothers your pet the most? _____
What health problem(s) concern you the most? _____

Other Household Information:

Number of people in household _____
Number of other pets in household _____ List species and ages _____

What chemicals are routinely used in the yard or house? _____

Everyone with pets should be aware that some infectious diseases can be transmitted from animals to people (zoonoses). An immunocompromised person is at increased risk of acquiring certain zoonotic diseases from animals. People can be immunocompromised due to the following: chronic/infectious disease, organ transplant, pregnancy, radiation or chemotherapy, or those who are elderly or infants.

We would like to provide you with information to keep your pet(s) healthy if your pet is in frequent contact with someone who is immunocompromised.

yes no Please indicate if you would like to discuss this with the veterinarian today.

Is there anything else that you would like us to know about you or your pet(s)?

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HIV/AIDS Education: Still an Important Issue for Veterinarians

RADFORD G. DAVIS, DVM, MPH,
DACVPM^a

SYNOPSIS

Human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) is a significant cause of immunosuppression that puts infected individuals at higher risk for developing severe complications from zoonotic infections and other animal-related hazards. The number of people living with HIV grows each year, assuring that veterinary practitioners will have clients and/or employees who are afflicted with HIV/AIDS. Veterinarians need to better understand HIV/AIDS for many reasons: to dispel unfounded beliefs; to address discrimination and liability issues; to educate and protect the health of clients and employees; to help those with HIV/AIDS keep their pets; and to meet legal and professional requirements. To do this, veterinarians must become proactive in learning about HIV/AIDS and in reaching out to pet owners living with HIV/AIDS, as well as the physicians of those individuals. Through discussion on historical and contemporary issues surrounding HIV/AIDS, this article examines why veterinarians need to better understand HIV/AIDS, advocates for more time in the veterinary curriculum on the topic of HIV/AIDS, and provides resources for veterinarians and their clients.

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In June 2006, acquired immunodeficiency syndrome (AIDS)—a disease that is caused by the human immunodeficiency virus (HIV) and has claimed the lives of more than 22 million people worldwide, including more than 500,000 in the U.S.—turned 25 years old.¹ It is arguably the most important infectious disease of the 20th century and, very likely, of the 21st century as well. The numbers speak to its unwelcome ranking: HIV/AIDS is the fourth-leading cause of death worldwide behind (1) ischemic heart disease, (2) cerebrovascular disease, and (3) lower respiratory infections.² By the end of 2005, an estimated 38.6 million people were living with HIV, with 4.1 million new infections that year.³ Within the U.S., the incidence of AIDS is in decline, and individuals infected with HIV/AIDS are living longer due to the widespread use of antiviral medication—medication that is often out of reach for the majority of the world's HIV-infected populace due to its expense.⁴ Today, more than a million people in the U.S. are infected with HIV, with roughly 25% of them unaware of their status.^{1,4}

While the risk of acquiring a zoonotic disease from pets is fairly small for the general population,^{5,6} because of their immunocompromised state, individuals with HIV infection that has progressed to the stage of AIDS face significant health risks from pathogens associated with animals, insects, food, and water^{7,8} and are more likely to develop serious illnesses from such infections than nonimmunocompromised people.⁹ As those with HIV/AIDS live longer, veterinarians are more likely to see them as clients and employ them in their offices. It is, therefore, important that veterinarians have a clear scientific understanding of HIV/AIDS from which to intelligently advise and educate HIV/AIDS clients, coworkers, employees, and community health professionals on zoonotic diseases and other animal-related hazards, with the ultimate goal of protecting human life. Veterinarians must also be fully knowledgeable of the legal and liability issues that surround HIV/AIDS in the workplace.

The purpose of this article is to educate veterinarians on certain aspects of HIV/AIDS, demonstrate how veterinarians are intimately connected with the myriad issues surrounding HIV/AIDS, provide resources to veterinarians and pet owners, advocate for more veterinary involvement in addressing the needs of those with HIV/AIDS, and advocate for more HIV/AIDS education in the veterinary curriculum.

