

Your Zoonosis Connection

Harris County

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Rabies and Exposures

The risk of rabies remains a health threat in Harris County. In Harris County, rabies was last documented in a cat in 1986 and a dog in January 2015. The dog was found in Tomball (zip code 77377) and infected with the South Central Skunk strain of rabies, which commonly spills over from skunks to wildlife and domestic animals. Rabies also continues to remain enzootic in our bat population, as illustrated in the table below. Other high-risk carriers include coyotes, foxes, raccoons, and skunks.

Animals Exposed to High Risk Wildlife

When possible, high risk animals involved in potential rabies exposures should be tested to prevent unnecessary post-exposure prophylaxis (PEP). Should the high risk animals not be available for testing or produces a non-negative test result, the exposed animal should proceed with the appropriate PEP protocol. The rabies vaccination status of the exposed animals will dictate which PEP protocol to follow. Although strict adherence to the PEP protocol has proven effective, the importance of pre-exposure rabies vaccines should not be minimized. Pre-exposure rabies vaccines help protect animals from undetected rabies exposures and is strongly advocated from both public health and legal perspectives.

Domestic Animals Involved in Bite Cases

All incidents of an animal biting or scratching a human must be reported to the local rabies control authority (LRCA). The LRCA will determine the appropriate method of quarantine based on the circumstances and rabies vaccination status of the biting animal. In dogs and cats, the biting animal should be placed in quarantine and observed for 240 hours following the exact time of the bite. Should the biting animal **become ill or not survive** the 240 hour quarantine period, the animal should be submitted for rabies testing. To help keep your community healthy, educate your clients about rabies and continue to promote regular vaccinations.

More information about rabies may be found at hcpbes.org/vph or countypets.com.

January-November 2015 Harris County Rabies Results					
Species	Positive	Negative	Decomposed	Destroyed*	Total
Bat	27	400	26	6	459
Cat	0	304	2	0	306
Coyote	0	1	0	0	1
Dog	1	621	1	0	623
Raccoon	0	24	1	0	25
Skunk	8	665	9	4	686
Other	0	40	1	0	41
Total	32	1931	32	9	2004

Rabies Specimens submitted to the City of Houston Rabies Lab

*Destroyed: Non-testable specimens due to tissue destruction prior to submission (i.e. trauma)

Source: Texas Department of State Health Services, Region 6/5 S

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Did you know?

- ◆ Giardia appears to be relatively species specific with little zoonotic capabilities (i.e. the human specific species is usually not the same as those found in dogs and cats).



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Intestinal Parasites and Your Pet

Intestinal Parasites

Intestinal parasitism is extremely common in pets, especially in young pets. These pets may shed the parasites into the environment and place the family at risk for zoonotic disease. Clients and staff should understand the importance of regular deworming to improve the quality of life for the pet, as well as prevent disease.

Hookworms

Hookworms (*Ancylostoma* sp. and *Uncinaria* sp.) are a parasite of the small intestines that feed on the hosts blood. Inside the mouth of a hookworm are rows of hooks that are used to attach to the lining of the intestines. Dogs and cats can transmit hookworms to their young either trans-placentally or trans-mammary. The eggs are shed in the feces and contaminate the environment, where pets can pick them up again. Their feeding behavior may cause mild, bloody diarrhea or even weight loss, ill thrift, blood loss anemia and death in young dogs and cats.

Cutaneous larva migrans is the primary zoonotic concern with hookworms. Hookworm larvae can



Cutaneous larva migrans
<http://www.medicalrealm.net/what-is-dermatology---cutaneous-larva-migrans.html>

penetrate the epidermis of a person if the skin comes in contact with the larval contaminated surface for 5 to 10 minutes. Normally, these larvae would penetrate the dermis in an animal and migrate to the intestines. The larvae are unable to do this in people and migrate through the skin. *Ancylostoma braziliense* is the most common species implicated in this. The migrating larvae cause a

pruritic, erythematous track in the skin. Rarely, hookworms can also parasitize the human intestines and cause an enteritis.

Roundworms

Roundworms are normally found in the intestinal tract of dogs and cats (*Toxocara canis* and *Toxocara cati*, respectively). Signs of roundworms include diarrhea, loss of appetite and weight loss, as well as visible

worms passing in the stool. Severe infections can be fatal in young puppies and kittens.

People can be infected with roundworms as well. The primary exposure is through incidental ingestion and children are the highest risk. Humans are an aberrant host for these worms, and as a result, roundworms cause

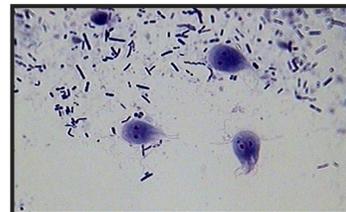
a condition called **visceral larva migrans**. The roundworm larvae migrate through the internal organs of the host and encyst in the aberrant tissue, causing pain and dysfunction. They can also migrate to the eye (**ocular larva migrans**) causing vision problems and possibly permanent damage.



