

Euthanasia in North Carolina Companion Animal Shelters: Interviews with Decreased-Rate Facilities and Comparative Analysis

By

KATIE O'CONNOR SIRAKOS

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Executive Summary

Data collected through North Carolina's Spay and Neuter Reimbursement Program indicates statewide euthanasia rates hover in the 70% range, and this translates into consumption of a tremendous amount of public and private resources. Even so, statewide rates have steadily decreased since data collection began in 2002. This study identified North Carolina companion animal facilities that decreased their euthanasia rates between 2004 and 2008, and then interviewed staff members at these facilities to learn what intentional and unintentional factors they believe contributed to this decrease. In addition, a comparative analysis was conducted to assess differences between decreased-rate facilities and non-decreased-rate facilities. Interviewees' most commonly mentioned factors include the formation of relationships with rescue groups, loyalty and consistency of core staff members, maintenance of an active Internet presence, and the use of other forms of advertising, such as local television spots, radio ads, and newspaper features. Interviewee insight led to the formation of a few recommendations, including recommendations that facility leadership carefully develop guidelines before initiating relationships with rescue workers, provide staff with education around compassion fatigue, and discuss the potential for collaborative toolkit development.

Background and Research Question

Companion animal euthanasia is a difficult issue to research and discuss because it intersects with many important emotional and societal values. It is, however, a significant financial burden on the public. According to one report, “[...] authors have estimated that between one tenth and one fourth of the companion animal population is destroyed each year, making euthanasia the leading cause of death in companion animals. The same authors have estimated that the cost of this form of animal control in monetary terms alone annually exceeds 500 million dollars” (Lepper, Kass, and Hart, 2002).

In North Carolina, it is difficult to determine exactly how many animals are euthanized each year. The state collects data from facilities that elect to participate in a spay and neuter reimbursement program and based on that data alone, it appears almost 1.6 million dogs and cats were euthanized between 2002 and 2008 (Williams, 2009). On average, these facilities euthanize approximately 70% of the animals they admit (Williams, 2009). It is important to remember that this number represents only some of the shelter facilities, animal hospitals, and veterinarians engaged in euthanasia in the ordinary course of business. The practice of euthanasia obviously consumes a tremendous amount of public and private resources and destroys many animals.

As of now, publicly available research on euthanasia rates in North Carolina is limited to a study of localized euthanasia-reduction strategies (Reed and Pierce, 2007). North Carolina’s public health website, the current location of the data collected through the spay and neuter reimbursement program, indicates an overall decrease in statewide euthanasia rates each year (from a 78% average in 2002 to a 70% average in 2008). Looking at these figures, it is apparent there has been a systematic, though not uniform, decrease in euthanasia rates across the agencies submitting data.ⁱ*This study identified North Carolina companion animal facilities that decreased their euthanasia rates between 2004 and 2008, and then interviewed staff members at these facilities to learn what intentional and unintentional factors they believe contributed to this decrease. The objective was to produce an inventory of self-identified promising strategies by overall frequency and by individual facility.*ⁱⁱ In addition, a comparative analysis was conducted to assess differences between reduced-rate facilities and non-reduced-rate facilities. Preliminary research in this field should assist other facilities in the state working to reduce euthanasia rates.

Methodology

I approached this research question in four steps. First, I conducted an analysis of publicly available data to calculate euthanasia rates for reporting facilities. Second, I used the data to identify facilities with higher and lower euthanasia rates. Third, I used the data to identify a group of facilities that have been successful in reducing euthanasia rates and then I conducted interviews to gather qualitative data about factors that may have had an impact on the facility’s success. Finally, I used the data to evaluate several characteristics (such as poverty rate and operating expenses) to see if trends emerged among the facilities that were more and less successful in reducing rates.

Calculating Euthanasia Rates

Using North Carolina's statewide public health website, I collected figures on the number of cats and dogs admitted and euthanized at each reporting facility from 2004 to 2008.ⁱⁱⁱ I then divided the number of cats and dogs euthanized by the number of cats and dogs admitted to obtain a euthanasia rate for each facility for each year.^{iv}

Identifying Facilities with Higher/Lower Rates

I conducted a +/- analysis for each shelter using the 2004 and 2008 euthanasia rates.^v This allowed me to do a uniform comparison across shelters to see which facilities had higher or lower euthanasia rates than they did in 2004. Based on this analysis, I was able to identify facilities to use in the next two stages of my research.