HIV/AIDS ORIGINS AND IMPACT

HIV could be considered the world's most cunning, most deadly disease of zoonotic origin, as humans

are not the original species from which this virus emerged.¹⁰ The two major types of the virus are HIV-1 and HIV-2, two distinct viruses that lead to AIDS. It is believed that the ancestors to HIV-1 and HIV-2 are the simian immunodeficiency viruses (SIV) from nonhuman primates of Africa. Roughly 26 species of Old World African monkeys and apes have been reported to be infected with SIVs.¹⁰ HIV-1 (the most common worldwide) has its origins from SIV_{cpz} (chimpanzee), and HIV-2 originated from SIV_{sm} (sooty mangabey).^{10,11} However, it is important to point out that HIV is not itself a zoonosis, but instead the adaptation of SIV viruses to humans. AIDS is also not a zoonosis, but is, rather, the end stage of HIV infection. The full sociological and health impact of this successful cross-species transmission is unmatched in history; only influenza and plague come close.

Globally speaking, the incidence rate of HIV appears to have stabilized,³ and nearly every country must grapple with the grim reality that HIV is now an endemic problem. While the AIDS epidemic shows signs of slowing in several regions around the world, the evidence does not indicate we are winning the war.¹² In fact, the full impact of AIDS has yet to be realized in many parts of the world.³ The decline in HIV mortality that the U.S. has experienced is slowing;¹³ this is unwelcome news. HIV/AIDS is currently ranked as the 22nd most common cause of death among all Americans, but is ranked seventh for African Americans.¹⁴ Awareness and education efforts have reduced the number of new HIV infections in the U.S. each year from the more than 150,000 per year in the 1980s to the current rate of 40,000 per year,¹ a rate that has changed little in the last 10 years.^{4,15} New antiretroviral drugs are continually coming to market to battle the virus and, fortunately, have helped slow the progression of HIV infection to AIDS—and ultimately death—for millions. But many individuals experience severe side effects, and the drugs do not help everyone.¹⁶

WHY VETERINARIANS NEED TO UNDERSTAND HIV/AIDS

Veterinarians need to understand HIV/AIDS for many reasons, including:

- To educate clients, coworkers, and employees with HIV/AIDS on zoonotic diseases and other animal-related risks (e.g., bites and scratches) and to safeguard their health
- To identify and address liability or discrimination issues in the workplace
- To understand HIV/AIDS clients' perspectives and concerns

- To dispel misconceptions about HIV/AIDS, particularly transmission routes
- To promote the human/animal bond and help those with HIV/AIDS keep their pets
- To provide appropriate advice to HIV/AIDS clients on new pet selection, pet care, and pet health
- To fulfill the veterinary obligation in protecting public health
- To facilitate discussions with HIV/AIDS clients' physicians about animal-related issues
- To enhance outreach efforts to HIV/AIDS clients, their physicians, and community support groups
- To meet state licensing requirements

Safety and liability

The potential for human blood exposure in the veterinary practice setting is a real possibility; bites, scratches, and needlestick injuries are not uncommon among workers. Animal owners may also sustain bites and scratches while at the clinic, or may arrive at the clinic already bearing such injuries in times of emergency. Veterinarians and their staff should be trained and prepared to render first aid to victims of animal bites or other injuries where there is the potential for blood loss.

The American Veterinary Medical Association guidelines on HIV/AIDS in the veterinary workplace outline simple measures and precautions that all veterinarians need to know regarding human blood exposures. These guidelines advocate for instructing all employees about HIV/AIDS so they understand what is and is not a hazard. The guidelines state that "... veterinarians must know enough about the disease to understand and deal with the real hazards, to plan and implement effective control and preventive measures, and to avoid unproductive efforts directed toward unfounded fears."¹⁷

The Occupational Safety and Health Administration (OSHA) recommends that veterinary clinics follow human bloodborne pathogen standards (29 CFR 1910.1030) when an employee suffers a bite, sharps-related injury, needlestick, or other injury.¹⁸ Knowledge regarding universal precautions^{19,20} is essential for protecting personnel and clients against accidental infection with HIV, hepatitis B and C, and other bloodborne pathogens. Veterinarians should also be aware that states may have their own bloodborne-pathogen standards and enforcement policies, which may differ from OSHA's, and that these state standards must be adopted as well. Information on individual

state policies can generally be obtained by contacting the state's department of labor.

Public health efforts today are encouraging more people to know their HIV status, and this means that more employers will have employees or employees with family members who have tested positive for HIV infection.²¹ This is an important consideration for veterinarians operating their own clinics. A person with HIV/AIDS is covered under the Americans with Disabilities Act (ADA) and cannot be discriminated against in employment, access to public accommodations, transportation, state and local government services, and telecommunications.²² Surveys of senior veterinary students at Iowa State University College of Veterinary Medicine reveal that most students do not know this (unpublished data).

