Milwaukee Area Domestic Animal Control Commission

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Summary

This report was developed while working with shelter staff and administrators during a consultation with the Milwaukee Area Domestic Animal Control Commission (MADACC). The consultation included a site visit led by the University of California, Davis, Koret Shelter Medicine Program including a team of veterinarians from many diverse organizations and universities.

During the consultation, MADAAC staff members were helpful, caring, and professional. It was clear to our group that the staff at MADACC has high hopes and enthusiasm for improving conditions and care at the shelter, as well as increasing the number of lives saved in the Milwaukee area.

Population Management

Recommendations

1. Continue to investigate, expand, and develop programs and partnerships to decrease intake and increase live release numbers.

2. Consider population dynamics and the disparity between intake and live release when setting intake policies, making decisions about investing resources in animals, and selecting animals to make available for transfer or adoption. (See section below for more information on population dynamics.)

3. Improve flow through planning and early identification of problems through intake exams and daily monitoring.

4. Decrease unproductive waiting time for animals in holding areas; improve animal flow through systems.

5. Allocate adequate veterinary staff time each day to provide care required for healthy animals to move through the shelter system.

6. Improve housing quality by creating double-sided housing units for cats and dogs.

7. Minimize feline exposure to dogs.

8. Reduce average length of stay in an effort to reduce disease; decrease daily in-shelter population; increase relative capacity for care and housing; and improve welfare

9. Develop a pathway planning system with adequate capacity at each critical point of care. Each animal should be assigned a pathway at intake. Pathway should be evaluated daily and changed when appropriate.

10. Isolate animals with clinical signs of infectious disease from the general population.

11. Protect puppies and kittens from exposure to infectious disease.

12. Balance resource investment in cases requiring special attention with meeting the needs of healthy animals moving through the shelter.

POPULATION DYNAMICS

- Monitor live release, euthanasia, died in care, and holding numbers as change is implemented in population management.

- Monitor the disparity between live release and intake and live release by as a percent of intake to help monitor community progress. These parameters should be monitored by age group (adults vs. kittens or puppies) as well as by species.

- Determine a human population for the MADACC service area and begin to monitor per capita intake, euthanasia, and live release. (e.g., annual dog intakes per 1,000 people)

- Work with other community organizations to collect and report community wide intake data both for community driven intake, transfers in from or out to other communities, and total live releases on a per capita basis.

- Monitor similar parameters for other groups identified as particularly "at risk" such as Pit bull terriers. Pit bulls pose a distinct challenge for the shelter because the disparity between intake and opportunities for live release is much greater for Pitt bulls and Pit bull mixes at MADACC than it is for other breeds of dogs.

- Track other risk factors for dogs such as age, breed, health, or behavior status. Identifying risk factors may help determine what types of programs could best address disparities between intake and live release.

- Use expectations and trends in live release compared to intake to guide expectations of transfer placement and decisions about resource investment after the stray holding period.

- Continue to investigate, expand, and develop programs and partnerships to decrease intake and increase live release numbers.

    - Currently and historically, the most "at risk" groups for MADACC are cats, kittens, and pit bulls or pit bull mixes.

    - Consider working with transfer partners to develop a community wide Milwaukee Area Kitten Project. A community kitten project could help to decrease the number of kittens coming in to shelters as well as increase the number of placements. At least two partner agencies (Wisconsin Humane Society and Animal Resource

Center) reported a belief that it could be possible to place more kittens in the area. Local pet stores are reportedly selling kittens as well, indicating there may be more potential adopters.

- Consider education programs and specific programs targeted for pit bulls such as spay/neuter, microchipping, vaccination, and training in an effort to decrease relinquishment, increase reclaims, increase awareness of the problem and decrease negative feelings about the breed.

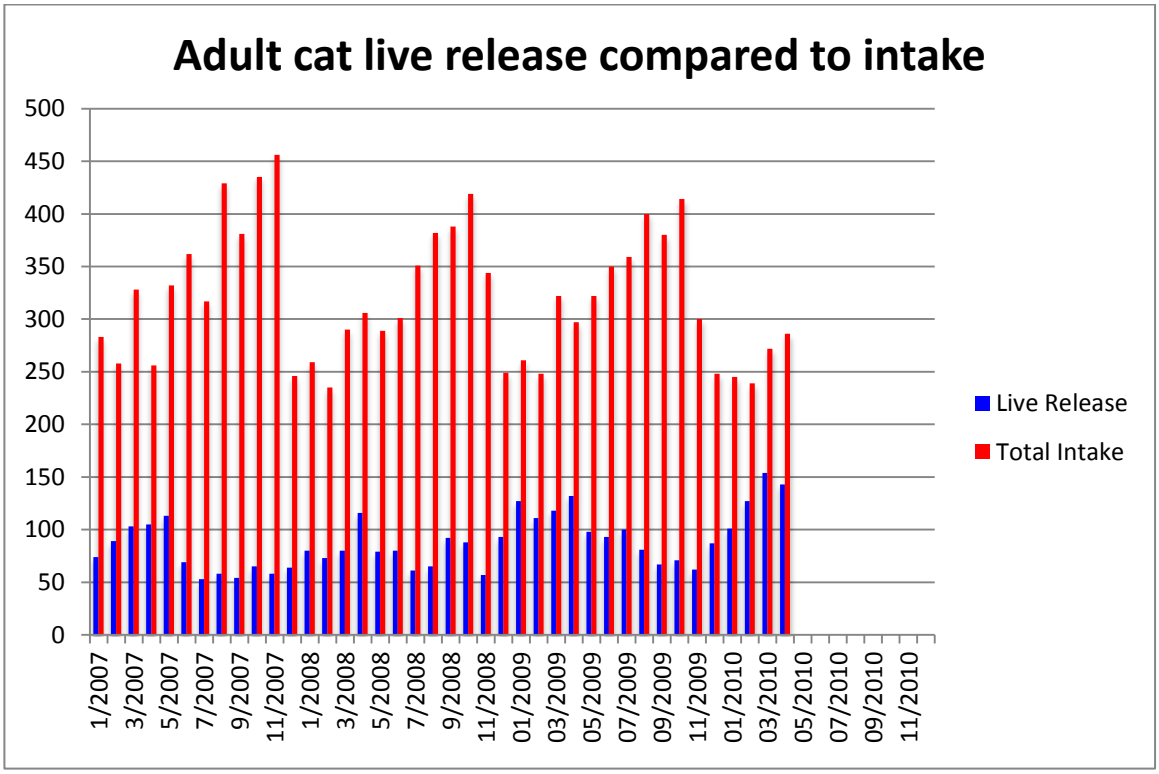
- Consider working with placement partners to try to increase live release opportunities for pit bulls. (San Antonio Animal Services offered an example of a successful motorcycle rally adoption event for pit bulls and other dogs considered "bully breeds". Adopted dogs had all been screened behaviorally and were vaccinated, spayed or neutered, and microchipped. All adopters met the standard criteria for adoption.)

- Highlight pit bulls for transfer or adoption that will have the best chances of being selected and doing well in rescue groups or adoptive homes.

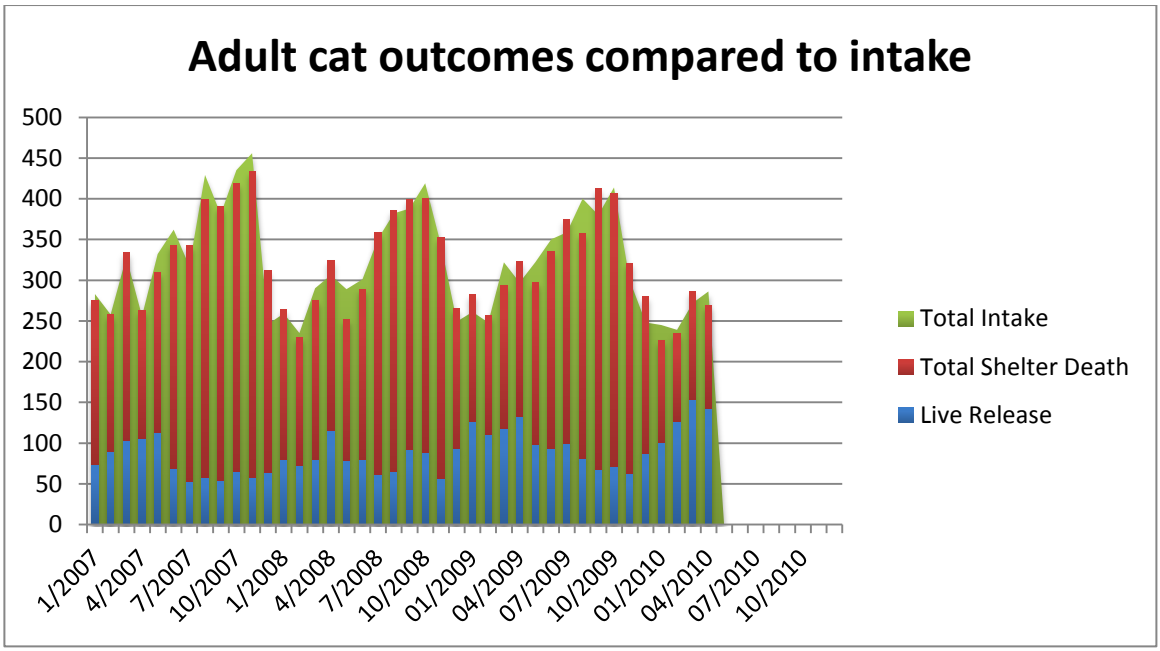
- Minimize holding unless there is a clear event in the future that will increase live release (adoption event or large, planned transfer), as well as a safe and humane way to house animals while waiting.

ADULT CATS

The number of adult cats entering the shelter has far exceeded the number of transfers (or other live release opportunities) since at least 2007. Although live release absolute numbers have increased, shelter staff report that many friendly adult cats are commonly euthanized because transfer opportunities are not available.



