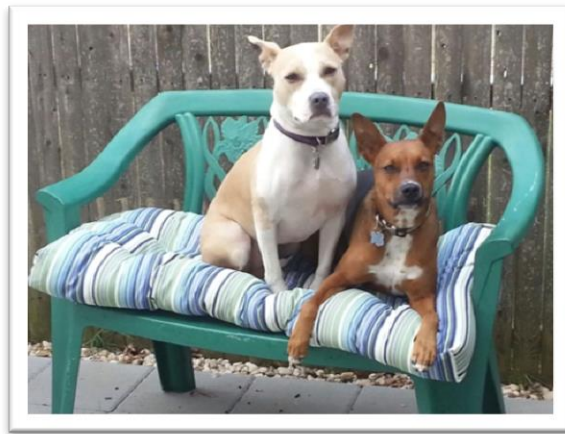


# Heartworm Disease Management in North American Animal Shelters

Results from a survey conducted by the  
American Heartworm Society and the  
Association of Shelter Veterinarians

October 2014



*Keep them safe. Love them always.*



AMERICAN  
HEARTWORM  
SOCIETY™  
EST. 1974



Association of  
Shelter Veterinarians

## **Background**

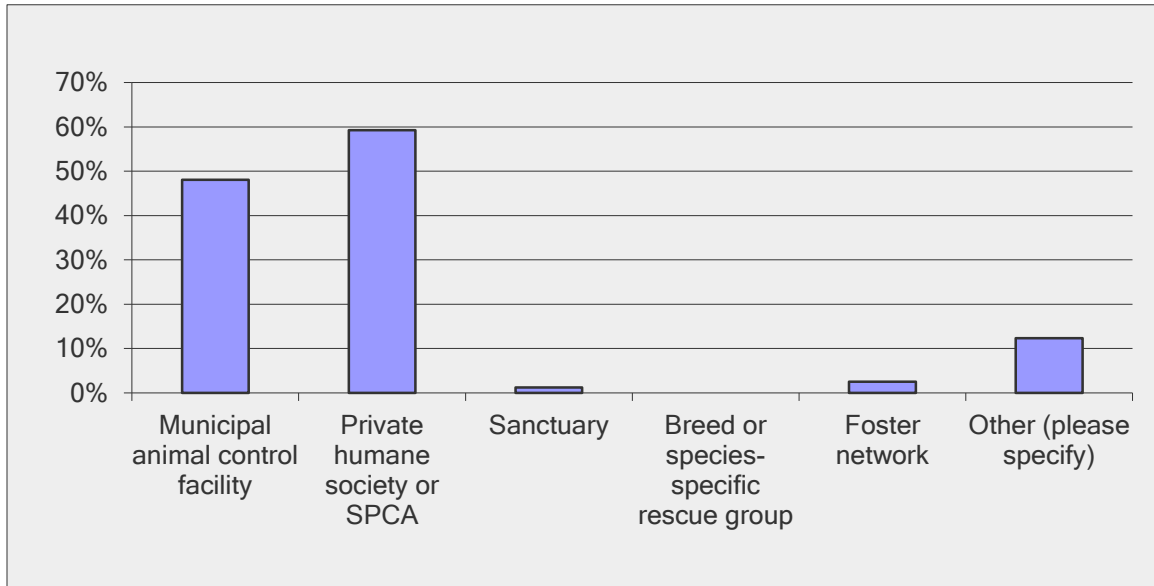
The management of canine and feline heartworm disease is a challenge to animal shelters with a variety of sheltering models, admission policies, and resource limitations across North America.

In January 2014, the American Heartworm Society and the Association of Shelter Veterinarians (ASV) formed a working group to better understand current practices of animal shelters with regards to management of heartworm disease and to develop resources to support shelter veterinarians in their efforts. A survey of the ASV membership was undertaken in February 2014, the results of which are contained in this report.

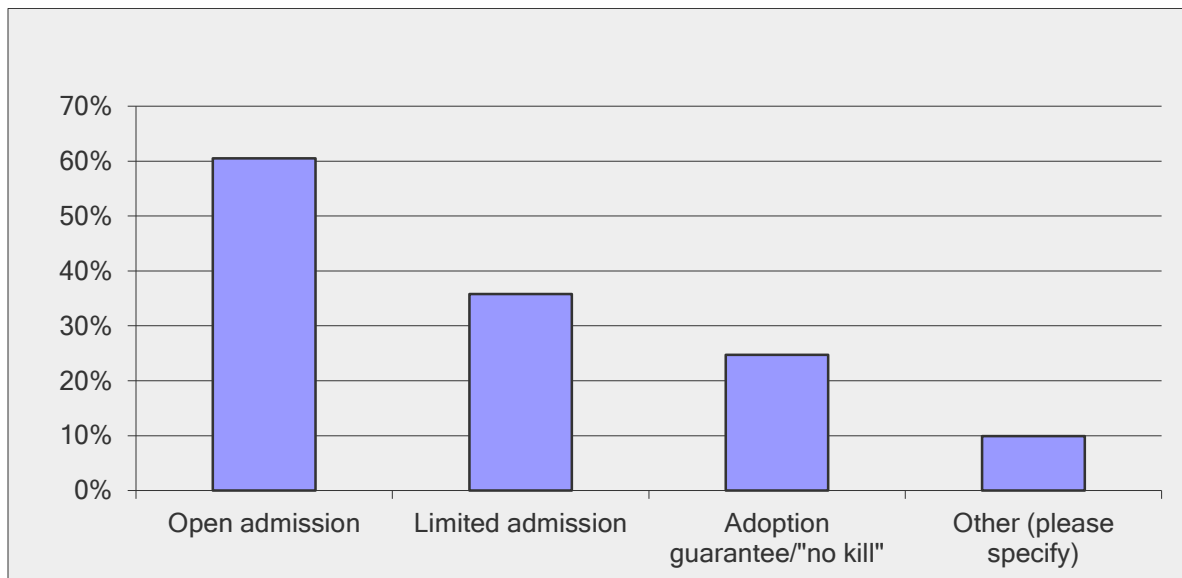
A total of 105 shelter veterinarians completed the survey, representing the following regions of North America: Northeast (15%), Southeast (32%), Midwest (12%), West (20%), Canada (2%).