In spite of the ADA, discrimination cases involving HIV/AIDS continue to be litigated. Employers must provide those covered under the ADA with "reasonable accommodations" and maintain the confidentiality of medical information.²¹ Reassigning, suspending, isolating, or firing a person with HIV/AIDS raises serious legal and moral concerns that employers will have an arduous task of defending. An employer can defend a case of disability discrimination by showing that the employee posed a substantial risk of serious injury to others; however, this is a defense that rarely works in cases involving HIV/AIDS because the employer must demonstrate a clear risk for HIV transmission.²¹ Employee or customer fear is also not a valid reason for denying employment.²¹ How will employees treat an HIV/AIDS coworker? Seven out of 10 Americans in a 2006 Kaiser Family Foundation survey indicated they were very or somewhat comfortable working with someone with HIV or AIDS,¹⁵ but discrimination, stigmatization, and harassment of those with HIV/AIDS continues in the work environment. Veterinary clinic owners and supervisors need to be educated on how to handle HIV/AIDS in the workplace, to allay fears and concerns of employees, to maintain strict confidentiality, and to use sound judgment in managing an HIV/AIDS employee, while not running afoul of the law.

Zoonotic disease concerns

At the point in which their immune system is most weak—the AIDS stage—those with HIV are highly susceptible to opportunistic infections (OIs), including zoonoses.²³ Prior to 1998, approximately 90% of deaths among those with HIV/AIDS were due to OIs, 7% to cancer, and 3% to other reasons.²⁴ Today, thanks to highly active antiretroviral therapy and prophylactic treatment of OIs, roughly 50% of HIV/AIDS deaths are from OIs—a remarkable decline.

As for the zoonoses that can infect those with HIV/AIDS, the list of potential candidates is long; thus, it is important to discriminate between what people with HIV/AIDS *can* get and what they often *do* get.²⁵ Some of the zoonoses of primary concern for people with HIV/AIDS include the following:^{6,8,26,27} *Toxoplasma gondii*, *Cryptosporidium* spp., *Salmonella* spp., *Campylobacter* spp., *Bartonella* spp., *Mycobacterium* spp., *Giardia* spp., *Dermatophytes*,²⁸ *Mycobacterium marinum*,²⁹ and *Listeria monocytogenes*. Other, less frequent pathogens include *Microsporidia*³⁰ (unclear zoonotic potential), *Rhodococcus equi*,³¹ and *Bordetella bronchiseptica*, which very rarely infects humans.³² AIDS-defining diseases (of which there are 26) that are animal-related include Cryptococcosis, cryptosporidiosis, mycobacteriosis, salmonellosis, and toxoplasmosis.²⁴ It should be noted that food, water, and the environment all can serve as sources of infection for several of these agents, in addition to animals. One study of individuals with AIDS found no significant difference between pet owners and non-pet owners in rates of OIs,⁵ indicating that pet ownership does not dramatically increase the risk of AIDS-defining zoonotic OIs.

Hundreds of zoonotic diseases can afflict humans,³³ and many books and articles have been written covering them. Of these publications, several deal specifically with the topic of zoonoses and HIV/AIDS, or the topic of pets, veterinarians, and immunocompromised owners, and would be beneficial reading for veterinary practitioners.^{6,8,27,34–39} Other publications are targeted to veterinarians to aid in the management of pets of immunocompromised owners and/or to aid and educate the pet owner as well.^{6,9,25,35,38,40,41} Guidelines for preventing OIs among HIV-infected people are published periodically by the Centers for Disease Control and Prevention. The 2002 guidelines cover several zoonoses and offer a section specifically on pet-related exposures.²⁶ Veterinary practitioners are urged to read these publications and become familiar with their recommendations so that they can provide advice and care that meets the prevention goals of their immunocompromised clients. Helpful Internet resources and publications are listed (Figures 1–3), as is a summary of recommendations for veterinarians and animal owners (Figures 4 and 5).