Conducting Interviews with "Successful" Shelters

Based on the analysis described above, I identified three criteria for determining which facilities I would rank as "successful."

- Significant percentage decrease in euthanasia rates. I define this as at least 5% for both species (cats and dogs), and one species must be 10% or more.
- Data for at least three years of the five-year study period are available.
- A line graph of the facility's euthanasia rates shows a steady decrease over time.^{vi} This suggests lowered rates are not the result of abnormal events.

I highlighted each facility that met the "percentage" criteria and "years of data gathered" criteria. I then did line graphs for each of those facilities and selected the ones I believe met the "steady decrease" criteria.^{vii} I contacted a staff member at each of these facilities, and arranged either a phone or in-person interview at seven of the ten. I was unable to secure interviews with individuals at the other three facilities.^{viii}

Interviewees at the chosen facilities were asked two main questions:

"Your facility has documented a decrease in cat and dog euthanasia rates from x percent in year to x percent in year. What *intentional* strategies/practices do you believe contributed to this decrease in euthanasia rates?"

"What *unintentional* factors or events do you believe contributed to this decrease in euthanasia rates?"

Statistical Analysis of Key Differences

For the final step of my research, I created a facility-level database using the 10 facilities selected for the interview part of my research (Group A) and 20 facilities randomly selected from the rest of the facility population (Group B).^{ix} I collected information on the following variables: "Facility Rate of Change in Euthanasia Rate"^x, "Total Operating Expenses," "Yearly Facility Cost per Animal," "County Percentage Change in Poverty Rate 1990-2000," "County Percentage Change in Population 1990-2000," "County Poverty Rate 2000," and "Urban/Rural County Classification".^{xi,xii} I performed a binary logistic regression and an ordinary least squares regression on this dataset.^{xiii}

Limitations

The primary limitations have to do with the data collection system in place during the 2004-2008 time period. Because data reporting is voluntary, there were many gaps in the data I was able to collect (years when facilities did not submit information). Additionally, my dataset is in no way a comprehensive set of data from all North Carolina shelter facilities. There are undoubtedly many facilities in the state that have never submitted information to the reimbursement program. Finally, it is difficult to know with certainty how accurate the reported information is. While I do not doubt the good intentions of facility staff, I know many facilities are strained by daily operations (and a lack of staff and money) and unable to make data collection a top priority. Thus, the figures I used in my initial calculations may not be entirely accurate.^{xiv}

Another limitation relates to the nature of the interview data. The inventory drawn from the interview data presented below represents only those things specifically mentioned by interviewees; if a facility's name is not connected to a strategy/practice/factor it does not mean the facility is not doing the strategy in question, only that *the interviewee(s) did not mention it*. These interviews represent the thoughts of 1-3 people at the facility, and it is difficult for 1-3 people to think of every item meriting inclusion.

Finally, as was addressed by one interviewee, the categories on the state reporting forms sometimes lead to misleading information being reported. The example cited is the use of a singular "adopted out" category to capture all animals not euthanized or reclaimed. The interviewee stated more animals were being transferred out of the facility (selected by rescue groups) than adopted out, but facility staff members were unable to reflect this on the form.

Findings

Interview Findings

Below is a chart of promising strategies listed by common themes and facility code.^{xv} A complete listing of individual facility inventories may be found in Appendix E.^{xvi} Three of the seven facilities are nonprofits under contract with the county where they are located. The other four are county-owned facilities. The facilities interviewed reported 2008 total operating expenses ranging from \$110,000 to \$1,260,324.^{xvii} Four facilities interviewed reported 2008 operating expenses under \$500,000.