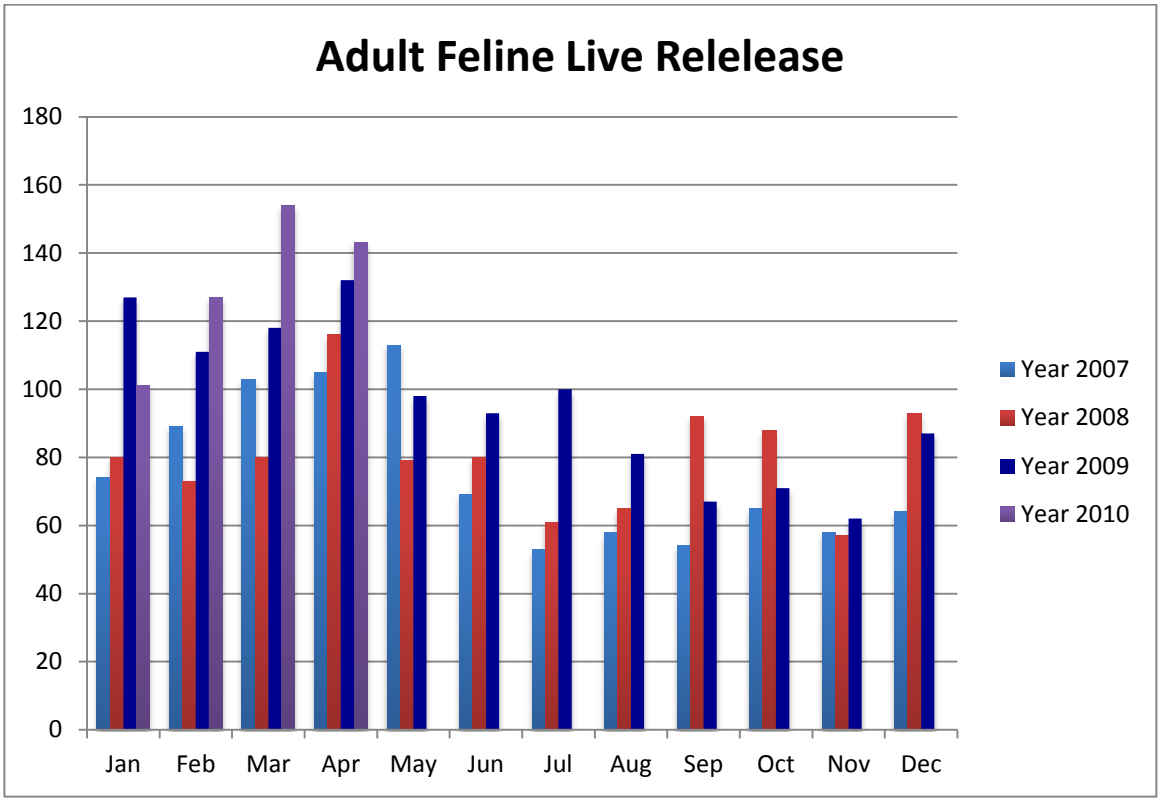
Graph 1



Graph 2

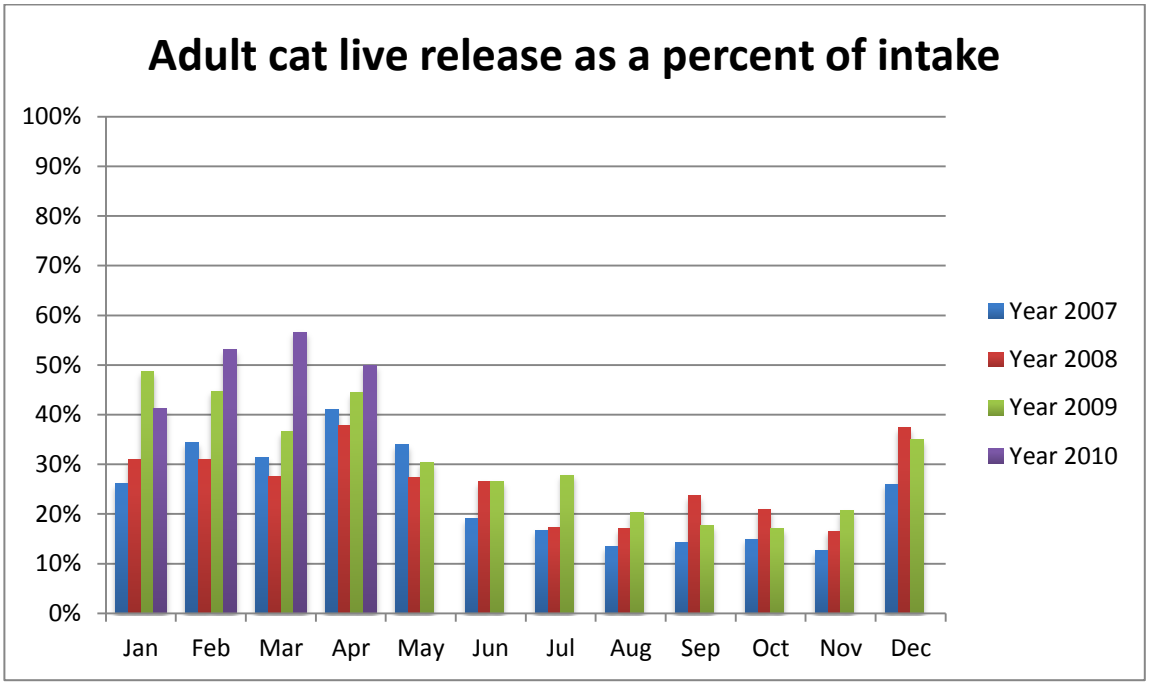
Graphs 1and 2 above show the disparity between intake and live release for adult cats at MADACC. While intake appears to have decreased slightly and live release has increased since

2007 there was consistently a substantial disparity between intake and live release over the past three years. Graph 2 shows that the number of outcomes for adults closely matches the number of intakes suggesting the majority of animals who entered the system have been included in the numbers.



Graph 3

Graph 3 shows absolute numbers of adult cats released alive from 2007-2009. The annual number of live releases for adult cats was increased 27% (242 cats) in 2009 compared to 2007. Live releases for adult cats were increased compared to previous years in the first 8 of 12 months of 2009. Adult cat live release in the YTD period for Jan-April of 2010 was increased by 37 cats compared to 2009.

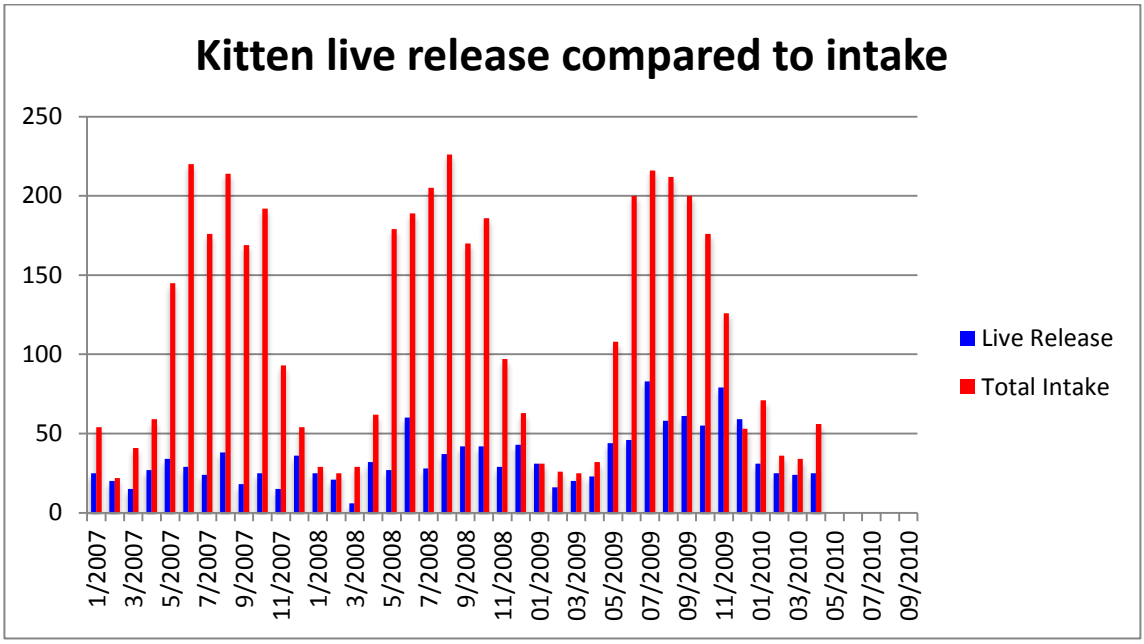


Graph 4

Graph 4 shows live release rate as a percent of intake for adult cats at MADACC. Live release as a percent of intake has shown a steady increase from 2008 to 2010. There is consistently a clear shift in the numbers of adult cats that are released alive in the months between January and April, when kittens are not as commonly presented to the shelter and the months of "kitten season," between June and November in 2009, live release ranged between 41% and 57% of intake when fewer kittens were in the shelter and ranged from approximately 17% to 30% of adult feline intake during kitten season.

KITTENS

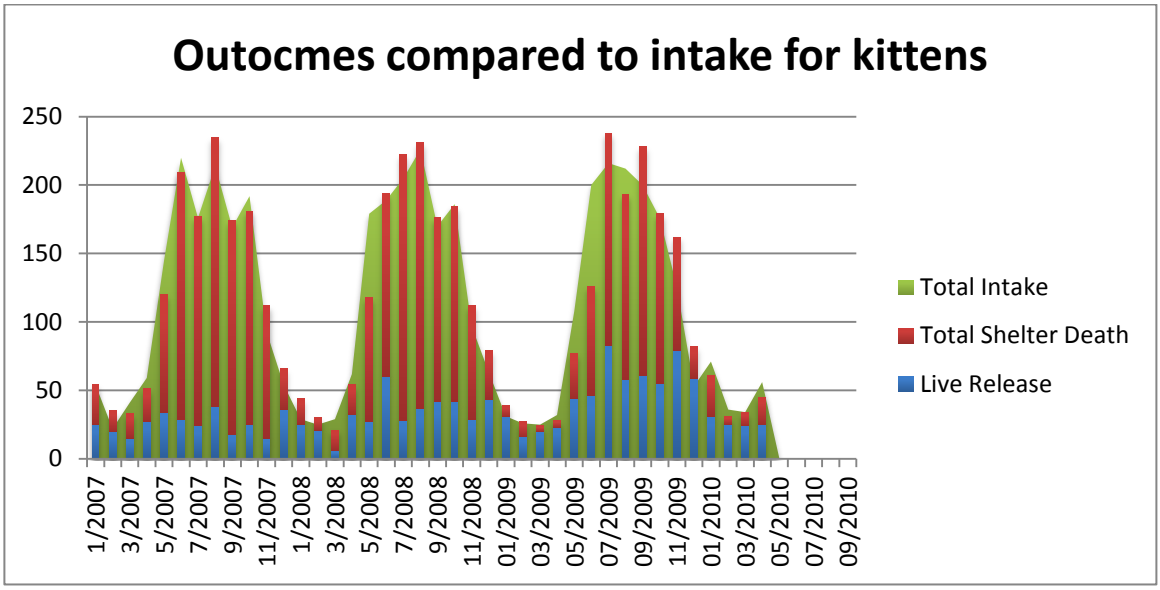
Graphs 5 and 6 below show the disparity between intake and live release for kittens at MADACC. For kittens, the disparity between intake and live release has been smaller than for adult cats over the past three years.



Graph 5

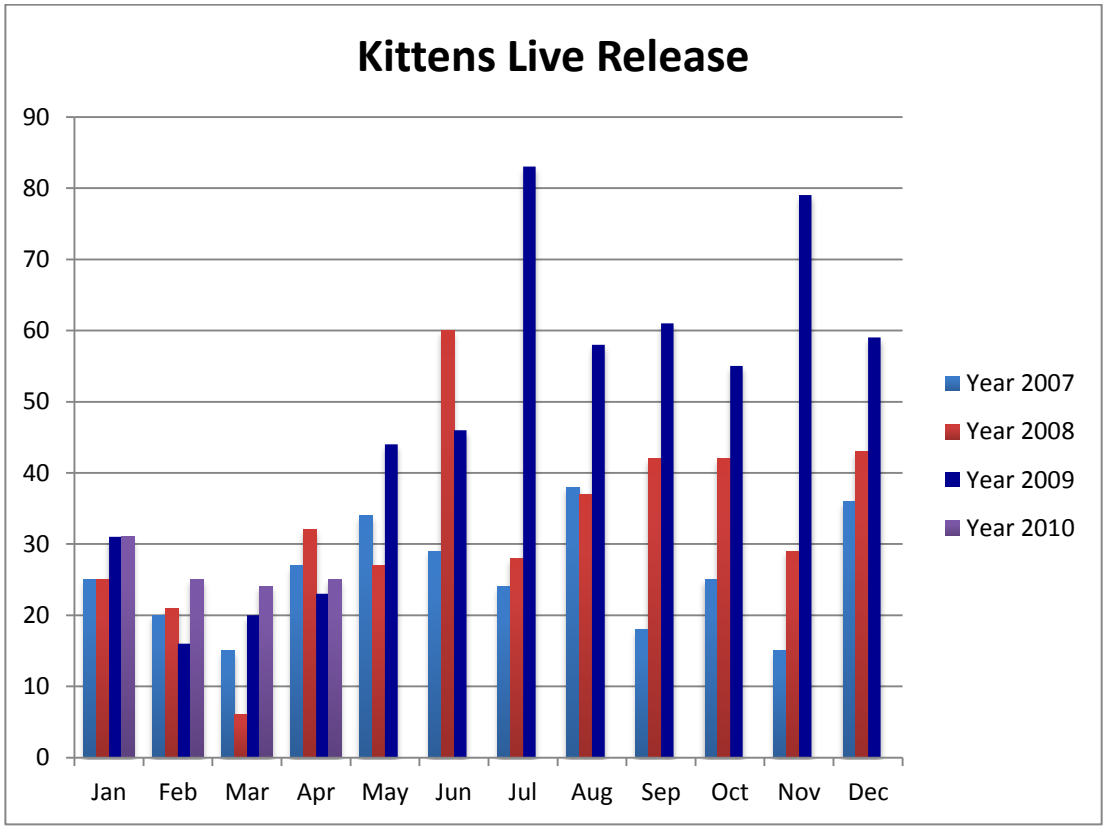
While live release numbers for kittens have increased since 2007, intake still consistently far outreaches live release. Shelter staff report that, kittens that enter the shelter sick, too young, or infected with ringworm are most likely to be euthanized, many kittens who enter the shelter healthy, also are euthanized, often after becoming ill, because there is no positive outcome available. At the time of the visit, many healthy and friendly kittens were in the shelter with no defined positive outcome available. Shelter staff felt that the number of kittens who would be good candidates for adoption does not exceed their perceived demand in the Milwaukee area for kittens by adopters.

More kittens are euthanized during the peak months of kitten season because the disparity between intake and live release is greatest.



Graph 6

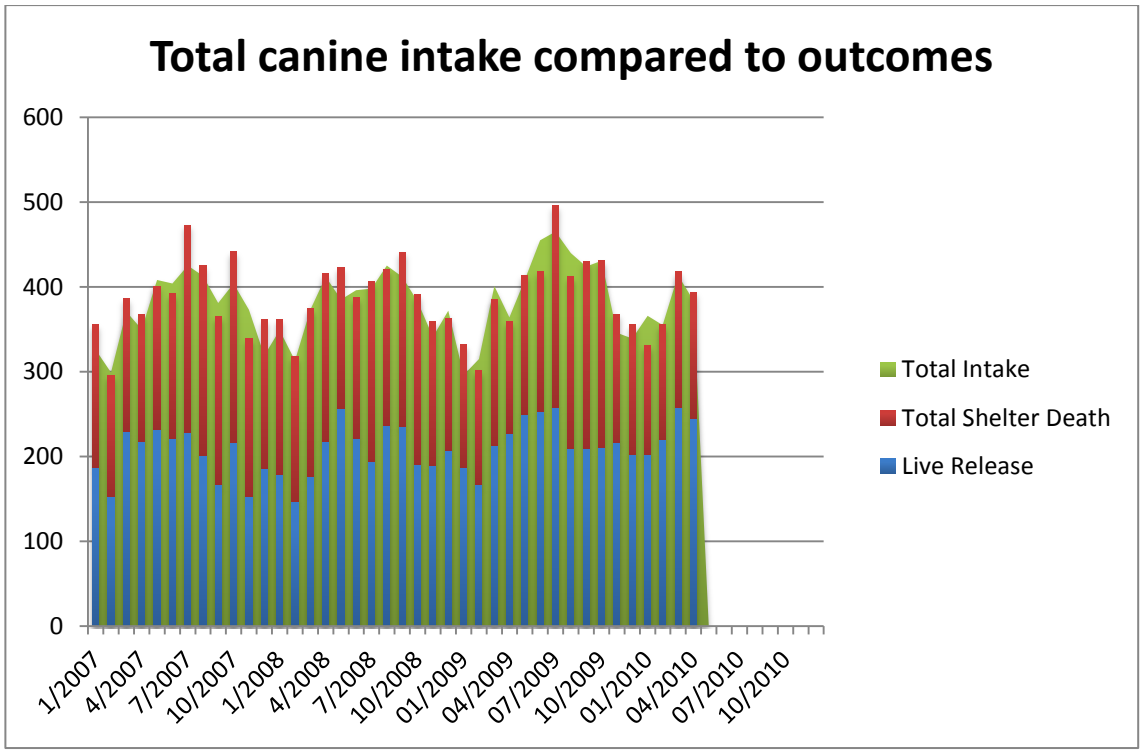
Graph 6 shows that the number of outcomes for kittens matches the number of intakes relatively well.