Ocular larva migrans, localized lesion in the left eye.
http://ferramentas.unipinhal.edu.br/engenhariaambiental/rst/rst.php?p=supp_files&id=689

Giardia

Giardia is a protozoal parasite passed in the stools of both people and animals and causes a small-bowel diarrhea in a wide variety of species. However, most remain asymptomatic. Infected animals may exhibit poor thrift and a failure to thrive. The protozoa is found in soil, water and surfaces/items contaminated with feces. Infection occurs when the parasite is accidentally ingested.



Giardia lamblia on direct smear from an infected dog
<http://rowdy.msudenver.edu/~churhcy/BIO3270/Images/Protozoans/Giardia.htm>

Giardia appears to be relatively species specific with little zoonotic capabilities (i.e. the human specific species is usually not the same as those found in dogs and cats). However, *Giardia duodenalis* can cause disease in people and may have zoonotic transmission as

there is evidence of some animals carry this particular species. Therefore, precautions should be taken to reduce transmission.

Whipworms

Whipworms are transmitted by ingestion of the eggs from a contaminated environment. These eggs can survive in the environment for years. The most common clinical signs of whipworm infection for pets is poor thrift. However, a heavy parasite burden can cause a



Common intestinal parasites of the dog and cat; www.missionridgevet.com

large bowel diarrhea with weight loss, and in severe cases, anemia. Transmission in people is similar; through ingestion of contaminated soil or water. Whipworm infection is commonly asymptomatic in people. If symptoms occur, they include abdominal pain, nausea, diarrhea and weight loss. **Visceral larval migrans** has also been reported in people but is an extremely rare complication of whipworm infection.

Tapeworms

Dipylidium caninum is the common tapeworm of dogs and cats, but is uncommonly passed to people. In pets, clinical signs include tapeworm segments adhered around the anus with perianal pruritus (scooting). In heavy infections the pet may lose weight or become unthrifty. This parasite can be transmitted to people or pets via ingestion of fleas. Children are most likely to be affected. The symptoms are similar in people, with occasional passing of tapeworm segments in the feces and possible weight loss. Proper flea control on the pet and in the environment (house and yard) are essential to tapeworm control.

Prevention

Proper hygiene is important for the prevention of intestinal worm infestation. For pets, regular deworming of all ages is necessary with proper, monthly flea control. Flea and heartworm preventatives usually have a deworming agent as part of their ingredients, allowing for a simple, monthly deworming schedule. It is also essential that the surrounding indoor and outdoor environment be kept sanitary. Remove feces regularly to reduce the risk of environmental contamination. Treat these areas for insects (fleas) on a regular basis as well.

References

Centers for Disease Control:
<http://www.cdc.gov/DiseasesConditions/>
 Blackwell's Five-Minute Veterinary Consult: Canine and Feline Infectious Diseases and Parasitology
 Centers for Food Security & Public Health:
<http://www.cfsph.iastate.edu/>

Proposition 3 Update

On the November 3, 2015 Election, Harris County citizens voted in favor of PROPOSITION THREE, which designates \$24,000,000 in bonds for a Veterinary Public Health Adoption and Care Center. The Veterinary Public Health Adoption and Care Center will include three new buildings and renovation of the current facility to provide:

- New adoption center: houses adoptable pets, showcases them and provides space for the public to visit and interact with them.
- New shelter holding area
- New isolation & quarantine building to hold sick animals and keep them separate from healthy animals. Currently, there is limited ability to isolate sick animals.
- Remodeling of the current shelter facility for animal intake.

The Harris County Animal Shelter is a public shelter and cannot turn away any animal, even if it is sick, vicious or unadoptable. Built in 1986 and designed to hold 12,000 animals annually. Last year, the shelter took in approximately 25,000 unwanted dogs and cats (an average of 80 animals per day).



Zoonosis Trivia

Test your knowledge of Zoonotic Disease Trivia by answering the following questions.

The answers are listed below.

1. What pulmonary syndrome can be caused by an infection carried by the deer mouse, white-footed mouse, rice rat and cotton rat?
2. The term "zoonosis" was first coined by a German physician-scientist known as the father of modern pathology. What was his name?
3. What disease can cause gastrointestinal signs, as well as muscle pain due to the formation of cysts in the muscle tissue?
4. *Canicola*, *grippotyphosa*, *hardjo*, *icterohaemorrhagiae* and *pomona* are the most common serovars in the U.S. of what disease?
5. What disease is caused by the bacterium *Francisella tularensis* and is also known as rabbit fever or deer fly fever?
6. What disease is known as Malta fever because it was first recognized as a human disease on the island of Malta?
7. What disease is usually transmitted by the bites of infected fleas and is responsible for at least three major pandemics?
8. What tick-borne disease is characterized by erythema migrans?
9. What vector transmits the agent that causes "breakbone fever", also known as Dengue fever?
10. What intestinal nematode of raccoons can cause severe neurological and ocular signs when its larvae migrate in humans, mammals and birds?

Answers: 1. Hantavirus 2. Rudolf Virchow 3. Trichinella 4. Leptospirosis 5. Tularemia 6. Brucellosis 7. Plague 8. Lyme disease 9. Aedes mosquito 10. Baylisascaris

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