Category	Strategy/Practice/Factor	Description
Operational and Environmental	New Facility/Expansion	Improved capacity to house animals. More inviting to public. (CC, JC, WC, UAC)
	Improved Business Operating Procedures	Creation of standard operating procedures. Changed euthanasia methods. Offered adopters additional services (microchipping). (CC, BC, WC)
	Change in Facility Leadership	Increased emphasis on adoption. (CC, JC, APS)
	Loyalty and Consistency of Core Staff Members (Employee Buy-In)	Facility staff and field officers. (JC, WC, APS, GC, UAC)
	Formation of a Separate 501c3 (Nonprofit) Organization	Gives increased ability to fundraise. (JC, APS, UAC)
	Shift in County Resource Allocation	Increased emphasis on adoption. (JC, WC, APS)
	Changing Community Attitudes	Increased emphasis on adoption and animal ownership from citizens and/or elected officials. (JC, GC, UAC)
Outside Partnerships	Initiation of/Increase in Involvement with Rescue Groups	Reduced fees/free to rescues. Rescue Appreciation Events. (JC, BC, WC, APS, GC, UAC)
	Initiation of Involvement with Transport Groups	Pilots 'n Paws (JC, WC, APS, GC)
	Initiation of/Increase in Involvement with Non-Rescue Groups	Petsmart. Citizenry (serving on Animal Control Task Force). Inmates. State Veterinary Department. (CC, JC, BC, GC)
	Participation in Adoption Events	Petsmart (JC, APS, UAC)
Staff Advertising Efforts	Initiation of/Increase in Internet Presence	Petfinder. Facebook. Facility Website. E-mail. (JC, WC, APS, GC, UAC)
	Initiation of/Increase in Other Forms of Advertising	TV. Radio. Newspaper (Adopt-a-Pet feature). Free billboards. (CC, JC, BC, GC, UAC)
Efforts to Curb Animal Birth Rates ^{xviii}	Spay and Neuter Policies	Refundable adoption fee with spay/neuter. Low-cost spay neuter services. Mobile spay/neuter. Animals free to rescues w/ spay/neuter agreement. (JC, APS, GC)

Key: CC= Cumberland County, JC= Johnston County, BC= Bladen County, WC= Warren County, APS= Animal Protection Society of the Northern Piedmont, GC=Gaston County, UAC= United Animal Coalition

The most frequently mentioned strategy/practice/factor was “Initiation of/Increase in Involvement with Rescue Groups”. Six of seven interviewees indicated facility involvement with rescue groups, both locally and out-of-state, decreased the number of animals staff needed to euthanize. Five of seven interviewees cited “Initiation of/Increase in Internet Presence,” “Initiation of/Increase in Other Forms of Advertising,” and “Loyalty and Consistency of Core Staff Members.” The most frequently mentioned website was Petfinder and local television spots, radio ads, and newspaper features (particularly “Pet of the Week” items) topped the list of other forms of advertising.

Data Analysis Findings

After conducting the staff interviews, I ran an ordinary least squares regression and a binary squares regression using data from the 10 facilities chosen for interviews plus 20 randomly selected facilities not chosen for interviews. These 30 facilities represent 34% of the applicable population (the 88 facilities that submitted at least three years of data).

The ordinary least squares regression model did not prove strong enough to provide any clear, conclusive results.

In the binary logistic regression, Group A (coded as 0) is the group of facilities that reduced their euthanasia rates and Group B (coded as 1) is the group of facilities that did not reduce their euthanasia rates. This “0,1” coding is the dependent variable, and the independent variables are used to assess differences between 0 and 1. The analysis found four statistically significant variables worthy of discussion: “Total Operating Expenses,” “County Percentage Change in Poverty 1990-2000”, “County Percentage Change in Population 1990-2000”, and “Urban/Rural County Classification”.^{19,20} Due to space constraints, the body of the paper focuses on findings around the “Total Operating Expenses” variable.

The models found in Appendix G demonstrate every one unit (dollar) increase in total facility operating expenses causes a county’s facility to have 1.003 greater odds of being in Group A versus Group B. This odds ratio is only slightly above 1, the value where there is no association between the independent variable (operating expenses) and the dependent variable (membership in Group A versus Group B).

When the unit of analysis was increased to tens of thousands of dollars in a separate model (the third output chart under Appendix G), results indicate a one unit (ten thousand dollar) increase in total operating expenses causes a county facility’s odds of being in Group A versus Group B to increase slightly to 1.015. This suggests increased operating expenses do play a role in upping a facility’s odds of being in Group A versus Group B, but it is not a strong relationship. This may be due to mediating forces, such as increases in county population growth and admitted animals occurring simultaneously with increases in operating expenses. This would likely depress the effect increased funding may otherwise have on decreasing euthanasia rates.

To analyze the data from another angle, I averaged “Total Operating Expenses” for Group A and Group B for the 2004-2006 time period and the 2008 time period.²¹ For 2004-2006, Group A reported an average of \$423,340.84 in total operating expenses and Group B reported an average of \$246,925.61. For 2008, Group A reported an average of \$564,850.41 in total operating expenses and Group B reported an average of \$256,338.11.²² This indicates there was a significantly larger increase in total operating expenses across Group A relative to Group B.

Recommendations

To state there is a silver bullet approach to curbing euthanasia rates would be to do a disservice to the complex reality of animal overpopulation and its many mediating forces. With that being said, these recommendations are intended to provide a starting point for conversations and consideration. Interested parties are encouraged to read the full interviews provided in Appendix E.