Graph 7

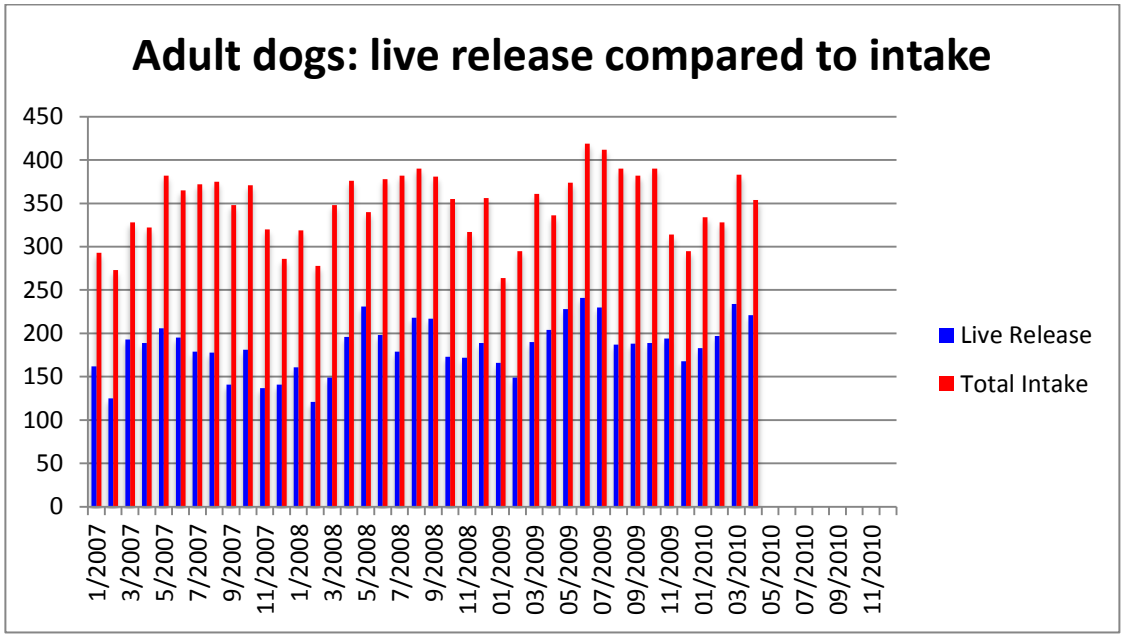
Live release absolute numbers for kittens increased by 18% (107 kittens in 2009) in 2009 compared to 2007.

DOGS



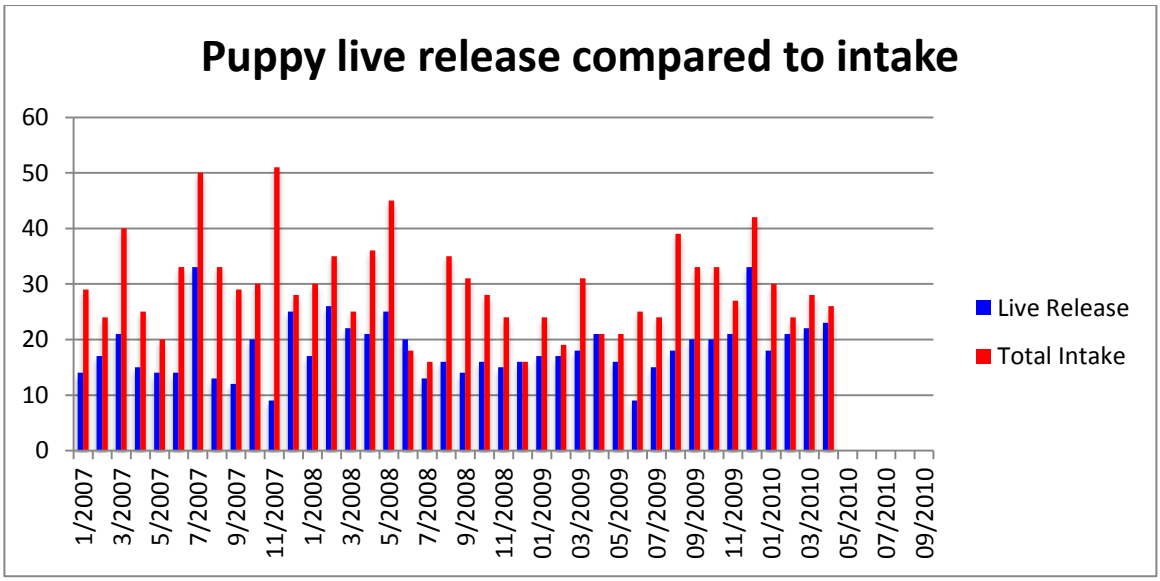
Graph 8

Graph 8 shows that the total number of intakes closely matches the number of outcomes showing that the majority of animals are accounted for in the data.



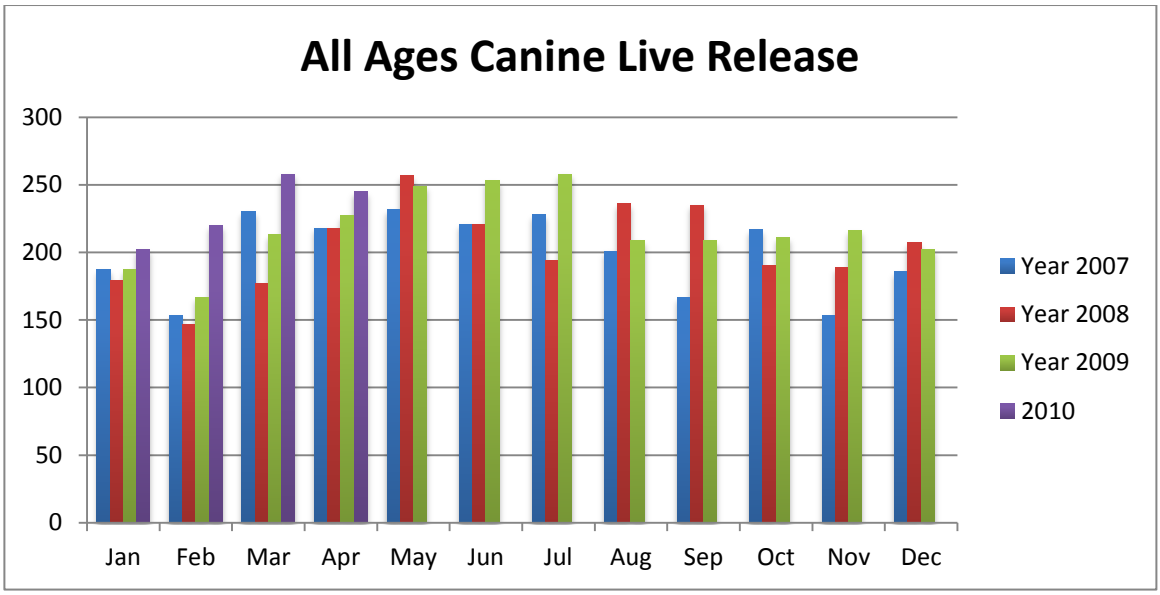
Graph 9

There is a significant and consistent disparity between intake and live release for adult dogs at MADACC. For adult dogs in 2009, live release represented between 48% and 63% of intake on a monthly basis and ranged between 55% and 62% for the first four months of 2010. While absolute numbers of live releases have been increasing, shelter intake has also increased maintaining the disparity.



Graph 10

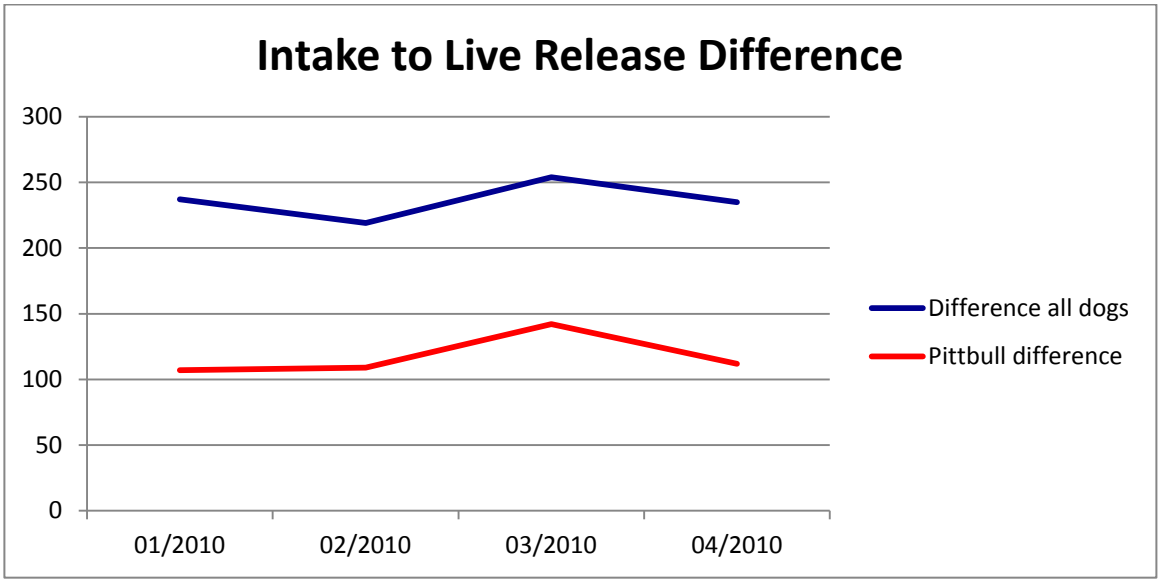
Puppies make up a small percentage of canine intake. The disparity between intake and live release for pups is much smaller than it is for adult dogs.



Graph 11

Live release for dogs has been fairly consistent over the past three years with small annual increases of between 60 to 150 dogs. Live release for all dogs in the first four months of 2010 was increased 16% (131 dogs) compared to the same time period in 2009. While live release has been increasing, intake still consistently exceeds live release, especially for Pit bull terriers and dogs identified as Pit bull Terrier mixes.

Graph 12 shows the disparity between intake and live release for the first four months of 2010. The disparity for Pit bulls and Pit bull mixes accounts for almost half of the total disparity between intake and live release for all dogs. Pit bull terriers are most at risk in the community because of the difference between the numbers coming in and the numbers of placement opportunities for them in the community. MADACC staff report that older dogs or dogs with medical or behavioral problems also have limited opportunities for transfer. Shelter staff also report that often they are unable to find transfer opportunities for many dogs they consider to be good candidates for adoption. At the time of the visit, no other data was available to define risk factors for dogs.



Graph 12

CAPACITY FOR HOUSING AND CARE

- Evaluate capacity for care at critical flow through points for animals in the shelter system such as:
  - Intake exams
  - Basic care
  - Medical care
  - Transfer coordination
  - Spay / neuter
  - Pre-transfer behavior evaluation
  - Special cases
  - Foster care
  - Adoption counseling and processing
- Evaluate intake capacity compared to expected intake numbers, treatments, and procedures for intake.

- Maintain adequate capacity for basic care. HSUS and NACA have recommended 15 minutes per animal per day for basic care. This is broken down to nine minutes for cleaning and six minutes for feeding.

- Balance medical care and special cases with the capacity for medical care, considering time required for work-up and ongoing medical care, and the needs of all animals in the shelter.

- Increase capacity or seek alternate solutions (e.g., outside vets for critical care, or spay/neuter) if capacity is not sufficient to meet the needs of individual animals or the population as a whole. In some cases, capacity may be increased relative to the numbers of animals requiring care through efficient practices that would decrease the daily population.

- Set capacity limits for animals past their stray holding period based on transfer driven capacity (see graphs below).

- Convert 90 single sided cat cages into 45 double-sided housing units (see below for housing capacity estimates).

- Allocate staff or staff supervised volunteer hours to coordinate and facilitate transfers to other organizations as well as to maintain and develop relationships with transfer partners.

- Evaluate need and capacity for pre-transfer behavioral evaluations for dogs compared to expected monthly daily average transfer numbers.