## I. Respondent Demographics

Q. What type of sheltering organization to you represent? (Select all that apply.)



Q. How would you describe your organization? (Select all that apply.)



**Q. How many veterinarians does your shelter employ?**

How many veterinarians does your shelter employ?									
Number									
Answer Options	0	1	2	3	4	5	>5	Response Count	
Full time	7	25	20	4	5	3	4	68	
Part time	11	22	16	5	3	0	3	60	
								Question Totals	
								<i>answered question</i>	81
								<i>skipped question</i>	24

**Q. Please estimate your shelter's annual medical budget. (Include the budget for preventive care products, medications, treatment of medical conditions and not that for salaries.)**

Answer Options	Response Percent	Response Count
I don't know.	72.8%	59
Estimated budget	27.2%	22
<i>answered question</i>		81
<i>skipped question</i>		24

Answer Options	Response Percent	Response Count
≤\$50,000	18.2%	4
\$50,001-100,000	13.6%	3
\$100,001-200,000	27.3%	6
>\$200,000	40.9%	9
<i>answered question</i>		22
<i>skipped question</i>		0

**Q. How many dogs did your shelter admit in 2013?**

Answer Options	Response Percent	Response Count
<1,000	14.8%	12
1,001-2,500	29.6%	24
2,501-5,000	32.1%	26
5,001-10,000	17.3%	14
>10,000	6.2%	5
<i>answered question</i>		<b>81</b>
<i>skipped question</i>		<b>24</b>

**Q. What percentage of these dogs was heartworm positive?**

Answer Options	Response Percent	Response Count
We do not admit dogs.	2.5%	2
I don't know.	44.4%	36
Enter percentage	53.1%	43
<i>answered question</i>		<b>81</b>
<i>skipped question</i>		<b>24</b>

Answer Options	Response Percent	Response Count
≤5%	62.8%	27
5-10%	20.9%	9
11-25%	9.3%	4
>25%	7.0%	3
<i>answered question</i>		<b>43</b>
<i>skipped question</i>		<b>0</b>

**Q. How many cats did your shelter admit in 2013?**

Answer Options	Response Percent	Response Count
<1,000	14.8%	12
1,001-2,500	28.4%	23
2,501-5,000	33.3%	27
5,001-10,000	22.2%	18
>10,000	1.2%	1
<i>answered question</i>		<b>81</b>
<i>skipped question</i>		<b>24</b>

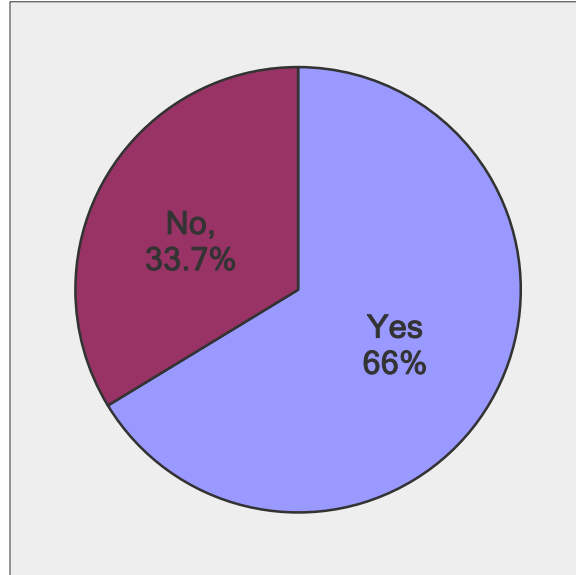
**Q. What percentage of these cats was heartworm positive?**

Answer Options	Response Percent	Response Count
We do not admit cats.	1.2%	1
I don't know.	93.8%	76
Enter percentage	4.9%	4
<i>answered question</i>		<b>81</b>
<i>skipped question</i>		<b>24</b>

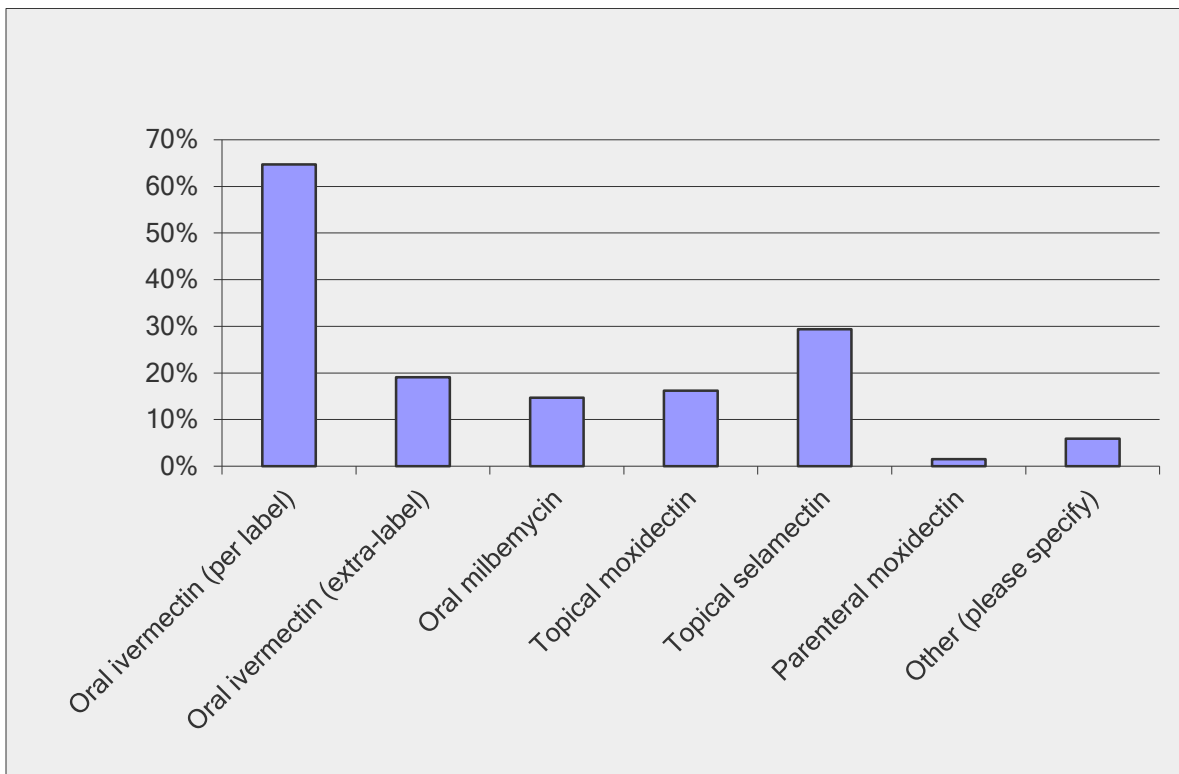
Answer Options	Response Percent	Response Count
≤5%	100%	4
5-10%	0%	0
11-25%	0%	0
>25%	0%	0
<i>answered question</i>		<b>4</b>
<i>skipped question</i>		<b>0</b>