1) Adopt Guidelines for Working with Rescue Groups

Rescue groups create expanded capacity for an area's adoptable animal population, and provide assistance to shelter facility staff in other ways (such as posting animal information on the Internet). Interviewees noted facility staff should create specific guidelines regarding screening, veterinary care, costs to rescues, and so on before initiating relationships with animal rescue workers. Additionally, I recommend adopting a plan for showing appreciation to rescue workers. As people accustomed to working with volunteers know, showing appreciation is an effective tool for encouraging motivation and retention.²³

2) Provide Staff Education Around Issues of Compassion Fatigue

Five of seven interviewees noted the effect loyalty and consistency of core staff members has had on decreasing their facilities' euthanasia rates. In order to retain these employees and keep their morale high, leadership should pay special attention to employee concerns that are specific to the animal control community, such as compassion fatigue.²⁴ In their book, *Compassion Fatigue in the Animal-Care Community*, Figley and Roop state, "[...] stress and compassion fatigue are found in workers throughout shelters and are not limited only to those performing euthanasia" (43). This can impact employees' emotional states and work performance, leading to problems such as "decrease in [work] quantity/quality", "detachment", "staff conflicts" and "frequent job changes" (23). If leadership identifies signs of compassion fatigue or other manifestations of job-related stress, they should take immediate action to provide their staff members with education and encourage workplace conversations on the topic.

3) Discuss the Potential for Collaborative Toolkit Development

Professionals in this field have rich experience that could be broadly valuable if shared. I recommend those who have developed successful strategies discuss potential collaboration with professionals at other facilities to create a toolkit for field-wide dissemination. Such a toolkit could, for example, include resources about developing a Petfinder website or otherwise increasing a shelter's marketing presence, working with local media for "pet of the week" programs, or developing productive collaborations with rescue groups.

4) Modify Statewide Reporting Forms

The process for administering the statewide spay and neuter program is undergoing changes²⁵, and one change I recommend is the creation of a category designating "Animals Transferred Out" on state reporting forms, rather than having these animals reported under the "Animals Adopted" category. This would provide better data for future state level analysis, and would also improve the quality of the information stored at the individual facility level.

Conclusion

This research represents an initial attempt to analyze a new, but growing, body of information about North Carolina companion animal facilities. It is my hope information provided by interviewees will prove useful to staff working in other shelter facilities and comparative data will be valuable to both state and local officials.

ⁱ Analysis of euthanasia rates of Group A (euthanasia rate-reducing facilities) versus Group B (non-euthanasia rate-reducing facilities) confirms a systematic decrease that is not uniform across the shelter population submitting data. In 2004, Group A's average euthanasia rate was 82.4, and Group B's average euthanasia rate was 73.6. In 2008, Group A's average euthanasia rate was 57.4, and Group B's average euthanasia rate was 77.3. These figures also indicate facilities in Group A (facilities that reduced their euthanasia rates) began the 2004 time period with euthanasia rates relatively equal to their peers in Group B (facilities that did not reduce their euthanasia rates).

ⁱⁱ A complete listing of individual facility inventories may be found in Appendix E.

ⁱⁱⁱ Because data submission is voluntary, information for each facility is not available for each year.

^{iv} A chart with all euthanasia rate calculations may be found in Appendix A.

^v A chart with +/- calculations may be found in Appendix B.

^{vi} Line graphs for all facilities selected for interviews may be found in Appendix C.

^{vii} The facilities I selected are as follows: Buncombe/Asheville Humane Society, Animal Protection Society of the Northern Piedmont, Cumberland County Animal Services Office, Gaston County Animal Control, United Animal Coalition, Halifax County Environmental Health/Animal Control, Johnston County Animal Control, Lincoln County Animal Control, and Warren County Animal Control. I also included one exception, Bladen County Animal Control; the facility did not meet the "steady decrease" criteria for cats (86% in 2004 to 61% in 2005 to 76% in 2006) but had an exceptional decrease for dogs (69% in 2005 to 18% in 2008).

^{viii} I was unable to secure interviews with staff representatives at Buncombe/Asheville Humane Society, Halifax County Environmental Health/Animal Control, and Lincoln County Animal Control.