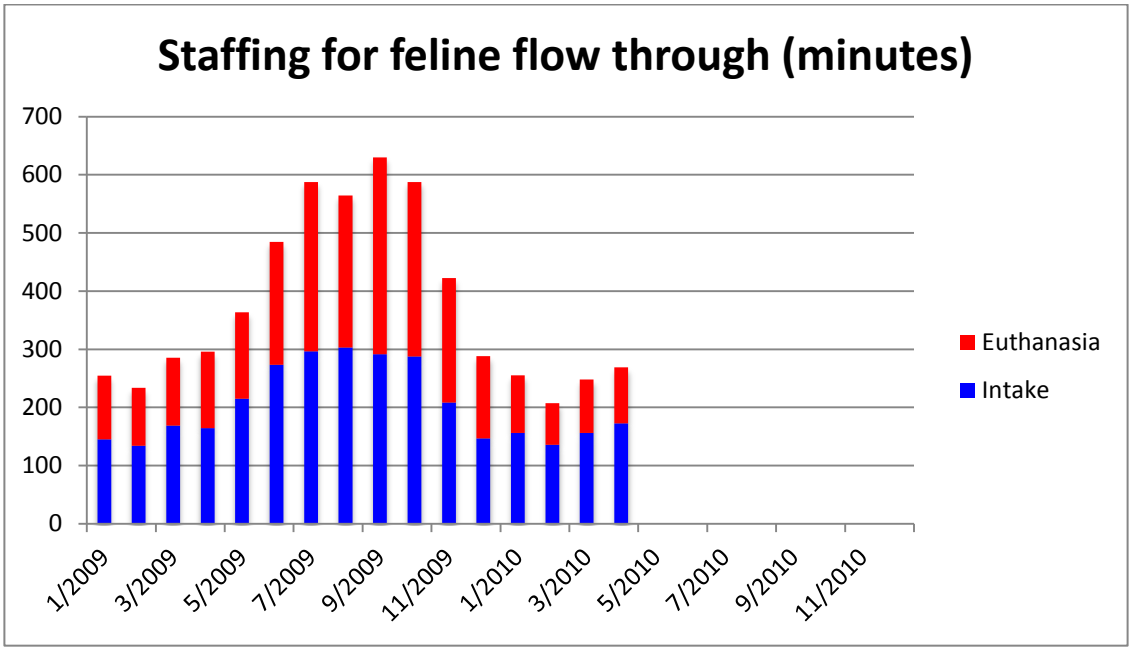
- Evaluate spay / neuter capacity goals and needs.

    - Once a sound surgical program is in place, with adequate supervision (see Veterinary Services Section), consider the costs and benefits of offering spay/neuter for kittens as returns from transfer groups and foster homes after the kittens have reached an appropriate size and the stray holding period has ended.

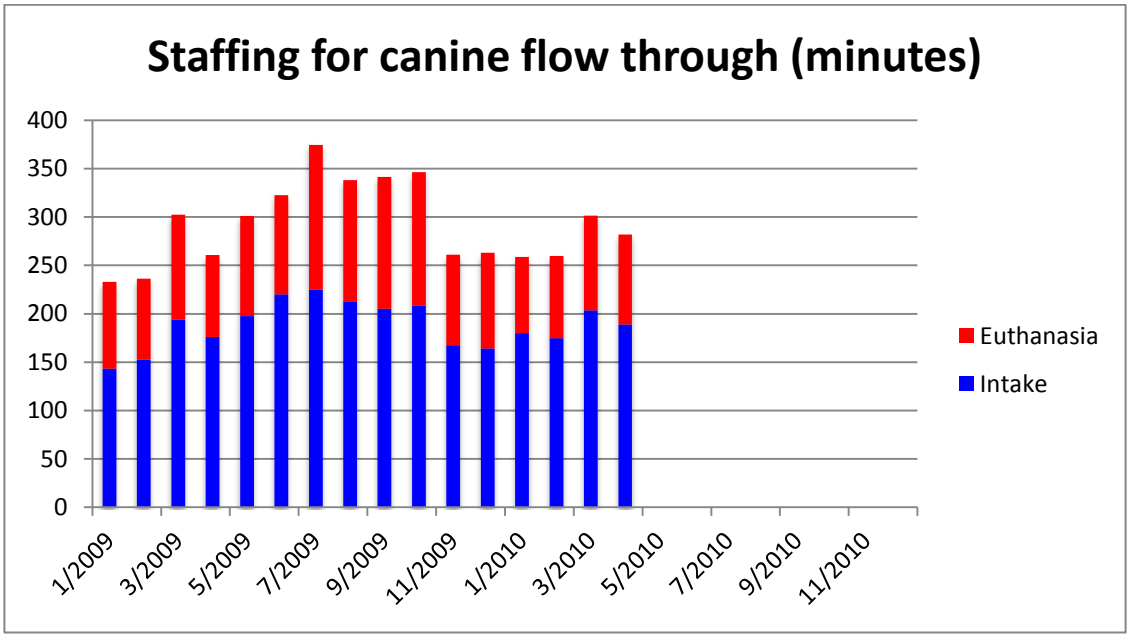
    - At the time of the visit, animals were not, in general, being spayed or neutered prior to transfer. At least one placement partner reported that spay neuter assistance might increase her ability to take kittens from the shelter. However, concerns about surgical complications were also expressed.

    - Establish goals and define targets for public outreach spay/neuter programs. Match schedule for surgery to actual capacity for performing spay/neuter including all aspects and staffing of the procedure.

- Allocate specific qualified staff time for euthanasia so that capacity is equal to or exceeds the need (see Euthanasia section). We have estimated time for two staff members based on euthanasia monthly daily averages (see graphs 13 &14 below for staff time).



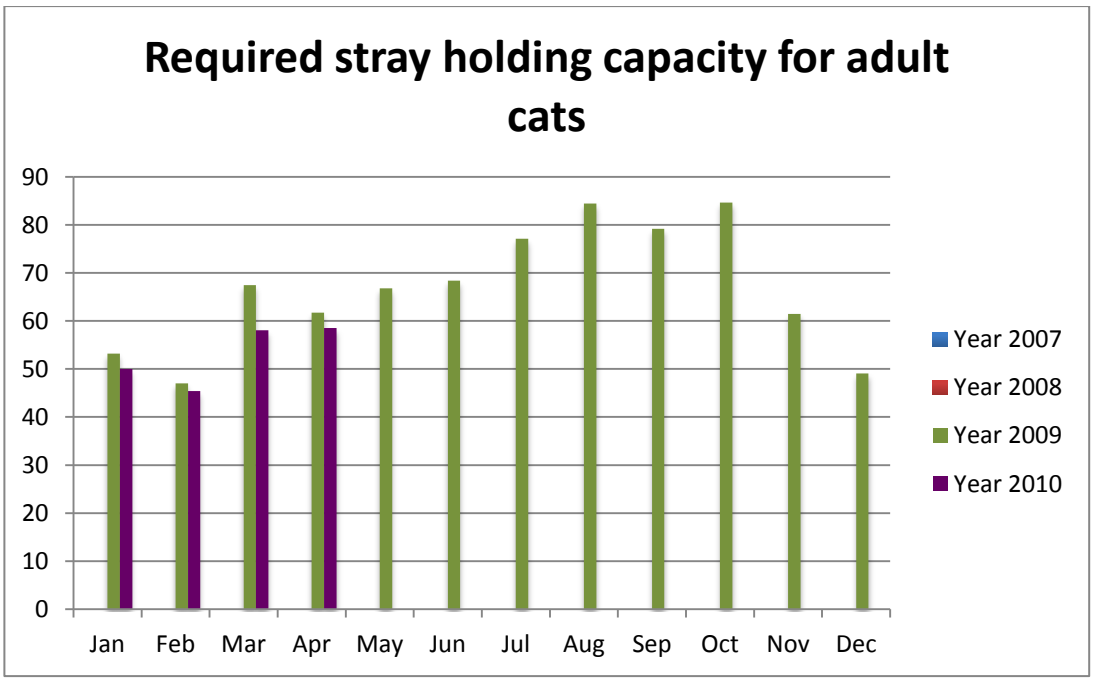
Graph 13



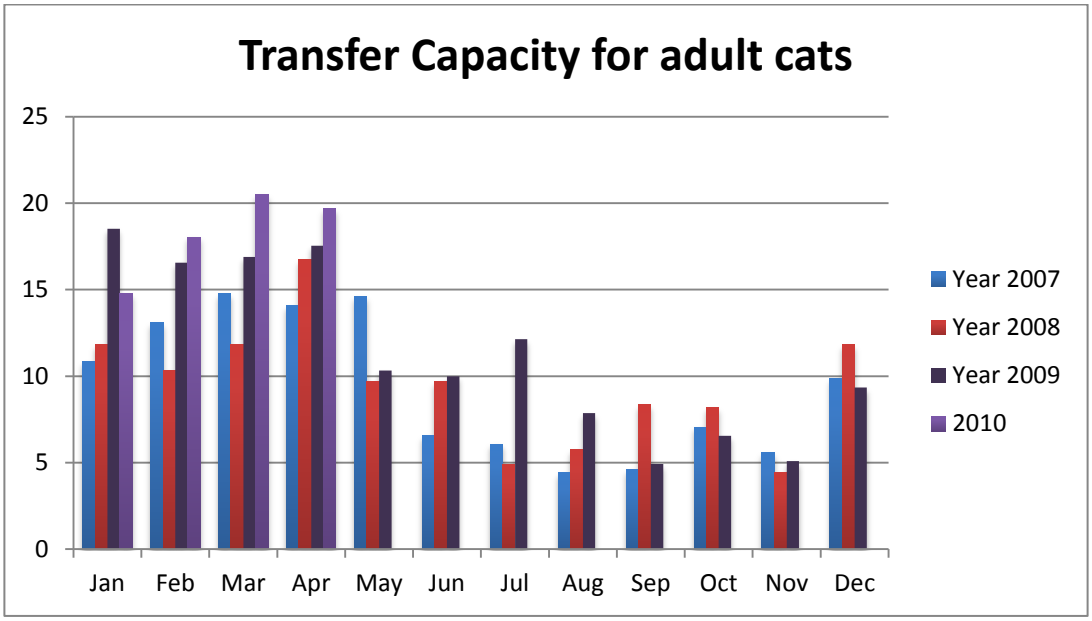
Graph 14

CATS

Graphs 8 and 9 show holding requirements and capacity recommendations for adult cats at MADACC. Required stray holding for adult cats is based on the number of cats coming in to the shelter (monthly daily average) multiplied by the seven-day required stray holding period. For adult cats, the estimated maximum is approximately 85 cats. Additional housing (transfer driven capacity in graph 9) will allow more time (average five days from due out to transfer/12 days avgerage total LOS from intake to transfer) after the "due out" date for animals to be picked up by rescue groups. Ideally, rescue groups will make selections during the stray holding period.



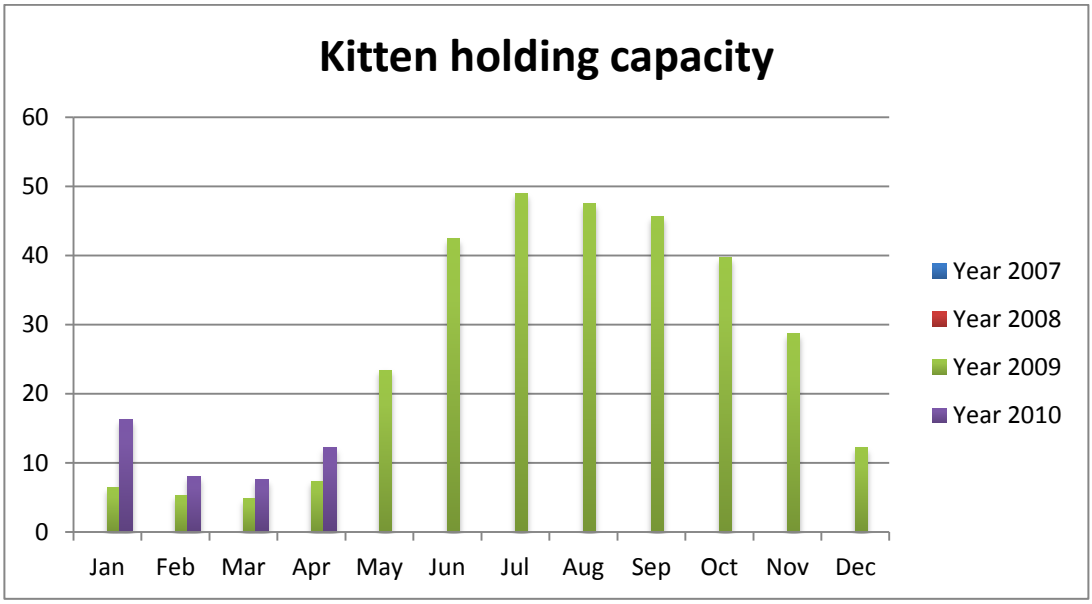
Graph 15



Graph 16

Graph 16 shows transfer driven capacity for adult cats based on a five day average length of stay past holding to transfer. The numbers represent the recommended maximum number of individual adult cats either in single or group housing units.

During non-peak season for adult cat transfers (kitten season) transfer driven capacity estimates have an approximate maximum of five to ten cats. During winter months, when more adults are selected for transfer, transfer driven capacity estimates have an approximate maximum of 20 cats.