## II. Canine Heartworm Prevention

Q. Do dogs receive monthly heartworm preventive?

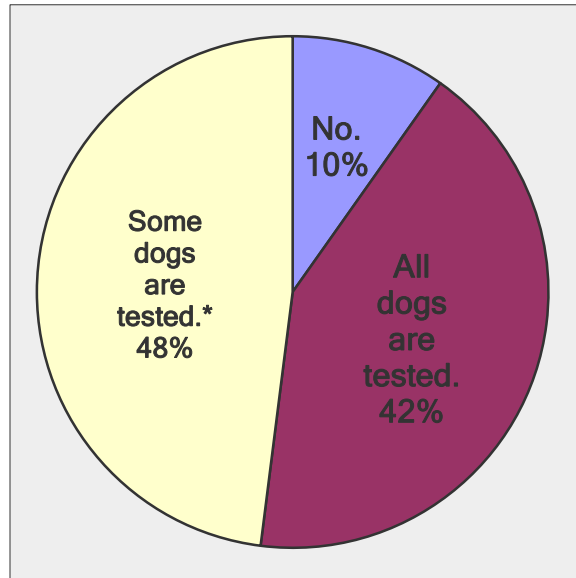


Q. What preventive agent(s) is/are used? (Select all that apply.)



### III. Canine Heartworm Diagnostic Testing

Q. Are dogs tested for heartworm infection?

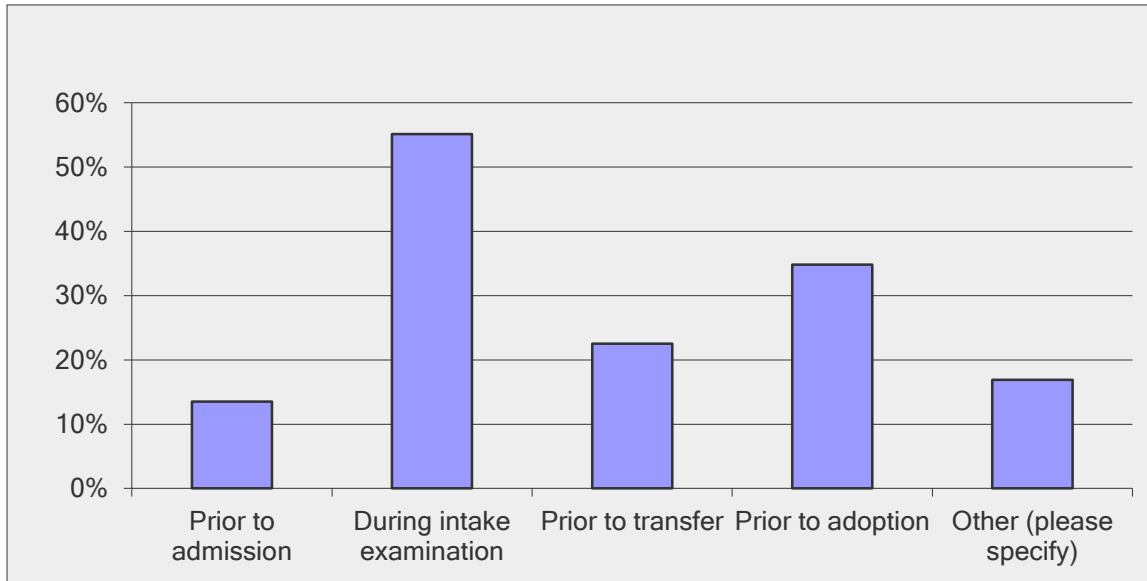


\*Dogs tested include those:

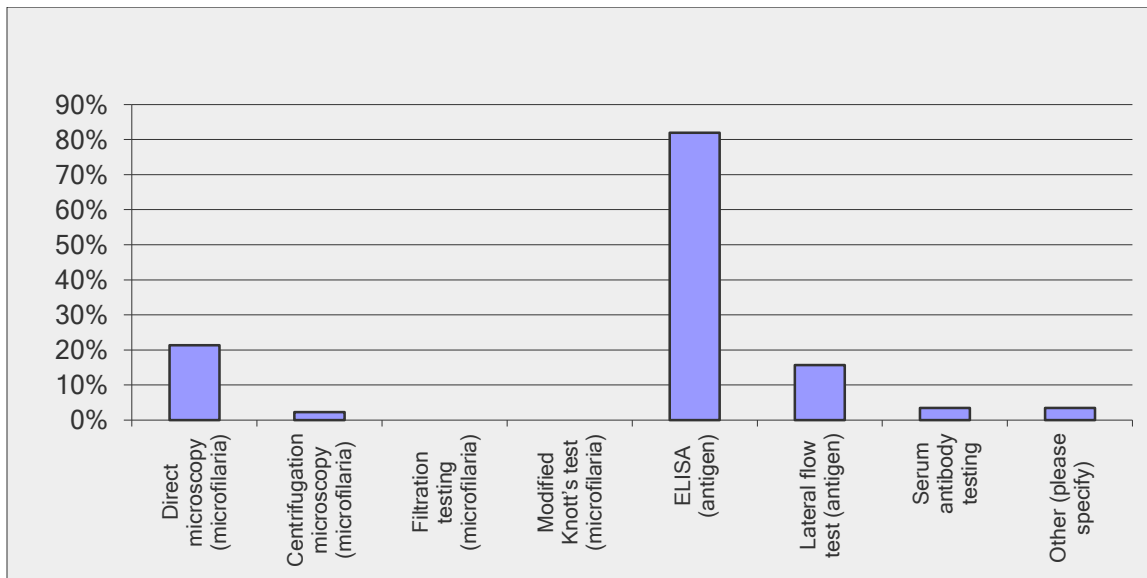
- Originating from endemic areas
- With clinical signs of cardiac or respiratory disease
- Selected for adoption or transfer
- With evidence of previous ownership (e.g., identification tags or microchip)
- Over 4 months of age; over 6 months of age; over 1 year of age; over 7 years of age
- That are neutered
- Being transported to states or organizations requiring testing
- For which an adopter has elected testing for a fee



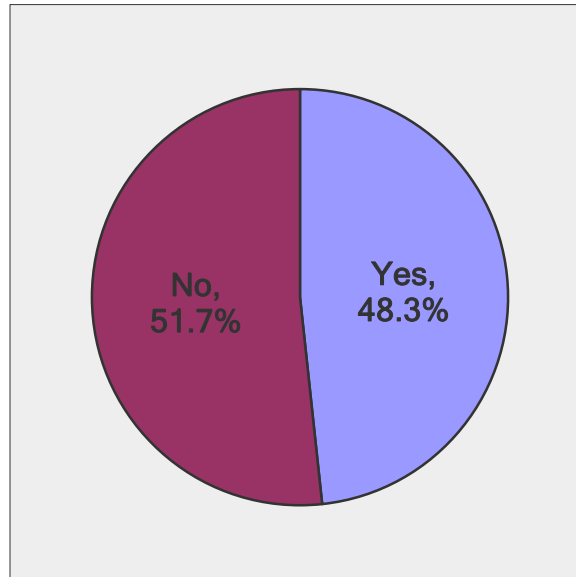
**Q. When are dogs tested? (Select all that apply.)**