^{ix} I assigned each of the 104 facilities that submitted data during the 2004-2008 time period a number in alphabetical order (by county, not facility name), and then used random.org to select 20 facilities. If the facility was already represented in Group A or had less than 3 years of data available for the 2004-2008 time period, I "threw out" that number and randomly selected another. Out of 104 total facilities, 78 were not represented in Group A and had 3 or more years of data available for the 2004-2008 time period. This is the group Group B was selected from.

^x The rate of change from year 1 to year 2 was calculated by subtracting year 1's rate from year 2's rate and then dividing by year 1's rate.

^{xi} I obtained data on yearly facility operating expenses and yearly facility cost per animal from the annual Spay and Neuter Reports on the state's public health website. I obtained data on county percentage change in poverty rate 1990-2000, county percentage change in population 1990-2000, county poverty rate 2000, and urban/rural county classification from the North Carolina Rural Center's website. Unfortunately, my data collection phase occurred shortly before the results of the 2010 Census were revealed. Thus, data for these variables do not align chronologically with the 2004-2008 data collected from shelter facilities.

^{xii} The database with sources for all the information used to run the binary logistic regression and the ordinary least squares regression may be found in Appendix F.

^{xiii} The output from these regressions may be found in Appendix G.

¹⁴ For more information on shelter data collection issues, see Wenstrup & Dowidchuk (1999).

^{xv} Included in this chart are two events occurring before 2004: the formation of a separate 501(c)(3) and a move to a new facility. Interviewees singled these factors out as impacting the 2004-2008 time period, and I believe their occurrence before that time period to be irrelevant.

^{xvi} Also included in Appendix E are strategies and factors mentioned by interviewees as being influential from 2008 till the present. I included these in designated sections due to the additional value I believe they may create for readers.

^{xvii} United Animal Coalition did not submit operating expense information for 2008, so their figure is from the 2007 report.

^{xviii} Facility efforts to curb animal birth rates through spay and neuter programs were not specifically asked about, and may not have been considered includable by some interviewees for an interview dealing with the 2004-2008 timeframe. Still, it emerged as a theme and warranted inclusion, with the recognition that frequency of involvement may be undercounted.

¹⁹ Regression output information may be found in Appendix G.

²⁰ Interpretation information for the “County Percentage Change in Poverty 1990-2000” variable, “County Percentage Change in Population 1990-2000” variable, and the “Urban/Rural County Classification” variable may be found in Appendix H.

²¹ The 2004-2006 range had to be used because not all facilities included total operating expense information for every year.

²² Figures for United Animal Coalition were removed because they represented an outlier, skewing the averages. The facility reported yearly operating expenses of \$105,026.67 in 2005 and \$1,260,324.00 in 2007. This increase was significantly larger than any reported by another facility in the dataset.

²³ According to a 2004 study by the Urban Institute, “Charities interested in increasing retention of volunteers should invest in recognizing volunteers [...]” (www.urban.org/publications/411005.html). There are many books on volunteer development available. One well-regarded text is *Volunteers: How to Get Them, How to Keep Them* by Helen Little.

²⁴ Wikipedia defines compassion fatigue as the following: “Compassion fatigue (also known as a secondary traumatic stress disorder) is a condition characterized by a gradual lessening of compassion over time. It is common among trauma victims and individuals that work directly with trauma victims. [...] Sufferers can exhibit several symptoms including hopelessness, a decrease in experiences of pleasure, constant stress and anxiety, and a pervasive negative attitude.

This can have detrimental effects on individuals, both professionally and personally, including a decrease in productivity, the inability to focus, and the development of new feelings of incompetency and self-doubt.”

²⁵ From the North Carolina Spay & Neuter Program website, “On July 1, 2010, the N.C. General Assembly passed legislation to transfer the statewide Spay Neuter (SN) Program from Veterinary Public Health (VPH) to the N.C. Department of Agriculture & Consumer Services (NCDA&CS), effective October 1, 2010. The reorganization includes some changes to the Spay Neuter (SN) Program, including: 1. The fee for an animal lover’s vanity license plate increased from \$10 to \$20. This helps fund the SN program. [...] The plates are not listed as “I Care.” 2. Rabies tag sales no longer fund the SN program. 3. Low-income persons are still eligible to apply for reimbursement of direct costs for spays and neuters of cats and dogs; however, the program is limited to those whose family income level is below 300 percent of the federal poverty level. 4. The General Assembly is authorized to appropriate funds for the SN program. 5. The annual euthanasia report is now required to be submitted by March 1st of each year instead of August 1st. 6. NCDA&CS may create a study committee to evaluate the animal overpopulation issue in NC.”