Graph 17

Graph 17 shows kitten holding capacity. Since the goal will be to have kittens move through the shelter more quickly on average, utilizing time in foster or immediate transfer whenever possible, kitten housing estimates have been based on a target average length of stay of seven days. Kitten holding capacity estimates have an approximate maximum of 50 kittens. Housing estimates are based on an average of two kittens per cage or 25 housing units.

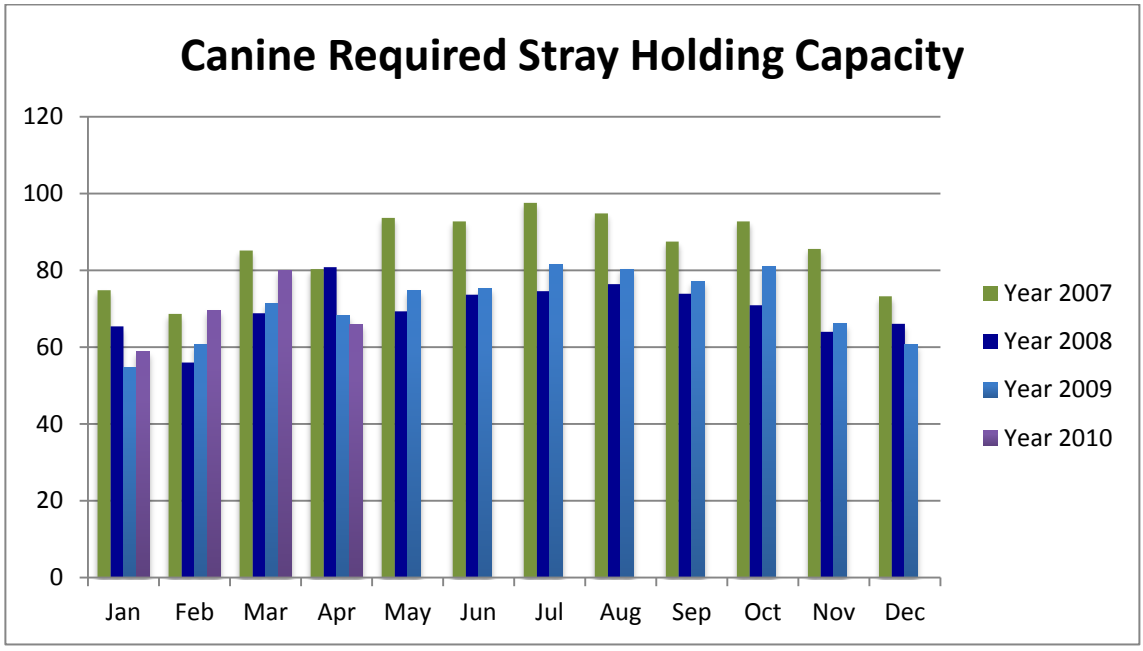
The capacity estimates are combined in the table below:

	Stray Holding	Non-peak season TD capacity	Peak season TD capacity	Peak season Housing Units Needed
Adult cats	85 cats	20	10	95 housing units
Kittens		10 kittens	50 kittens	25 housing units (avg. 2 kittens / HU)
			Total feline housing units	**120**

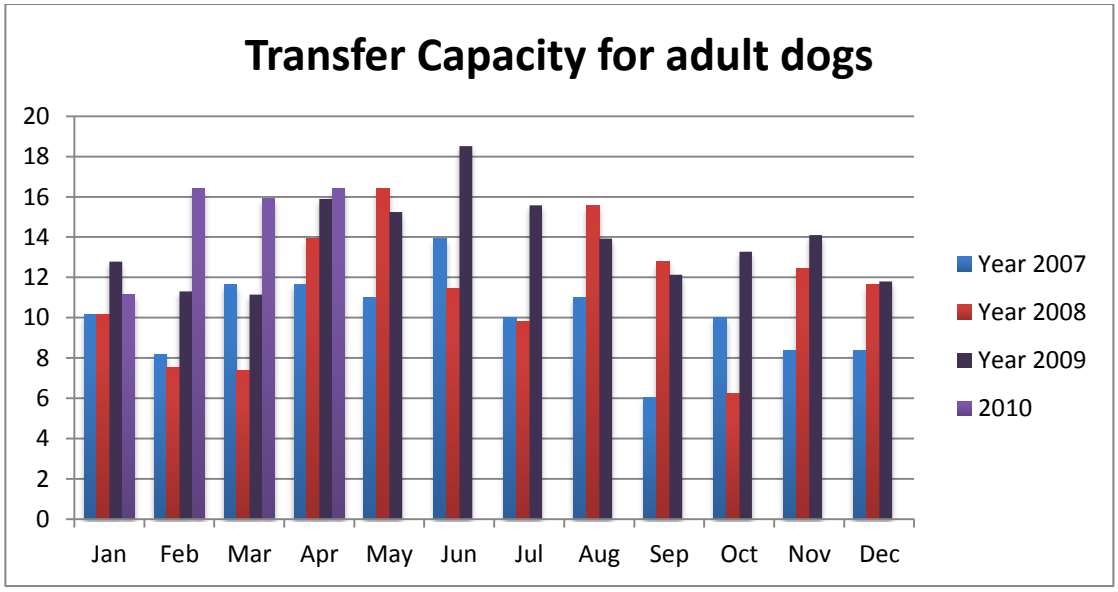
- If 90 of the current cat housing units at MADACC were converted to double sided housing units for cats (90/2 =45), 133 cages would still be available at the shelter allowing 13 additional cages for cat quarantine.

DOGS

Graphs 18 and 19 show holding requirements and capacity recommendations for dogs at MADACC. Required stray holding for dogs is based on the number of dogs coming in to the shelter (monthly daily average) multiplied by the seven-day required stray holding period. The estimated maximum is approximately 80 dogs. As described for cats above, additional housing (transfer driven capacity in graph #) will allow more time (average five days from due out to transfer/12 days average total LOS from intake to transfer) after the "due out" date for animals to be picked up by rescue groups. Ideally, rescue groups will make selections during the stray holding period and pick up, just after the hold expires.



Graph 18



Graph 19

Graph 19 shows transfer driven capacity for adult dogs based on a five-day average length of stay past holding to transfer. The numbers represent the recommended maximum number of individual adult dogs. Transfer driven capacity for puppies averages just about one pup and so, is included with the adult dogs.

Transfer driven capacity estimates have an approximate maximum of 18-20 dogs.

	2009-10 Stray Holding Capacity Requirement	Transfer Capacity	Estimated Total Maximum Required Canine Housing Units
Adult dogs	80 dogs	20	100

HOUSING UNIT USE FOR DOGS

- Install guillotine doors between back to back runs in kennels 2, 3, and 4 making two rows of 14 and two rows of 15 double-sided runs.
- Install guillotine doors between back to back runs in kennel 1 making 13 double-sided runs.
- Leave one row of 14 single sided runs
- Install guillotine doors between side to side runs in the ward currently being used for quarantine making 8 double-sided runs.

This restructuring plan would provide 93 appropriate canine housing units. If housing requirements exceed that number, guillotine doors in just a few runs could be closed, making temporary single sided runs to accommodate the increase in population.

LENGTH OF STAY

Monthly average time to transfer for cats in 2009 ranged between ten and 33 days. Monthly average time to transfer for dogs in 2009 ranged between ten and 15 days.

- Proactively recruit for transfer opportunities.
- Allow for adoption or transfer pre-selection during the stray holding period for cats and pit bulls. Consider allowing pre-selection of all dogs as well. Pre-selection systems are dependent on partner groups adhering to deadlines for pick-up. In order to prevent animals waiting, pre-selected animals should be picked up immediately after their holding period is up or offered to others for transfer.
- Shift intake practices to facilitate improved flow through.
- Develop a daily rounds team for transfer list and foster selection (see Daily Rounds Team below).
- Shift selection process to favor Fast Track/Slow Track planning.

- Fast tracking requires a quick turnaround time from intake to being made available for transfer or adoption.

- Reduce waiting time prior to transfer and foster care (see recommendations for foster program).

Daily Rounds Team: Transfer, Adoption, and Foster Selection

- Consider designating a team to make decisions about which animals should be made available for transfer or adoption or selected for foster placement.

- See daily rounds information below.

- Develop a daily decision making process for animal flow through and outcomes.

  - Set guidelines for how decisions will be made.

  - Include guidelines for selection of kittens to go to foster since they are being put onto a transfer or adoption pathway when they go to foster.

  - Consider what outcome opportunities will be available at the time foster animals are expected to return before them sending to foster.

- If animals are not selected for transfer or foster placement, another plan must be made. In most cases, this will be treatment (either medical or behavioral) or euthanasia. MADAC may consider developing partnerships to allow for release to feral caregivers, as well. Alternative plans should have timelines set for re-evaluation or follow through.

DAILY ROUNDS

Daily rounds is a systematic process by which animal needs are identified, decisions are made and follow through is supervised by staff with training and authority to make population management decisions based on knowledge of the needs of each individual and the organization as a whole. Daily rounds may be the single most important tool for population management in shelters.

In order to implement daily rounds:

- Identify a veterinarian and/or a senior management team member with knowledge, training, and authority sufficient to implement and supervise daily rounds.

- Develop a rounds team.

- Evaluate animals every day.

- Explicit decisions must be made and acted upon for each animal with clear deadlines and expectations either prior to the due out date, on the "due out" date, or within a short defined period following the "due out" date.
- Ideally, each department contributes knowledge to a daily rounds team which combines the information to guide the decision making process.
- Implement a clear system to communicate the decisions and actions required based on daily rounds (see Appendix A: Action list).
- Implement a system, with supervision and accountability, which ensures enactment of decisions and actions communicated through the daily rounds process.
- Identify problem areas where insufficient capacity exists to allow prompt action to be taken once flow-through decisions have been made.

INSTRUCTIONS FOR DAILY ROUNDS

Assess each animal daily and ensure that all needed steps have been taken for that animal including:

- Behavioral and/or medical care to alleviate suffering and improve adoptability
- Behavioral and/or medical assessment to determine adoptability
- Spay/neuter surgery or other medical procedures required before adoption
- Movement from areas such as holding, isolation or quarantine to adoptable areas as soon as the animal is recovered
- Rescue group contact and pick-up
- Euthanasia—decision and performance

In most cases, the daily assessment should include the shelter manager, veterinarian, and director working together at least once a week. The assessment should include a look at the overall condition of each ward (smell, cleanliness, noise, overall presentation to adopters) as well as attention to each animal's paperwork, cage/kennel, an assessment of the animal's physical and mental condition, and any scheduling for required services such as behavioral or medical evaluation. All required actions can be recorded on a simple Action List as daily rounds progresses (see Action list in Appendix A). A system must be in place to communicate and follow up on needs identified as part of daily rounds.

Paperwork: Is the animal correctly identified? Does paperwork clearly identify if the animal is available for adoption or not? Is there any indication on the paperwork that the animal has a

behavioral or physical condition that will present special challenges for adoption (e.g. a description that the animal was surrendered for a serious behavior problem)? If so, is there information for adopters describing what steps have been taken to mitigate the problem, or other information that might encourage the animal to be considered for adoption?

Cage/kennel: What is the condition of the animal's environment? Is there evidence of illness, such as diarrhea or sneeze marks on the walls? Is the housing humane for the amount of time the animal has been held? If the animal has been in that kennel for more than one month, does it have enrichment equivalent to that expected in an adoptive home (e.g. room to stretch to full length, choice of hard and soft surfaces for resting, toys and access to human contact and exercise)?

Animal: Is there any evidence of illness, injury or kennel stress? Are there any immediate needs to be addressed? Is there anything about the animal's behavior or appearance that might cause problems for the animal or deter adopters, such as a very dirty or matted hair coat or aggressive barking at by-passers? If so, what measures are being taken to alleviate or further evaluate these problems? A more extensive evaluation of each animal's physical and mental condition and adoptability should be made every two weeks. This should include taking the animal out of the kennel, running hands over the body to look for weight loss, sores or other physical problems, and reassessment of the animal's overall wellbeing. Ideally animals should also be weighed every week following arrival in the shelter. After body weight has been consistent for three weeks, weight monitoring should be done at least monthly or when problems are noted. (See Section 8 on Nutrition) Weight loss or gain is a common problem in animals housed long-term in shelters.

Scheduling: Does the animal need to be scheduled for some care or service? (e.g., behavioral or medical evaluation prior to adoption or transfer, spay / neuter surgery, treatment, rescue pick-up, or euthanasia)

KITTEN FOSTER PROGRAM

Foster and Transfer Placement

- Set a goal for very quick turnaround (one to two days) for kittens going to foster or transferred to other organizations.
- Post pictures and descriptions for stray kittens and send to foster or transfer, whenever possible, rather than holding them, in the shelter for the duration of their stray holding period.
- Balance the number of kittens going to foster with the number that are expected to be adopted or transferred at the time the kittens will return from foster ready for adoption.
- Balance the number of kittens in foster with the capacity for veterinary care and other support for foster parents and kittens.