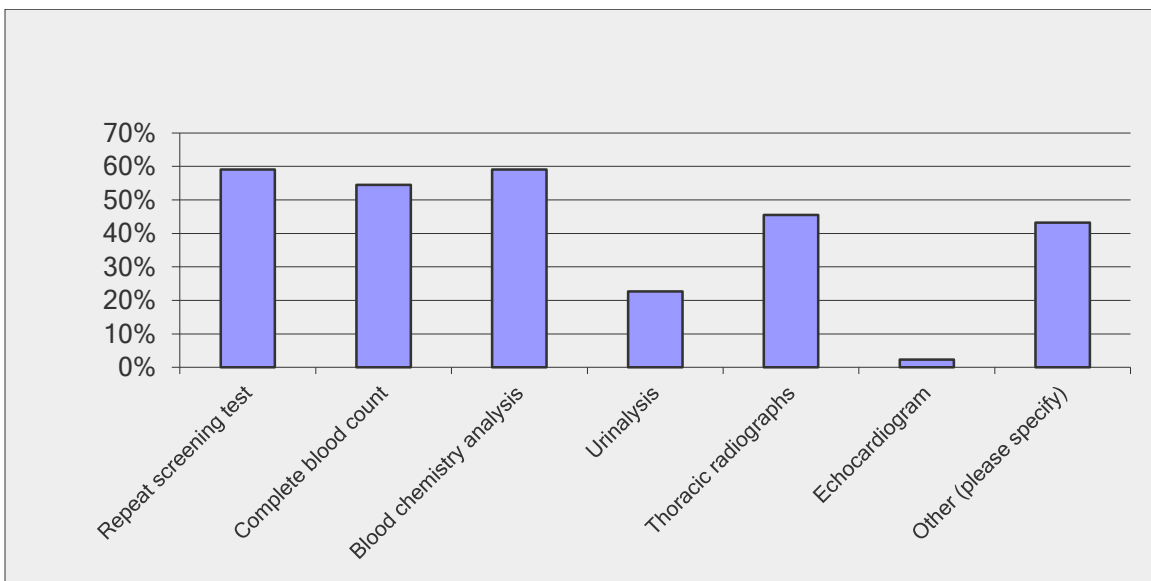
**Q. What type of screening test(s) is/are used? (Select all that apply.)**



**Q. Are additional diagnostic tests pursued following a positive screening test?**



**Q. What diagnostic tests are typically performed? (Select all that apply.)**

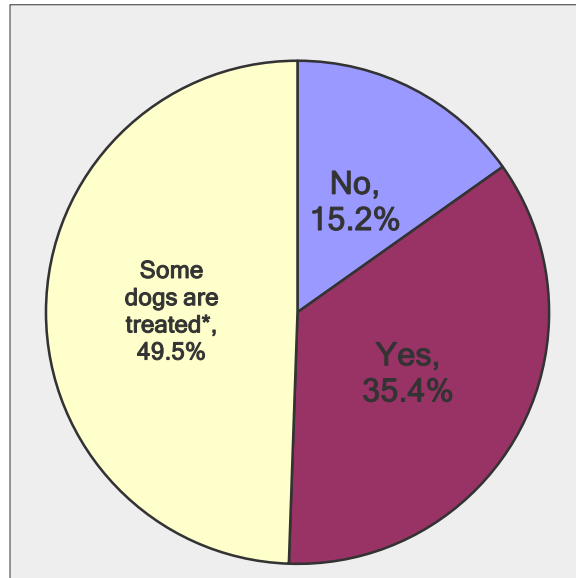


\*Other tests include:

- Microfilarial testing (including direct smear, Knott's test, modified Knott's test)
- Alternate antigen screening test (including on-site and diagnostic laboratory testing)

## IV. Canine Heartworm Treatment

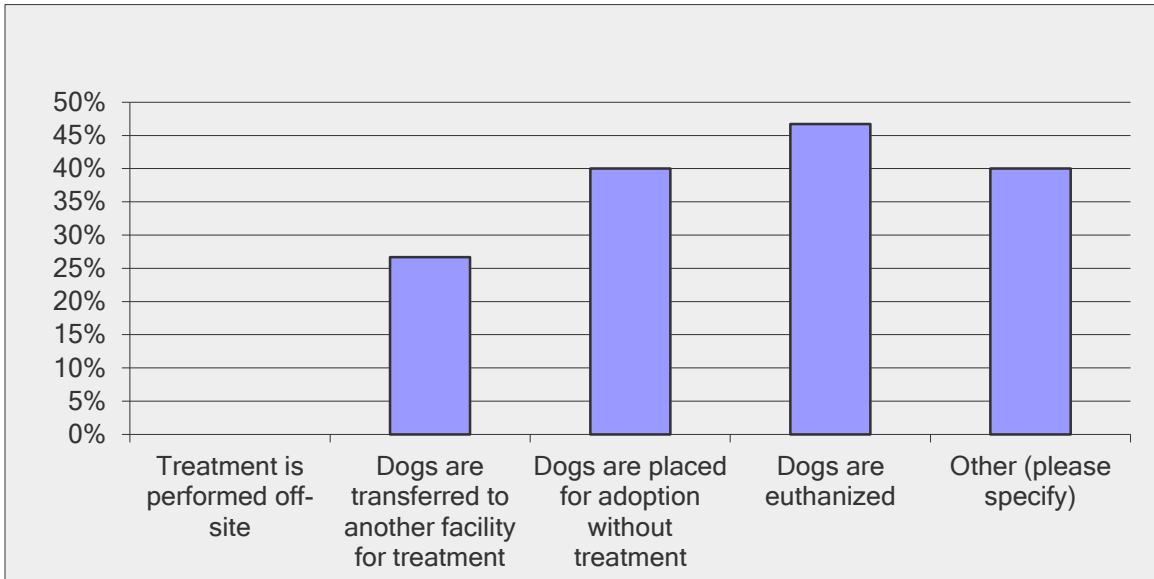
Q. Are heartworm positive dogs treated by your organization?



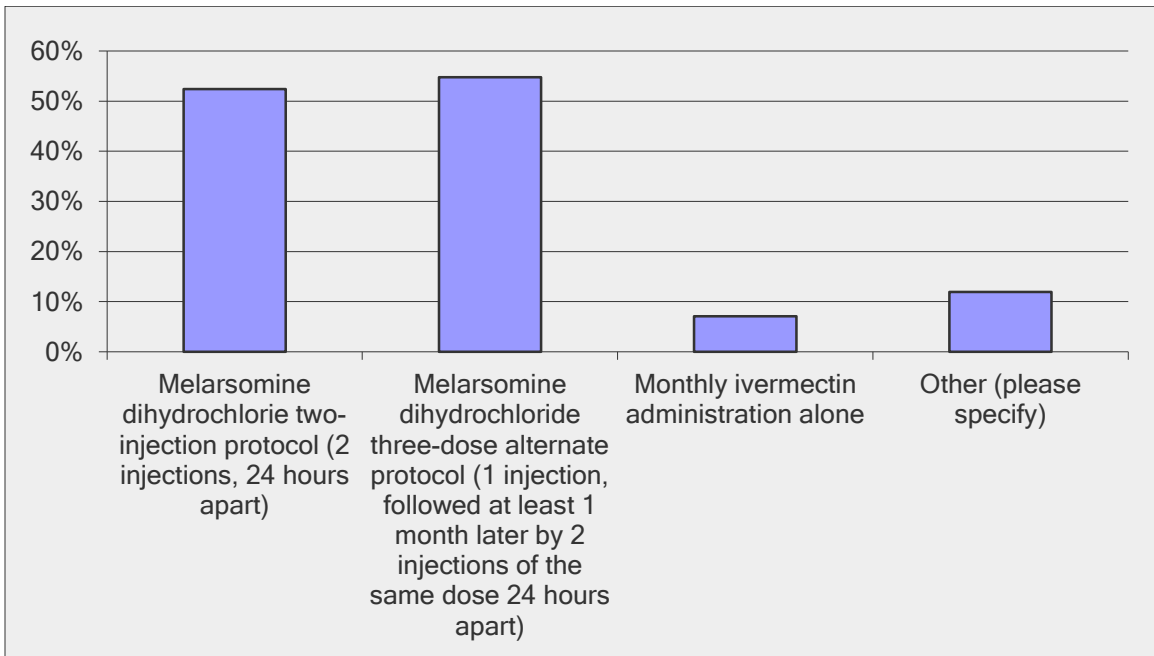
\*Dogs treated include those:

- That are otherwise physically and behaviorally healthy
- For which treatment is available (i.e., maximum limit per year due to resource restrictions)
- That are adopted
- Selected for adoption or transport and a foster home is available
- That have Class 1 or Class 2 disease
- For which a donor has provided melarsomine and/or funds to pay for treatment
- That would otherwise be selected for euthanasia
- Recommended for treatment by staff and volunteers
- That are of a particular size to maximize supply of melarsomine
- That are selected by a partnering organization

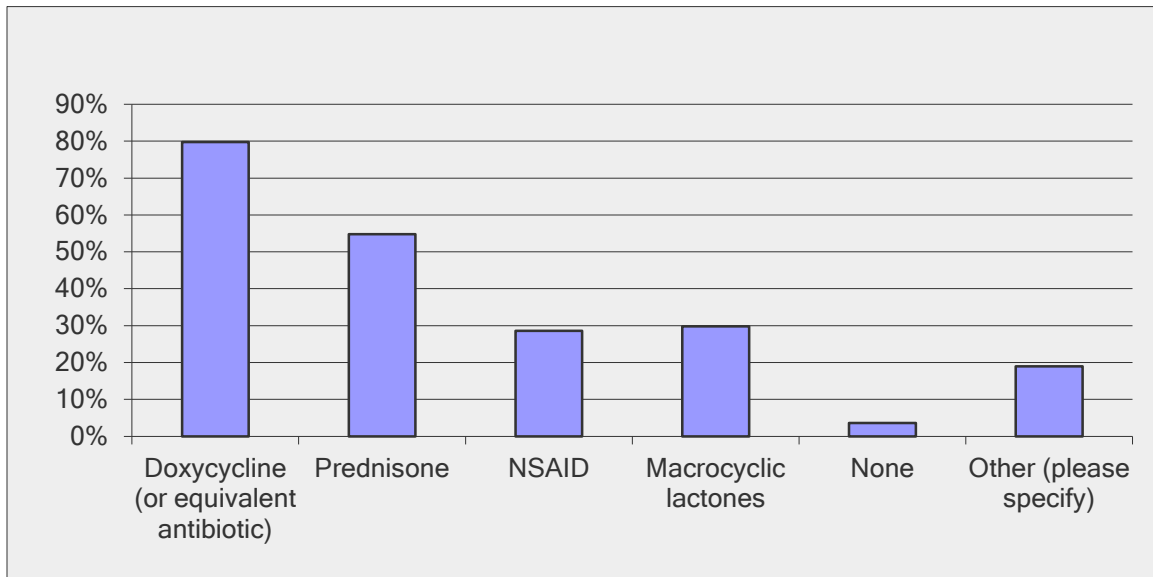
**Q. How are heartworm positive dogs handled? (Select all that apply.)**



**Q. What is the adulticide treatment protocol? (Select all that apply.)**



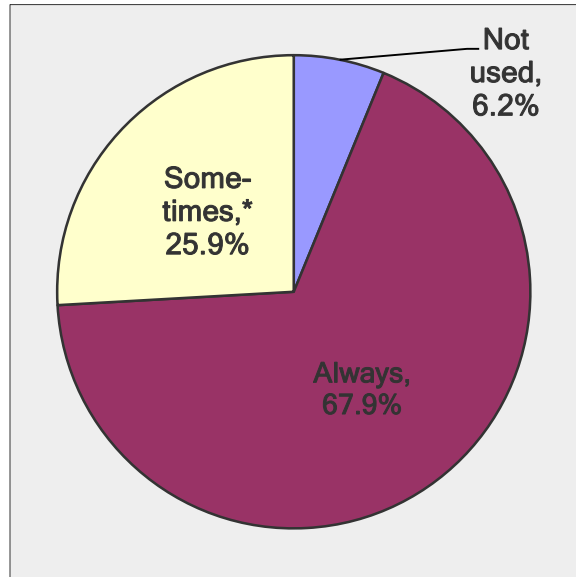
**Q. Which adjunctive treatments are utilized? (Select all that apply.)**



\*Other adjunctive treatments include:

- Monthly selamectin
- Tramadol
- Diphenhydramine
- Dexamethasone

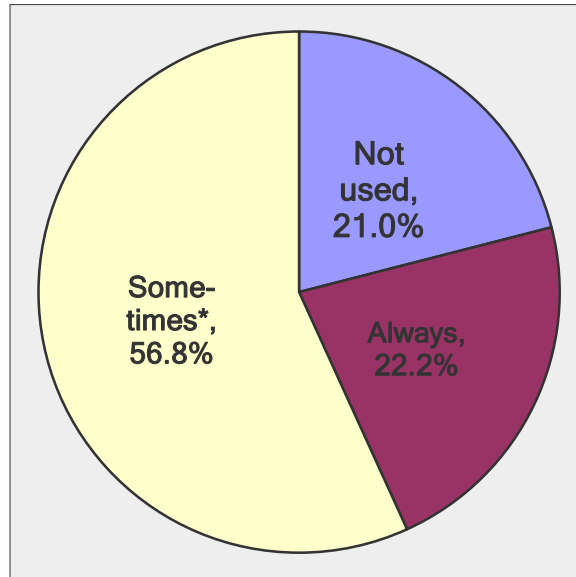
**Q. How often is doxycycline (or equivalent antibiotic) utilized?**



\*Doxycycline is used:

- At doctor's discretion
- For small dogs receiving 3 injections of melarsomine
- If there is a delay in adulticide treatment
- Dogs >8 years of age
- When there is concurrent upper respiratory infection
- If dogs are going to a foster home prior to adulticide treatment
- When melarsomine is unavailable
- When doxycycline is available

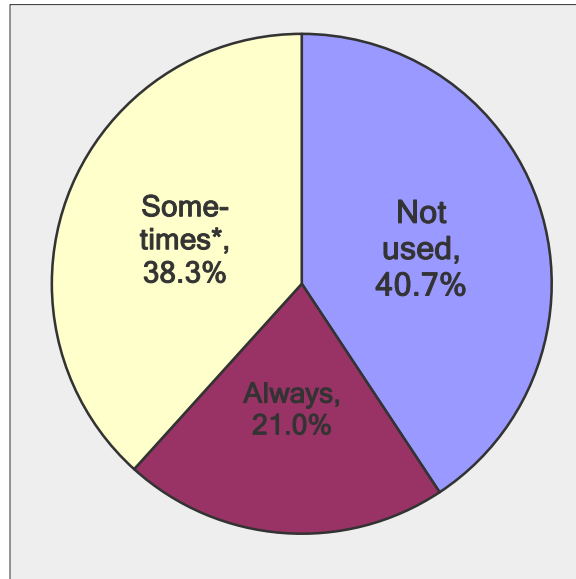
**Q. How often is prednisone used?**



\*Prednisone is used:

- At doctor's discretion
- If post-adulticide reactions are seen
- If clinical signs of heartworm disease are evident
- Depending on worm burden
- Depending on class of disease
- Microfilaria positive dogs
- Abnormal thoracic radiographs
- Severe pain

**Q. How often are NSAIDs used?**

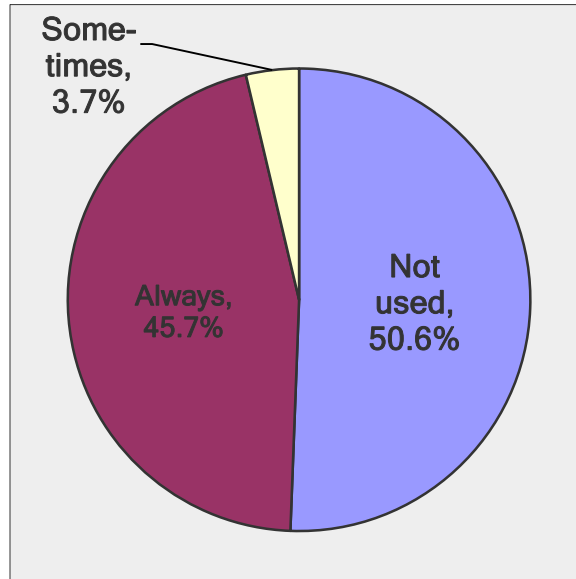


\*NSAIDs are used:

- At doctor's discretion
- If prednisone is contraindicated
- At the time of injection
- If dogs are painful post injection
- Whenever prednisone is not utilized
- If radiographs are normal