Uniqueness of HIV/AIDS and common misconceptions

As noted previously, individuals with HIV/AIDS are at a higher risk of severe illness from zoonotic diseases than nonimmunocompromised individuals. Of course, other groups of immunocompromised people also have

a similar risk of illness from zoonotic diseases. These groups include pregnant women, infants younger than 1 year, people older than 65 years of age, people taking immunosuppressive medications (such as organ recipients), people receiving chemotherapeutic agents, and people suffering from diabetes, renal failure, malnutrition, liver cirrhosis, or various other immunosuppressive diseases or conditions.^{6,8,35} Conservatively speaking, nearly 20% of the U.S. population is considered immunocompromised.⁷

Among these various immunocompromised conditions, HIV/AIDS is unique enough to demand special attention by veterinarians for many reasons:

- Its many routes of transmission (including blood)
- The prolonged duration of infection (life expectancy for a person with HIV under medical care in the U.S. is approximately 24 years)⁴²
- The highly susceptible end stage (AIDS) from which a person can suffer repeated and/or numerous OIs
- Demonstrated zoonotic threats
- Liability issues facing employers
- Disability issues, discrimination, and the stigma and shunning of those infected^{43,44}
- Continued myths and misunderstandings of transmission (including animal transmission) and cures
- The negative impact on families, communities, economic growth, and national security^{3,45}
- The importance of the human/animal bond

A survey of Americans conducted in 2006 shed light on how the nation perceives HIV/AIDS. According to those surveyed, HIV/AIDS ranks second behind cancer as the most urgent health problem facing the world today.¹⁵ In regard to the most urgent health-care issues facing the U.S., respondents ranked HIV/AIDS as the third most important, behind cancer and heart disease. Four out of 10 Americans said they knew someone with HIV. The study also revealed how much Americans really understand about HIV/AIDS: 37% of Americans still believed HIV can be transmitted through kissing, 22% through sharing a drinking glass, and 16% by touching a toilet seat. In a survey conducted in 2000, 41% of 5,641 respondents believed that HIV transmission could occur from being coughed or sneezed on by an HIV-infected person.⁴⁴ Despite two and a half decades of living with HIV/AIDS, misconceptions and lack of knowledge still continue.

Figure 1. Internet resources

• Bloodborne pathogens and needlestick prevention	http://www.osha.gov/SLTC/bloodbornepathogens/index.html
• CDC—HIV/AIDS	http://www.cdc.gov/hiv/default.htm
• CDC—Healthy Pets Healthy People	http://www.cdc.gov/healthypets
• Companion Animal Parasite Council	http://www.ccapvet.org
• Food Safety for Persons with AIDS	http://www.fsis.usda.gov/fact_sheets/Food_Safety_for_Persons_with_AIDS/index.asp
• Guidelines for preventing opportunistic infections among HIV-infected persons—2002	http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5108a1.htm
• HIV—workplace education	http://www.hivatwork.org
• Pets Are Wonderful Support	http://www.pawssf.org
• UNAIDS	http://www.unaids.org/en/default.asp
• U.S. Department of Justice—Americans with Disabilities Act	http://www.usdoj.gov/crt/ada
• World Bank HIV/AIDS	http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION/EXTHIVAIDS/0,,menuPK:376477~pagePK:149018~piPK:149093~theSitePK:376471,00.html

CDC = Centers for Disease Control and Prevention

HIV = human immunodeficiency virus

AIDS = acquired immunodeficiency syndrome

UNAIDS = Joint United Nations Programme on HIV/AIDS

Veterinarians and human health professionals—working together

There is a recognized need for the free sharing of information and collaboration among human and animal health experts (often called “one medicine” or “one health”) to tackle today’s, and tomorrow’s, crucial public health problems.^{46–49} Fully addressing the health implications of zoonotic diseases for individuals with HIV/AIDS requires the involvement of a team of professionals, including the collaboration of physicians and veterinarians. Given that 61% of human pathogens

and 75% of emerging pathogens are zoonotic, there is a demonstrated need for veterinary involvement in human diseases.³³ Veterinarians are experts on zoonotic diseases, animal-related hazards, and the human/animal bond,⁵⁰ and are essential in protecting the health of the HIV/AIDS pet owner. The role of the veterinarian in HIV/AIDS has been documented more than once.^{35,38} This is not to say that veterinarians should be diagnosing and treating HIV/AIDS patients—they should not—but they should be in communication with the HIV/AIDS client’s physician, providing accurate,