- Track foster program for balance between numbers of animals going to foster and number returning from foster. The foster program was relatively new at the time of our visit.
- Proactively recruit transfer groups and foster homes for the program with the expectation that an approximate average of one or two foster homes per day will be needed at least between May and November. (In 2009, three to seven kittens on average entered each day during peak season.)
    - Consider asking transfer groups and foster parents to sign up on a roster so when kittens present to the shelter, the next open foster home on the list would be called
    - Consider recruiting volunteer drivers and develop a drop off system to facilitate speedy transfer or foster placement.
    - Create a level system to match foster homes with foster kittens according to expected degree of training or care required. Incorporate a stepwise training program to accompany the level system.
- Discuss pre-release protocols, screening, and treatment with transfer partners
- Recommended screening / treatment prior to foster placement:
    - Wood's lamp exam +/- fungal culture
    - Veterinary or technician exam
    - Vaccination as appropriate
    - Deworming for roundworms (pyrantel pamoate)
    - Treatment for external parasites as appropriate (selamectin) Treatment for coccidia (ponazuril)
    - Weight check
    - When possible consider screening for FeLV/FIV prior to placement in foster care. Kittens that are negative at that time would be expected to remain negative.

In Foster Kitten Care

- Add daily weight checks to foster training and recommended in foster monitoring
  - Consider providing small kitchen scales to foster care providers as part of a start-up kit.
  - Provide chart / excel sheet for fosterers to record weights and system for reporting and responding to poor weight gain or weight loss
  - Provide daily monitoring sheets for fosterers. (See Appendix B and Appendix C)
- Develop a plan for veterinary and follow up care for foster kittens either through an onsite veterinarian at the shelter or veterinarians in the community.
- Develop a triage system by foster coordinator, to screen calls and make veterinary appointments as needed.
- Administer Pyrantel Pamoate every two weeks for queens and kittens while nursing.
- Consider repeating Ponazuril ten days after initial dose.
- Re-vaccinate kittens every two to three weeks while in foster care.

Foster Kitten Returns

- Develop opportunities for foster kittens to be transferred or adopted without returning to the shelter.
- Set goals for foster returns to match expected daily adoptions or transfers.
- Schedule return day tentatively at time of entry into foster program.
- Plan surgery for the day of return or while the kittens remain in foster.
- Consider spay / neuter and return to foster for recovery for some foster kittens.
- Schedule preoperative exam by veterinarian.
- Foster program coordinator should oversee foster returns. Foster returns should not be scheduled for veterinary technicians during morning treatment or rounds times unless no other option is available.
- Recommended treatments / screening at time of return:
  - Spay/Neuter

- FeLV/FIV testing if needed
- Rabies vaccination
- Droncit (given by injection at time of surgery or by mouth the following day if not given while in foster care)
- Pyrantel pamoate as needed
- Selamectin as needed
- Wood's lamp exam

Fostering Adult Cats

Consider developing a "Guardian Angel" foster to adoption program for adult cats and dogs. This program models a canine program started at Hillsborough County Animal Services in Florida and would allow fosterers to adopt cats out directly from foster care in their home.

Monitoring

- Use monitoring sheets daily in all wards (see Appendix B and C).
- Please see instructions for daily monitoring below.
- Use Vet Log clipboard (see Appendix D).
  - Provide clipboard in each ward and exam area, including intake areas
  - Train staff and develop procedure for using the Vet Log to report problems to medical staff
  - Use vet log as part of new intake process (See intake recommendations)
  - Use Vet Log or Chameleon to report need for rabies vaccination

Instructions for Daily Monitoring of Animal Health and Behavior

(See: Monitoring sheets for cats and dogs in Appendix B and C)

Monitoring animals in their housing units is an important support to the daily rounds process and dramatically improves the likelihood that signs of problems will be identified early. For example, inappetance, vomiting, or diarrhea could possibly be missed if no note is taken prior to cleaning and re-filling the food.

Care staff who work with the animals early in the morning may be best able to pick up on signs of problems before cages are cleaned and food is replaced. Appetite and food intake monitoring is best done during feeding. Monitoring sheets, filled out by direct care givers can then be consulted by those doing rounds even after the signs of illness have been cleaned away.

- Provide training for care staff in recognition of clinical signs of disease.
- Provide training for care staff in utilizing monitoring sheets for cats and dogs.
- Utilize monitoring sheets daily for each animal in the shelter.
- Keep monitoring sheets in a separate binder so animals cannot reach and demolish them.
- Cages and animals must both be properly identified.
- Keep a separate binder for each ward.
- Move monitoring sheets to new location if animal is moved.
- Record attitude prior to feeding in the morning.
- Monitor appetite during feeding.
- Look for urine /fecal output before beginning cleaning.
- In general housing areas, if an animal appears sick, mark the cage so others are alerted.
- Unless an animal requires immediate intervention, cleaning staff should not enter the cage of an ill animal until feeding and cleaning of the general population has been completed. Follow appropriate procedures to notify veterinary staff or supervisors of problems.
- Include weekly weight checks as part of a complete monitoring program.

- When animals remain in care for longer than one month, full physical exams including weight and body condition score should be performed and recorded by trained staff on a monthly basis, and veterinary examinations should be performed biannually or more frequently if problems are identified. Geriatric or health-compromised animals should be evaluated by a veterinarian as needed for appropriate case management.

INTAKE

Animal intake is possibly the most important contact point for animals in the shelter system. At intake, the animal should be:

- Scanned for presence of a microchip and any other identification
- Triaged through examination to identify conditions requiring treatment and/or special housing considerations and which may impact rescue or adoption prospects
- Provided preventive treatments (vaccines, parasite treatment) to protect animal health and prevent environmental contamination
- Provided with a record (e.g. photographed, information entered into the shelter software system including all treatments and exam findings) and physical identification (e.g., ID band)
- Assigned a housing area and pathway plan to help ensure the animal can move efficiently through the shelter system

An effective intake process will ensure that animals are housed appropriately from the start of their shelter stay and that needs are identified and acted upon promptly. This in turn will maximize the chance of a positive outcome for each animal.

Another essential role of intake is to mitigate animal stress as much as possible during the admission process in order to facilitate adaptation to the shelter environment. If animals are emotionally traumatized at entry, they can become sensitized to the shelter environment, potentially decreasing their ability to cope and increasing the likelihood of illness.

At MADACC, intake processing is performed in an open area/hallway in the treatment area. Intake processing is performed by veterinary technicians. Cats awaiting intake are sometimes held in carriers placed in cages lining this area, while dogs are processed immediately or placed in runs in the wards while awaiting intake processing (if they were admitted to police bay overnight). A photo is taken of each animal and treatments are logged in Chameleon. Animals receive standard intake treatments (vaccination, parasite control). After intake processing, animals are brought to housing areas and placed in kennels or cages.

Intake Location and Housing

Strengths

- A computer station, exam surface, sink, walk-on scale and refrigerator are available in the intake area, and the area is well lit.
- The intake area is close to the animal unloading area.

Problems

- The intake area is not a dedicated room. Human and animal traffic passes through the intake area, creating a risk of disease transmission and a safety risk posed by dogs tied in the hallway as people walk and other animals walk by.
- The varied activities in the intake area create a noisy, hectic and distracting environment for animals and people. Intake surfaces are used for other purposes as well, leading to wasted time looking for needed supplies and paperwork.
- There is no segregation of cats and dogs during intake processing. Cats were sometimes placed on the floor with people and dogs on all sides.
- Some cats were placed in carriers within cages while awaiting intake; no food, water or litter was available to cats while waiting intake processing. Carriers were not covered, nor were cages in which carriers were placed.
- The lights in the intake area cannot be dimmed, making it impossible to effectively evaluate cats for ringworm.
- There is only one door between intake and the garage, leading to a risk of escape.

INTAKE LOCATION AND HOUSING RECOMMENDATIONS

1. Reduce stress for incoming cats
    a. Stress directly causes upper respiratory infection in cats, and stress begins the moment a cat is trapped or brought in to the shelter
    b. In addition, stress compromises all animals' immune response, which compromises vaccine efficacy and increases vulnerability to contagious disease
    c. Stressed animals will exhibit behavior which may lead them to appear fearful or aggressive, compromising their chances for adoption

i. Never place cat carriers on the floor. Cats feel more secure when they can perch at a high point. A table, counter, cage bank or shelf elevating cats off the floor should always be used.

ii. Cover cages or carriers with towels while waiting for processing and throughout travel within the shelter. Cats should be in carriers while waiting for processing no more than 15 minutes. If processing must be delayed, remove cats from carriers and provided with food, water and litter.

2. Provide a separate, dedicated intake rooms for cats and dogs.

    a. Use the current avian room for feline intake; use police dog holding for canine intake. Equip each intake area with an exam table, refrigerator, scale (walk-on and pediatric for dogs, pediatric for cats) and all needed supplies. Provide sinks in each room if possible.

Sanitation/biosecurity

Problems

- The intake area was inconsistently and ineffectively cleaned between uses.
- The floor area was sometimes mopped with an unknown disinfectant, but not between every animal.
- The exam surface of the table was reportedly sometimes cleaned with disinfectant wipes, but this was not seen to be the case.
- One staff member wore gloves when examining dead bodies. Otherwise gloves were not used; hand sanitizer was not used between intakes.
- No protective clothing was used when examining animals at intake.

Recommendations

1. Require that staff sanitize hands or wear gloves between handling animals.
2. Ensure that hand sanitizer, gloves, and if possible sinks, soap and paper towels are available at every intake station and are used between animals so that newly admitted animals are protected from exposure to harmful germs.

    a. Hand sanitizer does not inactivate some viruses (including parvo) or ringworm. When sick or dead animals are handled gloves must be worn and/or hands must be thoroughly washed immediately afterwards.

3. Use of gloves, hand sanitizer, and hand-washing also help protect staff from zoonotic infection.

4. Provide protective smocks for use with sick or dead animals. Provide extra scrubs or uniforms for staff to wear if clothing is inadvertently contaminated, e.g., by examining an animal that turns out to have ringworm or parvovirus.

5. Develop a cleaning and disinfection schedule for each intake area.

    a. Animal holding areas and surfaces, including scales and all equipment, should be sanitized between each use with an effective, stable, rapidly active disinfectant with some activity in the face of organic matter.

    b. Consider Trifectant® or Accelerated Hydrogen Peroxide (e.g., Virox®).

    c. Trifectant is available in tablet form for ease of mixing; or as a powder which can be mixed by trained staff. Trifectant must be discarded every 7 days. Trifectant is available at many sources online. (Type "Trifectant" into Google).

    d. Accelerated Hydrogen Peroxide is available premixed or as a concentrate. **http://anivacfirst.com/accel-tb-rtu-usa.html**

    e. Bleach is not active in the face of organic matter. If bleach is used the surface must be pre-cleaned e.g., with Jungle Jake. Bleach bottles should be light-proof; clearly labeled and dated; and changed on a monthly basis.

6. Clean and sanitize all work areas at least daily and after any time contamination has occurred from a sick or dead animal.

7. Thoroughly clean and disinfect the entire room (including walls, doors, handles, keyboards, etc.) weekly.

STAFFING

Strengths

- All intakes were performed by veterinary technicians who appeared skilled in animal handling and administration of intake treatments and vaccinations.

- Up to four technicians were scheduled per day which provided flexibility and a good chance that on any given day at least 1-2 trained technicians would be available for this activity.

- Vet tech staff that process incoming animals are generally observed to be calm, gentle and skillful in handling animals.

- Intake treatments are administered quickly and with finesse, decreasing stress on the animals.

- Technicians, officers and animal care staff worked together effectively as a team

Problems

- Cats waited for up to 6 hours in small carriers with no food, water or litter. Cats and kittens showed significant signs of stress while awaiting intake, crouching in the back of carriers in a frozen posture with eyes widely dilated.

Figure 1—a kitten eats eagerly after spending hours in its carrier without food or water.

- Dogs dropped off in police bay were sometimes not processed until late the following afternoon, potentially being exposed for more than 8 hours if they were dropped off overnight. This substantially increases risk of disease and decreases the likelihood that vaccines will be effective, especially if dogs go through the kennel cleaning process prior to initial evaluation and vaccination.

- Vet tech staff performing intake had multiple other duties and were frequently interrupted and distracted both during intake and while performing other duties. This resulted in errors and delays and increased risk of infectious disease exposure for animals being processed for release as well as intake animals. The frequent distractions also made each process considerably more time consuming, as it took time for staff to regroup for each activity each time they returned to it.

- ACO intakes needed to be processed by vet techs, resulting in urgent breaking away of technicians from other duties whenever ACOs arrived with animals. ACOs then had to wait while their animals were processed, when they then placed the animal in a kennel. Vet techs had to set up their own kennels for over the counter animals, resulting in those animals waiting yet longer when techs did not have time to set up a kennel or cage. In one case, this was observed to lead to a 6 hour wait for a cat that had been processed, but sat without food or water until a technician had time to move it to a cage.

Recommendations

1. Based on a conservative estimate of 15 minutes of staff time per intake, three hours per day of staff time will be required for dog intake and 5 hours for cats during the four months of peak feline intake season. Ensure adequate intake staff time such that delays in processing do not occur.

2. Because of the set-up of dog runs in this facility (single runs with relatively poor ventilation), exposure to disease is likely soon after admission and prompt administration of vaccines is especially important.

3. Designate an intake technician to be present seven days/week in the shelter during the busiest intake shift (e.g., 8-4) or 10-6. This need not be a certified technician but the person must be skilled and sufficiently trained in all intake processes. The intake technician should not have other time-sensitive job duties so that intake can be a main focus. In addition, a "floater" should be available to assist with over the counter and police drop off processing but need not be dedicated full time to this area.