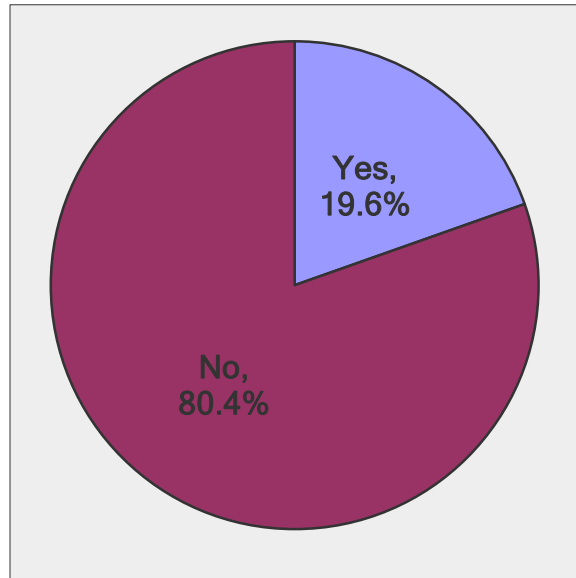


**Q. How often are macrocyclic lactones used?**

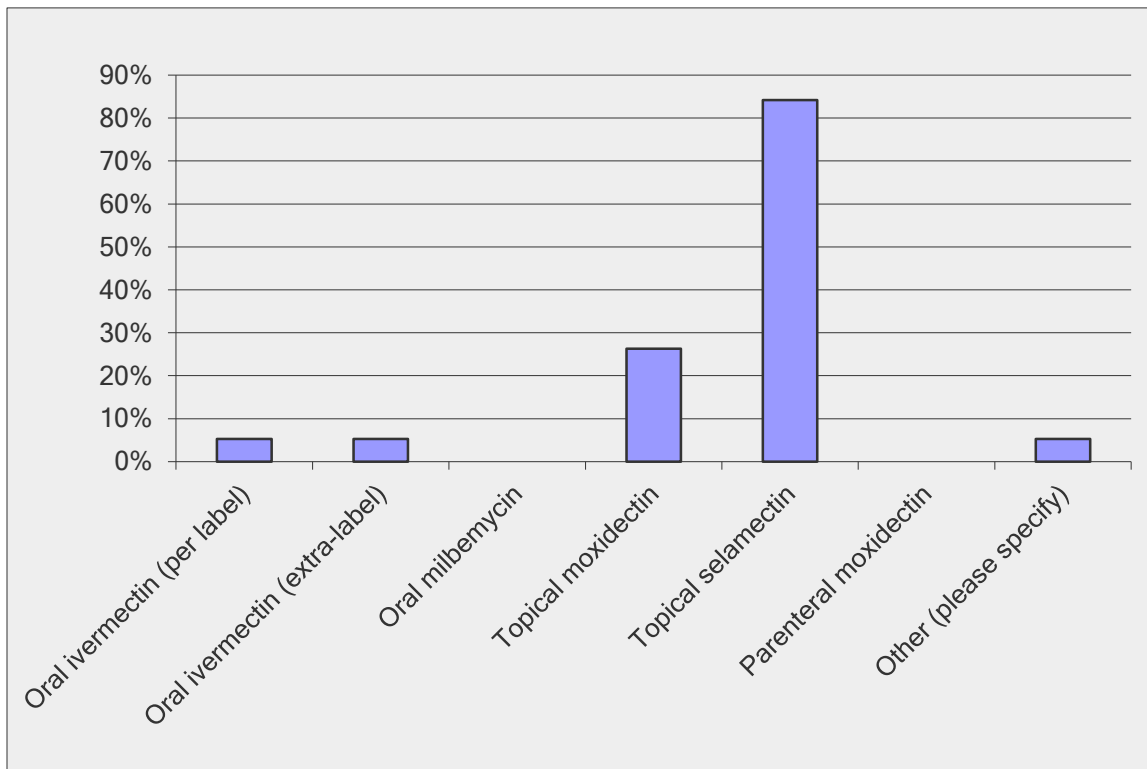


## V. Feline Heartworm Prevention

Q. Do cats receive monthly heartworm preventive?

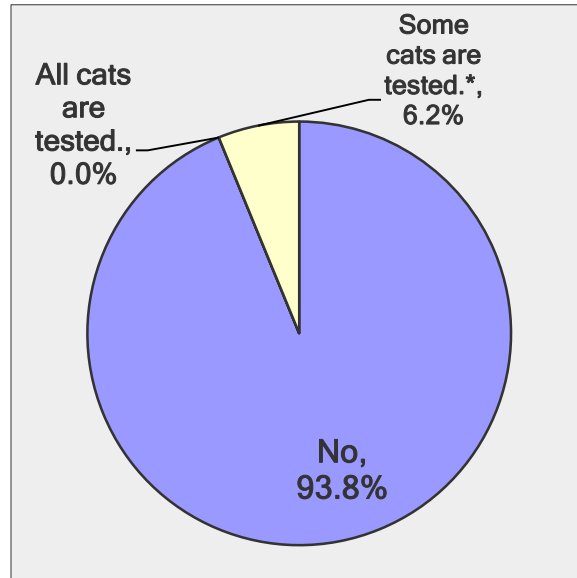


Q. What heartworm preventive agent(s) is/are used? (Select all that apply.)



## VI. Feline Heartworm Diagnostic Testing

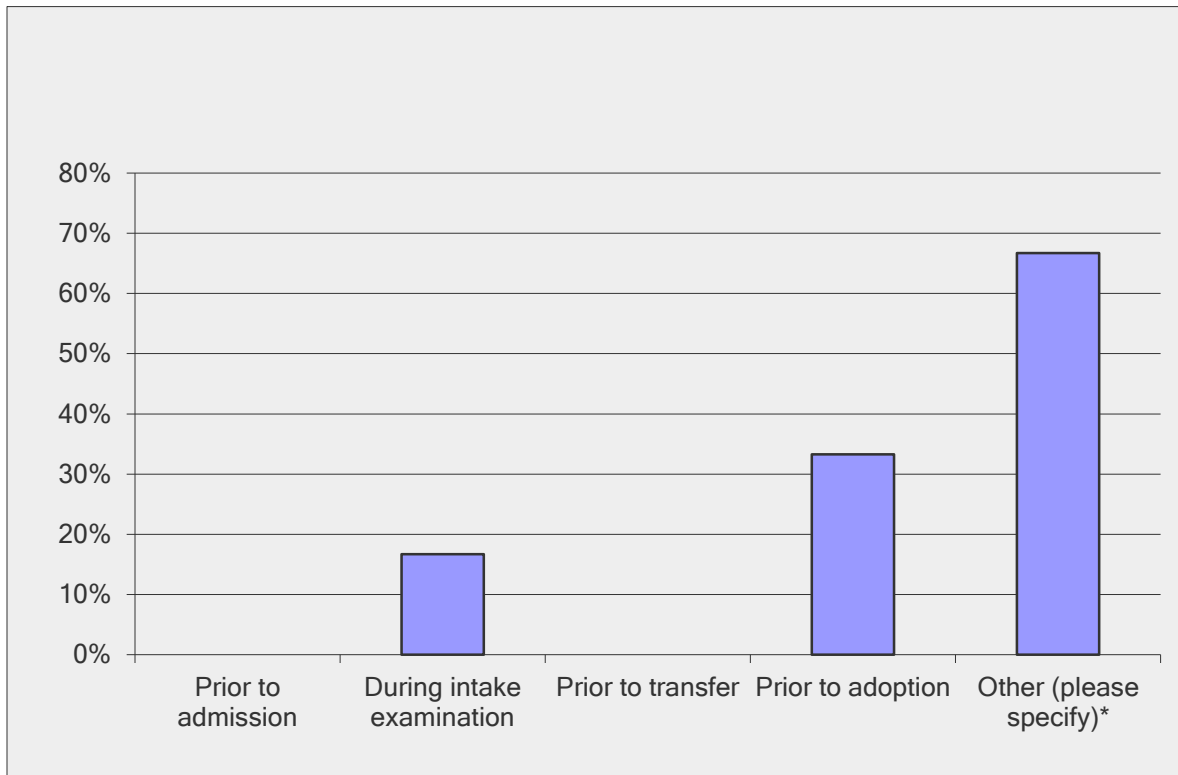
Q. Are cats tested for heartworm infection?



\*Cats tested include those:

- With clinical suspicion of disease
- That are dyspneic or vomiting
- With respiratory disease

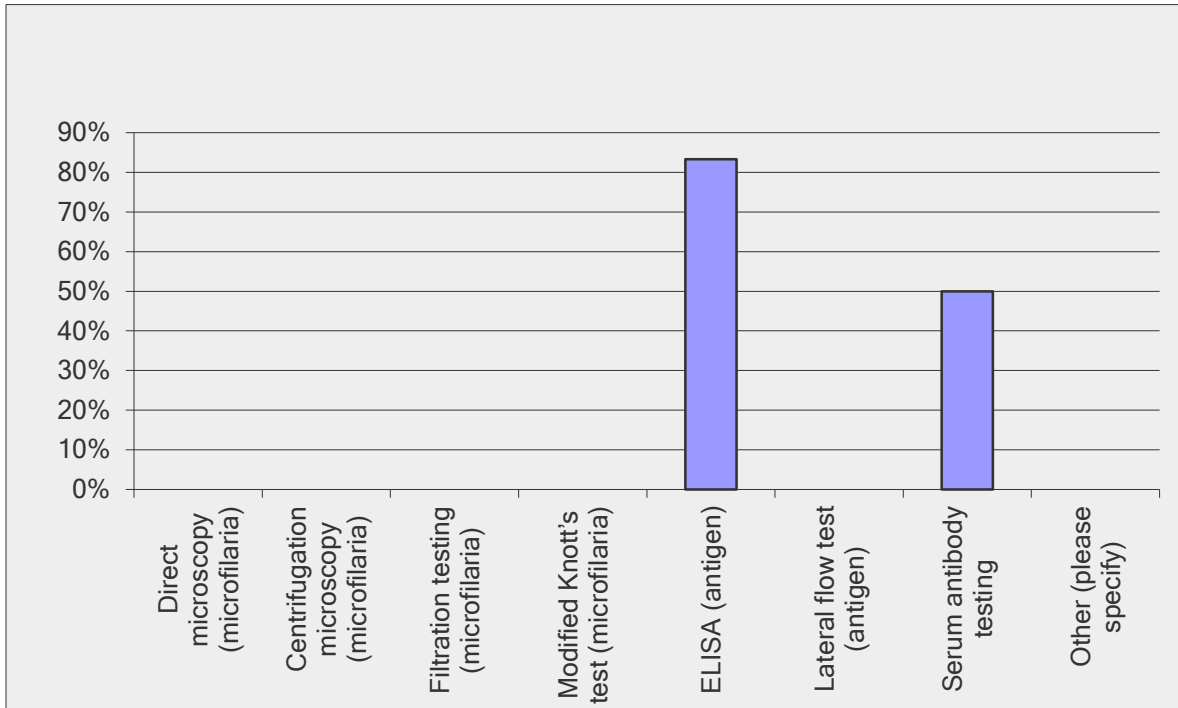
**Q. When are cats tested for heartworm infection? (Select all that apply.)**



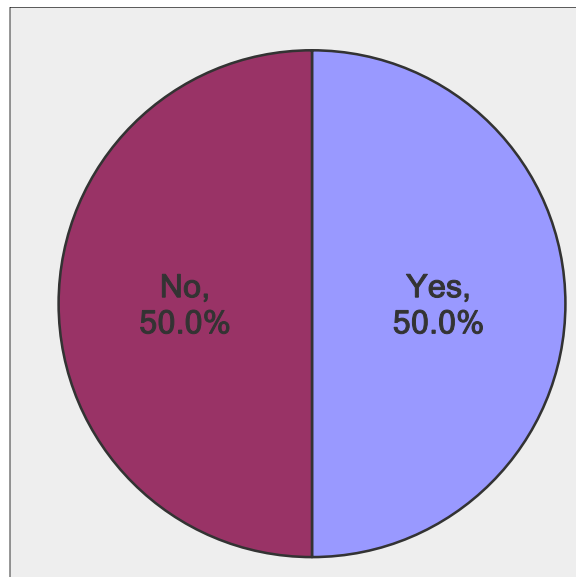
\*Cats are tested:

- Whenever clinical signs consistent with disease are identified

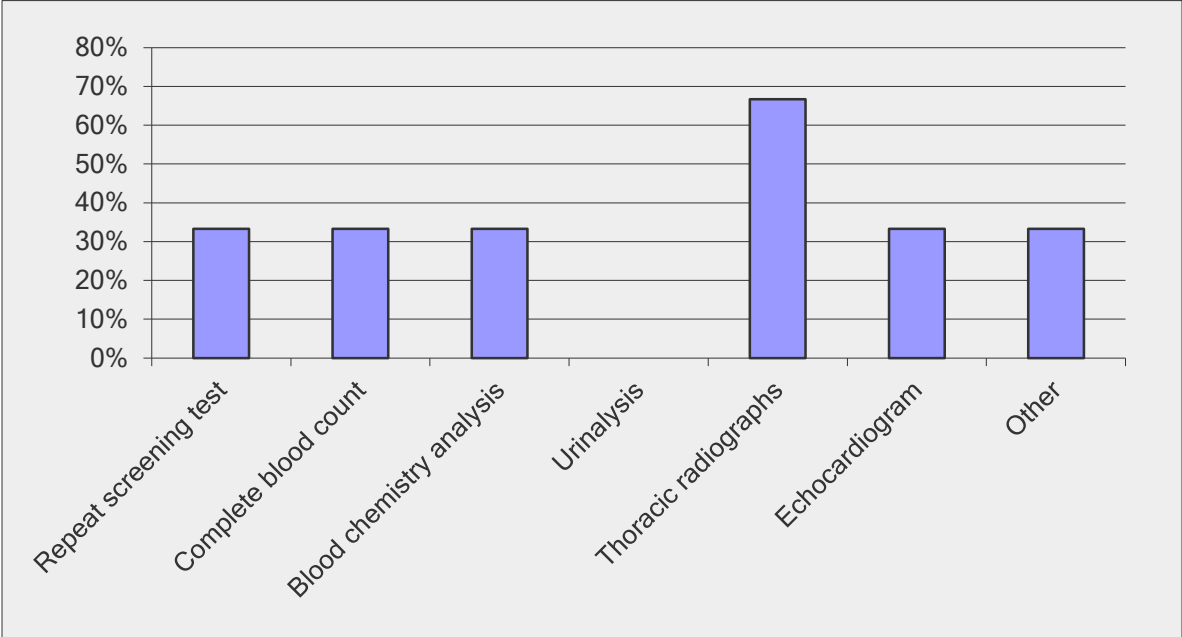
**Q. What type of test(s) is/are used? (Select all that apply.)**



**Q. Are additional diagnostic tests pursued following a positive screening test?**

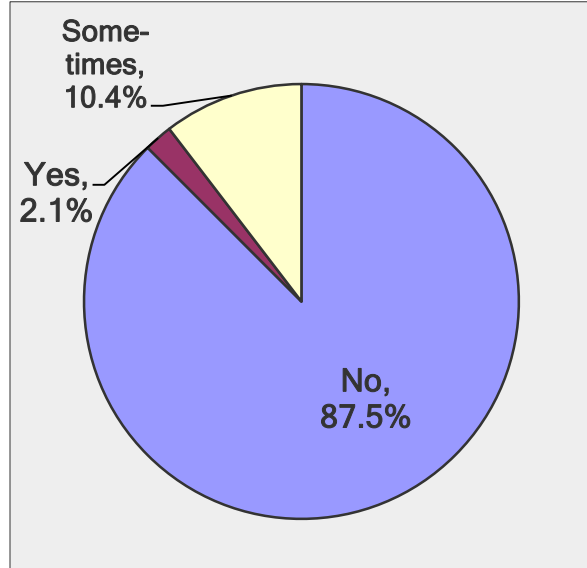


Q. What diagnostic tests are typically performed? (Select all that apply.)

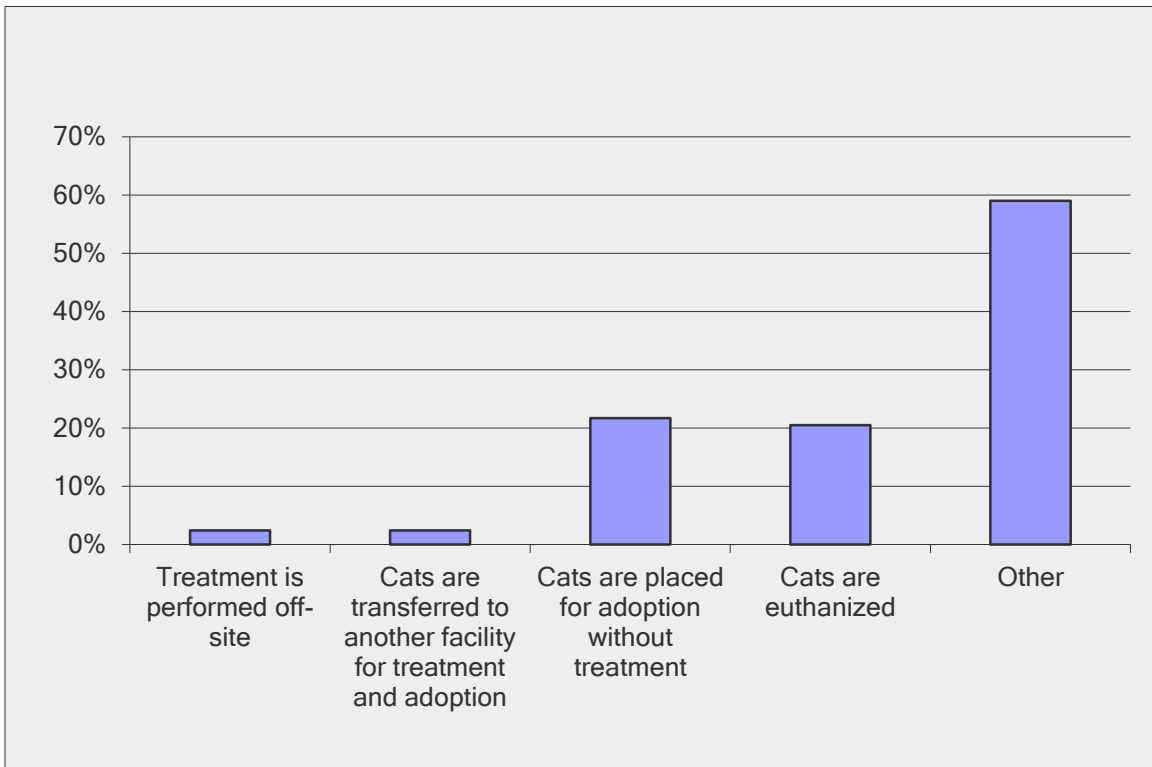


## VII. Feline Heartworm Disease Treatment

Q. Are heartworm positive cats treated by your organization?



Q. How are heartworm positive cats handled? (Select all that apply.)



Q. What treatment modalities are utilized? (Select all that apply.)