Figure 2. Brochures

• Preventing infections from pets	http://www.cdc.gov/hiv/pubs/brochure/oi_pets.htm
• Exposure to blood: what healthcare personnel need to know	http://www.cdc.gov/ncidod/dhqp/pdf/bbp/Exp_to_Blood.pdf
• You can prevent toxo [toxoplasmosis]	http://www.cdc.gov/hiv/pubs/brochure/oi_toxo.htm
• AVMA—animal health	http://www.avma.org/communications/brochures/allbrochures.asp
• Zoonotic diseases: the shared threat	http://www.npwm.com/zoonosis.htm
• Safe pet guidelines (PAWS)	http://www.pawssf.org/library_safepetguidelines.htm

AVMA = American Veterinary Medical Association

PAWS = Pets Are Wonderful Support

Figure 3. Articles and publications

- Brunt J, Guptill L, Kordick DL, Kudrak S, Lappin MR. American Association of Feline Practitioners 2006 Panel report on diagnosis, treatment, and prevention of *Bartonella* spp. infections. *J Feline Med Surg* 2006;8:213-26.
- Stine GJ. AIDS update 2005. San Francisco: Pearson Benjamin Cummings; 2005.
- Brown RR, Elston TH, Evans L, Glaser C, Gullledge ML, Jarboe L, et al. American Association of Feline Practitioners 2003 report on feline zoonoses [cited 2007 Jul 24]. Available from: URL: <http://www.aafponline.org/resources/guidelines/ZooFinal2003.pdf>
- Guidelines for preventing opportunistic infections among HIV-infected persons—2002. *MMWR Recomm Rep* 2002;51(RR-8):1-46. Also available from: URL: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5108a1.htm> [cited 2007 Jul 24].
- Lappin MR. Pet ownership by immunocompromised people. *Compend Contin Educ Pract Vet* 2002;24S:16-25.
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science-based information on zoonotic and animal-related threats as appropriate.

Many veterinarians may view the education of clients on zoonotic diseases as the domain of physicians, but many physicians do not feel comfortable discussing zoonotic risks from animals and, therefore, do not advise their patients on them.^{35,36} A survey of Wisconsin physicians and veterinarians concerning the risk and prevention of zoonoses in immunocompromised people found that veterinarians saw or discussed zoonoses more frequently (weekly) with their clients than physicians (occasionally).³⁶ A survey of physicians and veterinarians in Miami, Florida, reported that most veterinarians (79%) and physicians (89%) had never contacted their medical counterpart to discuss zoonoses or risks of pet ownership.⁵¹ It also found that veterinarians (38%) were more likely to have zoonotic disease brochures in their waiting rooms than physicians (4%). Another Florida study of individuals with AIDS found that only 10% of pet owners were informed about zoonotic diseases by health-care workers, and some of this information was incorrect or misleading.⁵ All of these studies indicate that there is a need to improve

Figure 4. Recommendations for pet owners with HIV/AIDS⁵⁻⁹

Avoid owning and coming in contact with the following:

- Immunosuppressed animals
- Reptiles and amphibians
- Exotic/wild animals
- Stray dogs and cats
- Sick animals
- Farm animals

Hygiene:

- Change litter box and birdcage liner daily. Use of plastic litter box liners is encouraged.^h
- Pick up dog feces daily.^h
- Maintain a clean, healthy aquarium.
- Wear gloves when cleaning litter box, picking up dog feces, cleaning birdcage, gardening, handling raw meat, or similar exposures. For aquariums, use heavy rubber gloves.^h
- Disinfect litter box with hot water and detergent and scrub well.^h
- Spray soiled birdcage liner with 1% bleach solution and let sit for 10 minutes before removing paper. (Do not expose bird to bleach fumes.)^h
- Minimize contact with animal feces, blood, and urine.
- Wash hands for 20 seconds after touching animals, changing litter box, cleaning birdcage or aquarium, gardening, or handling meat, even if using gloves.
- Follow USDA Food Safety and Inspection Service recommendations for cooking meats: Cook beef, veal, and lamb steaks/chops/roasts to 145°F; pork, ground beef, ground veal and lamb, egg dishes, and casseroles to 160°F; leftovers to 165°F; and poultry to 165°F.
- Wash bites and scratches immediately with copious amounts of soap and water.
- Seek medical care for bites and scratches.
- Do not allow pets to lick wounds or face.
- Do not share food or eating utensils with pets.
- Do not kiss pets.
- Do not clean chicken coops.