4. Train ACOs to perform intake processing and have them process their own animals for admission, including vaccination and administration of all preventive treatments.

5. Have animal care attendants set up all empty kennels with dishes, litter pans, and beds. Develop a system to indicate that a cage is clean and ready for use (e.g., a tag that states in writing "clean"; animals may only be placed in cages designated as clean).

6. Never hold cats in carriers awaiting intake processing for more than 15 minutes; animals should ideally be processed immediately, but if they must wait, place them in a designated cage or run in the intake area and provide them with food and water (and litter for cats). Never allow animals to remain in intake areas overnight or throughout the day.

SCANNING

Strengths

- Intake staff consistently scanned all adult animals (including DOAs) and single kittens for microchips using at least one scanner.
- Two scanners were available for use in the intake area, including one universal (AKC) scanner.
- A space on the hard copy animal intake form was available to note whether the animal had been scanned by a field officer.

Problems

- The scanners currently in use do not reliably detect the most common microchip used by many shelters (the AVID scanner does not detect some chips at all, and the AKC scanner only detects less than 70% of newer chip types).
- Although staff generally did scan animals at intake, technique was inconsistent.

Recommendations

1. Ensure that all animals are scanned at pick up in the field, at intake, at outcome, and if possible, multiple times during the shelter stay. Multiple scans substantially increases the likelihood of microchip detection.

2. Obtain Bayer or new Home Again universal scanners and provide these to each officer and place in each area where scanning takes place, including the intake area, outcome processing area and euthanasia room.

3. In the meantime continue scanning each animal with both the AVID scanner as well as the AKC scanner, as the accuracy between the two of them is reasonable. Use of multiple scanners increase the likelihood of finding chips.

4. Train staff on proper microchip scanning technique.

5. See Additional Resources for details on microchip scanning.

6. Procedures for Scanning for a Microchip
   www.sheltermedicine.com/documents/micro_scan_proc.doc

   a. Diagram, Scanning for a Microchip
      www.sheltermedicine.com/documents/scan_for_microchip.pdf

   b. Webinar, www.aahanet.org/learningcenter/microchip_scanning.aspx

7. To increase staff comfort level with global scanners, hold a scanning workshop and practice scanning technique on animals known to have microchip identification.

8. Post instructions and diagram for scanning animals in all areas where scanners are available. (See below for links to instructions). Hold staff accountable if microchips are detected after intake.

DATA ENTRY

Strengths

- Intake staff are quick at data entry into Chameleon and consistently entered intake treatments of vaccination and deworming into the appropriate field (as well as into the notes section which was not necessary).
- Results of physical exam are consistently noted on a paper form.

Problems

- Data entry is significantly repetitive, leading to substantial wasted time and opportunity for errors. The same data is entered onto paper forms and into Chameleon, and treatments are entered twice in Chameleon, in the notes as well as appropriate treatment fields.
- Absence of kennel cards impedes effective communication and hampers population management and animal care.

Recommendations

1. Discontinue use of paper intake forms. Use Chameleon for all intake information. Use treatment field for all intake treatments; there is no need to rewrite this information in the notes field.
2. An exam form can be placed in Chameleon to replace the clipboard currently used to record physical exam findings. This way the information can be kept with the rest of the animal record and made available to potential transfer partners or adopters.
3. Schedule Chameleon re-training for intake and field staff and/or visit a shelter that is using Chameleon efficiently. (We can ask Chameleon for a recommendation for a shelter in this region if available.)
4. Ensure that computer stations are available in each intake area so that data can be recorded simultaneously with the intake process.
5. Print kennel cards for every animal during intake and place immediately on cage or kennel. Keep kennel cards current throughout the animals' shelter stay and replace if necessary; print updated kennel cards when animals are moved or status changes.
    a. Half size pouches are available to hold a folded Chameleon kennel card. These may be less obstructive of the view of animals.
6. Discontinue use of tags to identify animal status and needs; use Chameleon fields (e.g., for caution) or if necessary colored dots or stickers to replace colored and shaped tags.

7. Give each incoming animal, including litters and mothers, an individual Chameleon animal ID number. Litters can be linked within Chameleon. When kittens are born in the shelter, each kitten must be entered into Chameleon as an individual and receive an ID number.

IDENTIFICATION

Strengths

- All animals are photographed. The photographs are then linked to the Chameleon record.
- An ID collar is created for every animal. The collar is marked with the animal record number.

Problems

- ID collars are not consistently placed on the animal and are secured to the kennel instead. This leads to the possibility that animals will be separated from their ID number, leading to errors in identification and potential failure to hold for the legal stray period and even inappropriate euthanasia.
- Cats are photographed in their carriers leading to poor quality photographs that do not accurately show markings and may not allow rescue/transfer partners to assess candidates for rescue by their programs.

Recommendations

1. Immediately place ID bands on all tractable animals, including litters, and ensure that the ID bands remain on the animal throughout their shelter stay (replace if necessary). Cut ID bands in half or obtain thinner ID bands if helpful.
2. For kittens that are too small to wear ID bands, place a sufficiently detailed written description in Chameleon to distinguish each littermate, and photograph each animal separately on their cage cards.
3. Remove tractable cats from carrier to take Chameleon photograph.
4. Discontinue use of metal numbered tags as additional method of tracking animals.
5. If animals come in with collars, leave them on the animal unless they pose a significant risk (e.g. too tight, choke chains).
6. Ensure that any collars removed from incoming animals are photographed on the animal, maintained with that animal, and recorded in the Chameleon record.

EXAM

Strengths

- Dogs are weighed.
- Instructions are posted in the intake area describing the correct method to age animals by dentition.

Problems

- Although physical exams are performed, they were sometimes cursory and may overlook significant conditions.
- Physical exam findings were not entered into Chameleon, preventing easy communication of physical exam findings with other staff members, potential adopters or transfer partners.
- Screening for ringworm was not performed.

Recommendations

1. Assess every incoming animal for injury, disease, or other medical conditions that may need immediate attention. This first line of defense will protect the other animals in the shelter from potentially contagious conditions, the animal care staff from zoonotic threats, and the individual animal from unnecessary pain or suffering.
2. Have a veterinarian retrain intake staff in physical examination, including careful skin exam and use of Woods lamp for ringworm screening.
3. Use a veterinary medical log to alert the veterinarian to medical problems detected at intake. See veterinary services section for more information on the veterinary medical log.
4. Weigh all incoming cats as well as dogs.
    a. Animal weight can be a good indicator for health and welfare concerns during an animal's stay at the shelter. Getting an accurate weight at intake will enable monitoring of the animal's condition throughout its stay.
5. Obtain two pediatric scales and place in each intake area. Use a pediatric scale for small dogs and for cats.
6. Weigh cats in their transport carriers to minimize stress and staff time. While empty, weigh each commonly used type of transport carrier (feral cat box, wire carrier) and note the weight of each type of carrier next to the scale. When an animal is weighed in the carrier,

simply subtract the empty weight from the total weight to determine the actual weight of the animal. If carriers other than the standard carrier are used, remove the cat for weighing.

7. Wipe down the scale between uses as noted in the biosecurity/sanitation section.

Additional Resources

Shelter Medicine for Veterinarians and Staff. See Chapter 8, Dog and Cat Care in the Animal Shelter by Lila Miller.

Miller L. A Basic Physical Examination for Shelter Animals. Animal Sheltering Magazine, 2007;57-59. Available online at www.animalsheltering.org/publications/magazine

How to Tell if a Cat or Dog may need Veterinary Care - information sheet available online at: www.animalsheltering.org/resource_library/magazine_articles/mar_apr_1996/how_to_tell_cat_dog_vet_care.html

Performing a Physical Exam on a Shelter Animal
www.sheltermedicine.com/documents/performing_physical_exam.pdf

Vaccination and Parasite Control

Vaccination of every animal immediately on intake is one of the keys to maintaining a healthy shelter population. Modified live vaccines provide the quickest and most robust immune response.

Strengths

- Most cats and dogs are vaccinated on intake with modified live vaccines.
- All tractable cats and dogs receive internal parasite control (pyrantel pamoate) on entry into the shelter.

Problems

- Staff is unaware of what signs to look for or what steps to take should a reaction occur.
- Follow-up vaccination and deworming was not performed.
- Vaccines were reconstituted and left unrefrigerated, leading to possible vaccine inactivation.
- Reconstituted vaccines were left out in a bin on the counter for over an hour. This can result in the vaccines becoming ineffective.

Recommendations

1. Revaccinate puppies and kittens for DHPP and FVRCP respectively, every two weeks as long as they are in the shelter.

   Young animals are given a series of vaccines in order to overcome maternal antibody interference and ensure that a vaccine is received as soon as possible after maternal antibodies have dropped to a level that allows the animal's immune system to respond. Vaccination more often than every two weeks runs the risk of interference by the immune response to the previous vaccine and should be avoided.

2. Consider revaccination of adults two weeks after intake if still in the shelter and recommend revaccination if transferred to other facilities or an adoptive home.

3. The intranasal Bordetella vaccine need not be repeated except in puppies less than six weeks of age at the time of initial vaccination. In these puppies it should be repeated once when they reach six weeks of age (and at least one week prior to return to a shelter environment from foster care).

4. Use Chameleon to generate a list of animals due for revaccination each day. A "UC Davis" revaccination report is available which follows our recommended schedule.

5. Remove vaccines from refrigerator and draw them up immediately before administration. Do not leave vaccines on counters especially after reconstitution.

6. Reconstituted vaccines can be made up for revaccination and carried through the shelter in a bin to revaccinate animals in their kennel, but must be used within an hour or be discarded.

7. Bordetella vaccine was not always administered successfully. Retrain staff in proper intranasal vaccine administration. This is especially important because kennel cough was identified by rescue/transfer partners as a significant concern.

8. Follow AAFP guidelines for location of vaccine administration if possible: Give FVRCP subcutaneously in the right shoulder as far down the leg as possible, right rear limb for rabies.

9. FVRCP vaccine can cause full blown URI in cats if they lick it off fur or surfaces. Clean vaccine spills off fur or surfaces with alcohol, Trifecant or Accelerated Hydrogen Peroxide.

10. Post signs in intake areas describing recognition and response to an adverse vaccine reaction. For additional information, see: http://www.sheltermedicine.com/portal/is_vaccination.shtml#reactions

11. Repeat deworming with pyrantel pamoate. For additional information, see: www.sheltermedicine.com/portal/is_parasite_control.shtml

12. Deworm puppies and kittens with pyrantel pamoate every two weeks between the ages of two weeks and three to four months of age.

13. Deworm all pregnant and nursing dogs and cats with pyrantel pamoate every two weeks while housed in the shelter or foster care.

14. For all other adult dogs and cats, give a second dose of pyrantel pamoate two weeks after intake, if still in the shelter.

15. Enter review dates into Chameleon for proper follow-up deworming.

16. Diarrhea was frequent in kittens. Coccidia is a common cause of diarrhea in kittens; have a veterinarian evaluate fecal samples periodically to diagnose common internal parasites. Consider administering Ponazuril (Marquis paste) on intake to all kittens.

17. Revolution was reportedly administered at the time of evaluation for transfer to treat external parasites. Treat animals at intake at least when fleas or ticks are observed. Revolution is an acceptable choice; if they are more cost effective, Advantage, Frontline or Capstar are also acceptable. Capstar should be available for animals that are heavily infested to provide immediate relief.

Monitoring

Monitoring was insufficient to promptly identify all sick animals and move them to isolation areas. Cats that were sneezing and/or had severe diarrhea, and dogs that were coughing or had vomit or diarrhea in their cages were observed in the general population.

Isolation and Segregation Housing

Strengths

- Designated isolation areas exist for cats and dogs
- Designated housing exists for kittens

Problems

- Puppies are housed in the general population mixed with adult dogs. This increases disease exposure risk for puppies and makes it difficult to put special handling practices in place to protect these young animals.
- Sick animals are not always promptly identified and moved to isolation areas.
- Isolation areas are too large for the number of sick animals appropriate to house in this facility.

Recommendations

CANINE ISOLATION

Short Term:

Designate the western bank of runs in kennel four for isolation. Create chain link gates to physically separate these from the other runs. Ideally use only seven of these runs for treatment of sick dogs; keep half the runs empty and move the dogs as a block for cleaning.

Long Term:

Make double sided runs in kennel four available for quarantine and use current quarantine area for canine isolation.

PUPPY SEGREGATION

Short term:

Puppies are currently mixed in with the general population. House puppies in K-1 along with small and older dogs. Although ideally puppies should be housed in an entirely separate ward, the current facility does not permit this. Ensure that space in K-1 is sufficient to allow movement of full blocks of dogs so that runs can be fully cleaned and dried

between use, as this is especially crucial for puppies. This will require K-1 being no more than 2/3rd full (no more than 26 dogs). Have staff wear clean protective clothing and footwear for cleaning in K-1.

Long term:

Prioritize creation of double sided runs in K-1 for puppies. Removing puppies from runs daily for cleaning creates inevitable risk for disease transmission.

FELINE ISOLATION

Short term:

Feline isolation is acceptable as currently used. However, this ward should be kept at no more than half full at maximum.

