

# The incidence of parasitism in Midwest shelter owned companion animals

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## Abstract

It has been reported that approximately 39% of animals adopted from shelters show signs of infectious disease within two weeks after being adopted<sup>3</sup>. In addition, as many as 40% of shelter animals may be infected with gastrointestinal parasites, such as, hookworm, roundworm, tapeworm, whipworm, coccidia, capillaria, cryptosporidium, and giardia<sup>5</sup>. We have measured the rate of parasitism in 19 shelters in the Midwest and are looking for trends. Since parasites pose a health risk to humans, quantifying the incidence of parasitism in shelters helps to evaluate the health risks dogs and cats initially pose to their adoptive families. Another goal, was to compare the rate of parasitism in shelter animals versus foster care animals. Our hypothesis states that foster animals are healthier than shelter animals. Surveys to shelter directors were sent out that asked about such things as vaccination protocol, adoption rates and parasitism. Surveys were also sent to foster families that were currently providing temporary homes to shelter animals. These surveys inquired about such things as the foster parent's family pet(s), health care of the foster pet and signs of disease in the foster and family pet(s). We have found that coccidia is the most prevalent parasite in the shelters studied. We have also discovered that interpretation of the data will be difficult. The full analysis of data is still in progress.

## Introduction

- Millions of companion animals enter shelters each year and only half those animals are adopted.<sup>1</sup>
- Animals that are not adopted are euthanized because of lack of space at the shelters or disease.<sup>2</sup>
- If foster families provide an environment with a lower rate of parasitism, this will be of importance because foster care can help shelters deal with space issues.
- This study examined many issues including space, health protocol, adoption protocol, and relationships with local veterinarians.

## Specific Aims

- Obtain information on rates of incidence of parasitism and gastrointestinal signs in companion animals housed in shelters and foster homes.
- Compare parasitism rates in foster homes versus home shelters.
- Correlate parasitism rates between participating shelters.
- Obtain information on rates of companion animal adoptions from foster homes as compared to adoption rates in the shelter of origin as well as shelters that do not foster.

## Materials and Methods

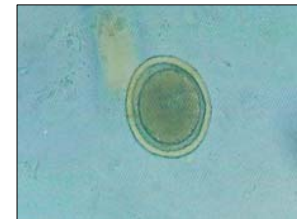
1. Confidential written survey completed by manager or director at all cooperating shelters.
  2. Confidential written survey completed by foster families.
  3. Fecal analysis was performed on samples from animals that were chosen at random from all cooperating shelters.
  4. Fecal tests were performed within 72 hours of sample collection.
- Zinc sulfate flotation was used to detect the presence of giardia cysts. Sugar flotation was performed to detect roundworm, hookworm, coccidia, whipworm, tapeworm, and capillaria.
  - Direct smears were made, stained with Diff- Quick™, to detect giardia trophozoites; and acid fast stain to detect cryptosporidium.



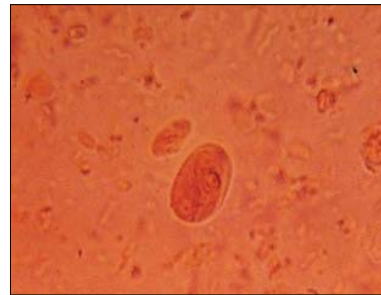
Isospora species (coccidia)  
magnification 400x<sup>5</sup>



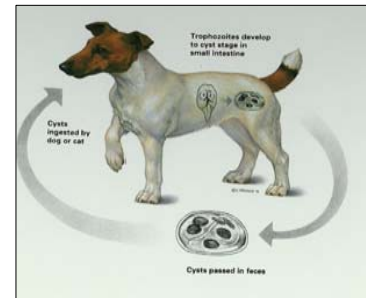
Egg of Trichuris vulpis (whipworm)  
magnification 400x<sup>5</sup>



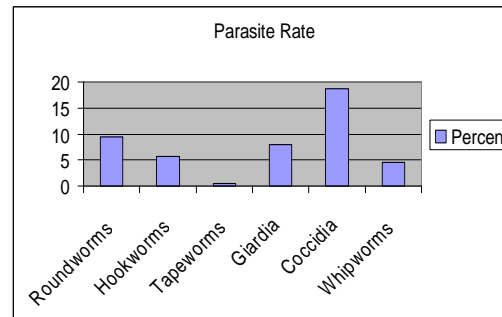
Egg of Toxocara cati (roundworm)  
magnification 400x<sup>5</sup>



Giardia cyst: magnification 1000x<sup>5</sup>



Lifecycle of the protozoa Giardia spp.<sup>5</sup>



Preliminary fecal test results on 389 samples. Figure 1

## Results

1. Coccidia was the most prevalent parasite of shelter and foster animals. (figure 1)
2. Survey results regarding the number of shelter and/or foster animals, currently in shelter or foster care, that were parasitized was difficult to interpret.
  - 3 of 17 surveys provided us with the number of each parasite seen in shelter and/or foster animals.
  - 6 of 17 surveys reported they do not test their shelter and/or foster animals for parasites.
  - 4 of 17 surveys did not answer the question.
  - 1 of 17 surveys provided us with the number of parasites seen in one species of animal but not the other.
  - 1 of 17 surveys provided an estimate of the number of parasites seen in their dogs and cats.
  - 1 of 17 surveys reported that their dogs and cats are tested for parasites but the types of parasites are not recorded.
  - 1 of 17 surveys gave us no numbers for shelter animals and reported that foster animals are tested but types are not recorded.

## Conclusions

- This study was conducted during the summer months; this is the busiest time of year for shelters, allowing us access to a great number of animals.
- Survey information was not as complete as we would have liked. This may have been due to the survey instrument and/or time constraints of the shelters.
- Fecal sample collection, despite the busy time of year, was often successful. We were able to collect fecal samples from all 19 shelters.
- Sources of error included: The number of fecal samples collected from shelters sometimes was less than what was requested because not all animals defecated during the time period of collection. Due to the large amount of fecal samples that had to be analyzed, sometimes the co-investigators were outside of the 72 hour protocol guidelines. This may have resulted in decreased ability to detect parasites.
- Shelters may benefit by reviewing current record keeping procedures and making changes that will facilitate the compilation of health data on the foster and shelter animals.

## References

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