Pets:

- Use flea and tick repellents regularly.
- Have pets examined by veterinarian every six months for preventive care.
- Maintain regular vaccine schedule.
- Do not let pets drink from toilet.
- Keep cats indoors at all times.
- Feed only good quality commercial food.
- Do not feed raw meat.
- Keep pets' toenails trimmed.
- Have sick animals seen by veterinarian promptly.

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Figure 4 (continued). Recommendations for pet owners with HIV/AIDS^{a-9}**Pets:**

- Have nonimmunocompromised person take any animal with diarrhea to the veterinarian. Animals with diarrhea should be separated from immunocompromised owner until healthy.
- Routinely deworm dogs and cats with a broad-spectrum dewormer and heartworm preventative.
- Have a fecal exam performed at least every six months.
- Adopt only adult dogs and cats (at least one year of age).
- Adopt from private family.
- Have newly adopted pet seen by veterinarian prior to allowing it to live with immunocompromised person.
- Keep dogs on leash or adequately fenced.
- Do not let pets hunt.
- Do not let pets eat the feces of other animals.
- Prevent pets from eating garbage.

^aLappin MR. Pet ownership by immunocompromised people. *Compend Contin Educ Pract Vet* 2002;24S:16-25.

^bGill DM, Stone DM. The veterinarian's role in the AIDS crisis. *J Am Vet Med Assoc* 1992;201:1683-4.

^cAngulo FJ, Glaser CA, Juranek DD, Lappin MR, Regnery RL. Caring for pets of immunocompromised persons. *J Am Vet Med Assoc* 1994;205:1711-8.

^dBrown RR, Elston TH, Evans L, Glaser C, Gullledge ML, Jarboe L, et al. American Association of Feline Practitioners 2003 report on feline zoonoses. American Association of Feline Practitioners [cited 2007 Jul 12]. Available from: URL: <http://www.aafponline.org/resources/guidelines/ZooFinal2003.pdf>

^eCenters for Disease Control and Prevention (US). Preventing infections from pets [cited 2007 Jul 10]. Available from: URL: http://www.cdc.gov/hiv/pubs/brochure/oi_pets.htm

^fPets Are Wonderful Support. Safe pet guidelines [cited 2007 Jul 10]. Available from: URL: http://www.pawssf.org/library_safepetguidelines.htm

^gU.S. Department of Agriculture, Food Safety and Inspection Service. Food safety for persons with AIDS [cited 2007 Jul 17]. Available from: URL: http://www.fsis.usda.gov/fact_sheets/Food_Safety_for_Persons_with_AIDS/index.asp

^hShould be performed by someone who is not immunocompromised whenever possible.

HIV = human immunodeficiency virus

AIDS = acquired immunodeficiency syndrome

USDA = U.S. Department of Agriculture

communication between the two professions on the risks of pets and zoonoses.

The human-animal bond

It is estimated that 63% of U.S. households have a pet,⁵² and those infected with HIV are just as likely to own pets as those not infected.⁵³ The importance and healthful benefits (including psychological) of companion animals to people have been demonstrated in several

studies, including among people with HIV/AIDS.⁵³⁻⁵⁶ These studies have shown that people with AIDS who owned pets reported less depression than those with AIDS who did not own a pet, especially among those with less social support.⁵³ Because of societal stigmas and discrimination, perhaps even isolation, HIV/AIDS clients may have very strong bonds with their pets, a bond the veterinary practitioner must recognize and protect.

Some people with HIV/AIDS have been advised to give up their pets to better protect their health,^{5,37,38} but most experts today recognize that pet ownership and health are not at odds with each other.^{5,55,57} Some people may even forgo medical care or forgo taking steps to ameliorate their medical condition for fear of having to give up their pet. A recent study on pet ownership and health concluded, "Many people would welcome advice and support to enable them to reconcile or manage pet ownership and health problems whenever possible."⁵⁵ This is an area where veterinarians, in combination with the pet owner's physician, can provide sound, scientific advice, allowing HIV/AIDS clients to keep their pets and their health, too.

HIV/AIDS EDUCATION IN THE VETERINARY CURRICULUM

The Institute of Medicine, in its 2003 report *Microbial Threats to Health: Emergence, Detection, and Response*, stated, "To rebuild the public health workforce needed to respond to microbial threats, health profession students (especially those in the medical, nursing, veterinary, and laboratory sciences) must be educated in public health as a science and as a career."⁵⁸ In the last several years, the number of programs globally to train veterinarians in the areas of public health, public practice, or population medicine has increased.⁵⁹ In fact, today in the U.S., more veterinary colleges are offering a master of public health degree to veterinary students than ever before.⁶⁰

In the face of such new training efforts, however, very little time, if any, is spent on HIV/AIDS in the veterinary curriculum. *The Proposed Model Veterinary Public Health/Preventive Medicine Curriculum*—the recommendations developed by the American College for Veterinary Preventive Medicine—proposes one hour on the topic of zoonoses and immunocompromised populations in the veterinary curriculum (it does not mention HIV/AIDS directly).⁶¹ This is not enough time to cover such an important topic properly. The veterinary curriculum at Iowa State University delivers a minimum of four hours of instruction on HIV/AIDS, covering history, clinical illness, virology, epidemiology,

myths, social impact, client education, community outreach, and other aspects. We recommend that all veterinary schools allot a minimum of four hours to cover the topic of HIV/AIDS adequately and to meet state licensing requirements, because at least one state (Washington) requires veterinarians to certify that they have received four hours of instruction on HIV/AIDS to become licensed. Whether this regulation will be adopted by other states remains to be seen.

CONCLUSION

HIV/AIDS is unlike any disease our planet has ever faced, and the veterinary profession has accepted the obligation to protect human health, including the health of those with HIV/AIDS, to the best of its abilities and within its professional province. Liability issues, discrimination, zoonotic threats, confidentiality, disease misconceptions—they are all part of HIV/AIDS and the concerns of a modern veterinary profession. The psychological and physical benefits

Figure 5. Recommendations for veterinarians working with pets of people with HIV/AIDS

- Be familiar with zoonotic diseases and discuss them with clients in light of pet ownership benefits.
- Make clear you and your staff are discreet and will keep all client medical information confidential.
- Use signs/brochures in waiting area or exam room on the topic of HIV/AIDS to prompt clients to seek your advice.
- Document any discussion on zoonoses or animal-related hazards in the client record.
- Know the reportable animal diseases in your state.
- Always provide the owner with written educational material on zoonoses for which their pet is at risk, or on suspected or diagnosed zoonoses.
- Refer clients who are ill or who have suffered animal trauma to a physician/emergency department.
- Volunteer to speak to the client's physician about zoonotic risks or other animal-related issues.
- Get to know your state Public Health Veterinarian (for disease reporting and zoonotic assistance).
- Get to know physicians in your community.
- Do not allow clients to restrain animals under your care, even their own.
- Familiarize yourself with the Americans with Disabilities Act and implications for the workplace.
- Speak to local HIV/AIDS groups about pets and zoonoses.
- Make an effort to become educated on HIV/AIDS.

HIV = human immunodeficiency virus

AIDS = acquired immunodeficiency syndrome

of having a pet outweigh the small risk of zoonoses to an educated and careful pet owner;²⁵ we do not want to overstate the risk of pets to HIV/AIDS clients nor discourage them from enjoying the companionship of pets. The HIV/AIDS pet owner may receive confusing or conflicting information from television, magazines, newspapers, health-care providers, or other sources about the risk their pet poses. There is, therefore, a need for sound professional counseling and education of HIV/AIDS clients—indeed all clients—on zoonoses, animal-related hazards, and precautionary measures. Veterinary practitioner knowledge of HIV/AIDS is paramount to achieving this goal, and this means spending a minimum of four hours on the topic of HIV/AIDS in the veterinary curriculum and offering more continuing education and publications focusing on this topic for veterinary practitioners.

Finally, veterinarians can be proactive and reach out to HIV/AIDS clients in many ways. These include the use of small signs in exam rooms, waiting room posters or pamphlets, new client forms that allow clients to mark their request for more information on HIV/AIDS and pets, brochures in new puppy/new kitten packages, the clinic website, the clinic newsletter, community speaking engagements, affiliation with HIV/AIDS support groups, and direct mailings.

With close client communication, education, and good preventive care for the pets of people with HIV/AIDS, veterinarians can reduce the risk of zoonoses to these clients and allow them to make educated decisions on the hazards and benefits of pet ownership. It is only through understanding the disease and listening to the HIV/AIDS client that the veterinarian can truly provide what the client and pet both need.

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