Long term:

In the long term, use the current isolation as an additional cat holding ward to permit doubling of some cages; more feline isolation to the current reptile room, and move reptiles to current cat quarantine. See sections on feline housing and population management for more details.

KITTEN SEGREGATION

Housing of kittens in a designated ward as currently practiced is helpful to permit special handling and care for this vulnerable population. As for puppies, clean clothing should be worn by staff working in this ward, and hands washed or clean gloves worn when handling kittens. However, even under these circumstances it is not practical to expect that most kittens will stay healthy if they remain in a crowded shelter environment for seven days or more. Therefore a priority should be transfer of kittens for offsite holding prior to the expiration of the stray period.

Veterinary Services

ADEQUACY OF SERVICES

(After hours care, availability of vet hours for medicine, surgery, technicians)

Adequate veterinary staff must be present for a shelter to function efficiently while providing an acceptable standard of care. At the time of this site visit, MADACC had two contracted veterinarians for surgery with varying hours weekly and one part-time veterinarian on staff. The shelter has hired a fulltime veterinarian who will begin in late August. There are three fulltime

veterinary technicians and three part-time technicians. Two are certified veterinary technicians. In case of an after-hour emergency, the animal will be transferred to a local emergency clinic.

Strengths

- One full-time veterinarian is being hired with shelter medicine expertise.
- After hours and emergency care provisions exist when veterinary staff are not on duty during weekday nights and weekend nights.

Though this wasn't observed directly, it was reported by veterinary staff that this system is working well.

- Staff is caring and appeared concerned about the animals' health.

All technical staff observed was gentle with the animals during. Staff appeared to be knowledgeable in appropriate handling techniques.

Problems

- Technicians do not have enough available hours to focus on medical tasks that utilize their specialized skills.
- Technical staff is currently overwhelmed tracking inventory for transfer, determining cage allocation, cleaning euthanasia area, and performing redundant tasks such as copying medical treatment forms on to multiple papers and the computer system (when time is available).
- There is currently no technician assigned to assist with helping the veterinarian during medical rounds, exams, or procedures. Technicians leave other duties when contacted, but this disruption leads to tasks being forgotten or missed.
- Veterinary care of animals in the foster program is inadequate.
- There is insufficient staff time set aside to monitor this program currently. Plans exist to have a volunteer coordinator and the supervisor oversee this program, but currently there is a lack of monitoring of animals that are in foster homes.
- Animals in the foster program are not receiving timely vaccination, parasite control, or spay-neuter.
- There is no system for monitoring the health of animals in foster care.

Recommendations

1. Ensure that the new veterinarian has adequate time and staff allotted to perform necessary medical tasks.

2. It will be necessary to assess the adequacy of the technical staff to veterinarian ratio periodically as the new veterinarian assumes more responsibility at MADACC. Regular reviews with the veterinarian will help determine if staff allocation is appropriate.

3. Assign ACA's and janitorial staff to cleaning tasks currently assigned to veterinary technicians.

4. This will minimize risk of disease transmission in addition to freeing more time for technicians to focus on animal health. It is especially important that staff assigned to isolation and euthanasia areas are not also assisting with intake.

5. As the foster program is further developed and strengthened, clear guidelines need to be in place for scheduling of wellness exams, revaccinations, deworming, and surgeries.

    a. A designated staff member should be assigned as the central contact for fosters in the event of a medical concern.

    b. Use Chameleon to keep track of animals and set recheck dates for vaccinations, parasite control, and surgery.

    c. Foster owners should be trained in recognizing basic signs of illness and whom to contact in the event of a problem. One potential resource is:

        i. How to Tell if a Cat or Dog may need Veterinary Care"- Information sheet available online at: www.animalsheltering.org/resource_library/magazine_articles/mar_apr_1996/how_to_tell_cat_dog_vet_care.html

VETERINARY OVERSIGHT

One of the critical aspects of a functioning shelter medical program is proper veterinary oversight. Veterinarians are skilled in diagnosis of disease, making treatment choices, performing medical procedures and making critical decisions. These tasks define veterinary practice and should not be delegated to technicians. Delegating these tasks to technicians without proper training decreases the quality of care at your shelter.

Likewise, veterinarians who do not stay current on best practices and who do not update their skills will be ineffective doctors. In these situations, veterinary oversight of these doctors and frequent reviews are important to maintain the overall health of the shelter.

Strengths

- Staff is aware of deficiencies in training and oversight.
- A new veterinarian with significant shelter medicine expertise has been hired to oversee this department.

Problems

- The practice of veterinary medicine has been placed in the hands of untrained technicians. The staff veterinarian present is not prioritizing animal health and is focused on non-medical tasks. In effect, there is no veterinary oversight present which is leading the technical department to address animal health in a manner that is inefficient, substandard, and potentially dangerous to animals.
- Veterinary technicians are diagnosing disease, creating treatment plans, and making critical medical decisions without veterinary supervision.
- Veterinary technicians rarely consult veterinarians on cases. In effect, these technicians are practicing veterinary medicine without sufficient knowledge.
- Veterinarians are not currently present to review protocols and ensure that treatments and diagnoses are accurate and effective. (Example: Animals are being placed on antibiotics for inappropriate time courses leading to animals either being overdosed [with subsequent consequences such as diarrhea] or under dosed and hence, no improvement in clinical signs.)

Recommendations

1. Clear written guidelines and job responsibilities should be established for all technical staff and veterinarians to ensure that veterinary staff members are being utilized in a manner that takes advantage of their specialized skills.
2. Clearly define separate roles for veterinarians versus technicians.
3. Veterinarians should focus on tasks that include but are not limited to:
    a. Daily medical rounds and population management
    b. Examination of all sick animals
    c. Oversight, development, and implementation of infectious disease management and prevention protocols
    d. Development of general medical protocols

e. Spay/neuter surgeries

4. Technicians should focus on technical tasks such as:

    a. Medical treatments

    b. Vaccination and parasite control

    c. Assisting veterinarian with daily rounds and medical procedures

    d. Updating Chameleon with medical treatments, vaccine schedules, and parasite control

5. Technicians should stop time-consuming activities that do not use their specialized training (such as creating lists for transfer animals, locating empty housing units, and cleaning of euthanasia, isolation and groom room).

6. Develop a means of ensuring that all staff work effectively with veterinary staff and that once policies and protocols are in place, they are enforced.

7. Regular staff reviews can help define and meet goals.

8. There must also be a system of stepwise consequences for failure to follow procedures.

9. Create a clear system of accountability for medical decisions that are made.

10. Provide continuing education opportunities for all veterinary staff members.

11. Providing financial support and sufficient time for all veterinary staff to pursue continuing education specific to shelter medicine is suggested. Shelter medicine training is available at many regional and national veterinary conferences, as well as online.

12. Staff may join the Veterinary Information Network and the Association of Shelter Veterinarians list-serve to consult specialists and participate online regarding shelter medical issues and current practices. Questions can also be posted at the UC-Davis Koret Shelter Medicine website.

    a. www.sheltermedicine.com

    b. www.vin.com

    c. www.sheltervet.org

Additional continuing education opportunities can be found at: http://www.sheltermedicine.com/education/events.php#top4.

Disease Recognition and Diagnosis

Disease recognition and diagnosis of the in-shelter population must be a priority for the veterinary services and staff. Failure to do so is likely to lead to a spiral of illness, prolonged shelter stays, and in worst cases, disease outbreak, which can ultimately result in substantially increased costs, decreased adoptions, compromised welfare and needless death.

Problems

- Daily medical rounds are not conducted leading to failure of disease recognition and diagnosis. There is currently no system in place to check the overall health of the population. Technicians performing medical treatments may make note of an ill animal, but without a clear procedure in place for assessing all individuals, animals will be overlooked. Cleaning staff occasionally make note of ill animals, but it was repeatedly observed that animals with clear signs of disease were not being flagged for veterinary staff to examine.

- Medical protocols and training manuals are either non-existent or inadequate. Protocols currently available do not reflect acceptable standards or best practices. A few technicians reported learning diagnostic techniques without written protocols and when asked to verbally explain the diagnostic procedure, were unable to do so accurately. (Example: Technicians inaccurately identified a kitten as ringworm positive and were unable to explain the diagnostic procedure accurately.)

- The current pink slip notification system is disorganized and prone to error. Slips are written to notify technical staff about ill animals but it was clear that slips are frequently lost, misplaced, or overlooked.

- Animals are currently being misdiagnosed. Without proper training, technical staff is inappropriately diagnosing disease. Veterinarians are not verifying that individual animal diagnoses are accurate leading to animals receiving inappropriate medical care. (Example: Kitten A210261 was placed in cage C136 on 6/18/10 with a “Ringworm +” diagnosis and tag stating “Ringworm +” and no other warnings about potential zoonotic risk or infectious potential. Chameleon record indicated a positive Wood’s Lamp test. No further testing, treatments, indications, or plans were made for this kitten. He was housed in the same room as 4 other kittens with green “available” tags, including a Persian cat who was housed in the cage immediately next to him. When retested by our team on 6/22/10, no lesions were found on this kitten.)

- Precautions are not being appropriately taken for animals exposed to serious infectious disease thereby greatly placing the entire animal population at risk.

- Animals that have been exposed to panleukopenia and parvovirus remain housed in general population despite having known direct exposure to clinically positive animals that have been euthanized. These animals are not monitored or identified as possibly harboring

disease. This greatly increases the risk of spreading infectious disease throughout the population.

Recommendations

1. Institute daily morning veterinary rounds for all animals. Monitoring the welfare of individual animals as well as the health of the population of animals should be an integral part of the shelter medical program at MADACC.

    a. The staff veterinarian and other team members should perform daily veterinary rounds to ensure that all animals are receiving the necessary treatment and considerations so that they can move through the system as efficiently as possible. Doing morning rounds together will ensure that no animal is overlooked and that miscommunication does not result in delays on the operational flows. The veterinarian will also be able to evaluate the effectiveness of treatment plans.

    b. Treatment sheets can be kept in a binder system with one binder in each isolation area (cat, dog) and three binders kept in a central location for general population animals (cats, dogs, exotics).

2. The veterinarian should use a medical log to keep track of animals needing follow-up treatments and procedures. A sample medical log can be found at www.sheltermedicine.com/documents/medical log.doc

3. Veterinary rounds should be separate from Daily Rounds which are described in the Population Management Section of this report. Both may require the veterinarian so adequate time should be set aside daily for her to prioritize these tasks. See Daily Rounds Action List to maintain a record of actions during the walk-thru. Daily Rounds Action List, www.sheltermedicine.com/documents/daily_rounds_list.doc

4. Create one clear system for staff to report medical concerns to the veterinary department. For example, a clipboard in a central location on which staff and volunteers note all medical concerns, that is checked at least daily by veterinary staff. Chameleon may also be used for this purpose provided sufficient computer stations and technological expertise are available to ensure a functional system.

5. If a non-computerized medical log is used, it should include, at minimum:

    a. The date the problem was observed

    b. The animal's ID# and name

    c. Animal's location

d. A description of the animal (in case it has moved by the time a vet check is completed)

e. A description of the animal's symptoms

f. The name or initials of the person entering the information

g. Space to note when the exam was completed and by whom (and outcome of exam if desired)

6. Keep one central binder readily accessible with current protocols.

7. Provide written and verbal training to all staff members and volunteers regarding what to do if disease is noted in an animal.

8. Training should include how to recognize and report disease, and when to take emergency measures versus when disease may be written on a log for later examination by the veterinarian.

9. Technicians should be trained on the appropriate use of relevant diagnostic tests such as the parvovirus SNAP test, skin scrapings, fecal flotations, Wood's lamp examination and the use of a microscope. Strictly isolate animals exposed to serious infectious disease to prevent continued spread of infection.

10. Depending on resources and the infectious agent, this can be done either by a quarantine period, antibody titer check, or immediate euthanasia.

11. Exposed animals should be housed in a ***separate*** ward. Any area where exposed animals are housed must be amenable to thorough cleaning and disinfection.

12. With the current limited quarantine & isolation space available, MADACC may better accomplish isolation for highly adoptable animals in a foster home or rescue partner provided they have been duly advised of the risk.

13. Staff should be trained in appropriate isolation protocols:

14. Minimize handling of the animals during isolation.

15. Handle animals in quarantine after caring for healthy animals.

16. Wear protective clothing (gown, boots or shoe covers, and gloves)

17. Shoe covers or dedicated boots for quarantine are preferable to foot baths.

18. Use supplies (brooms, feeding carts, scrub brushes, etc.) dedicated to a quarantine or isolation room.

19. Change gloves between handling animals.

20. Discard contaminated barrier clothing and wash hands before leaving room.

Additional Resources

Hurley KF. Disease recognition and diagnostic testing. In: Miller L, Zawistowski S, eds. Shelter Medicine for Veterinarians and Staff. Ames, Iowa: Blackwell, 2004;307-314. (See Appendix 18.1 for a Sample Animal Health Check Form).

Hurley KF, Miller L: Infectious Disease Management in Animal Shelters http://www.amazon.com/Infectious-Disease-Management-Animal-Shelters/dp/0813813794

Additional resource: *Miller and Hurley, Eds. (2009). Infectious Disease Management in Animal Shelters. Ames, Iowa, Wiley-Blackwell, Chapter 4, Outbreak Management*

TREATMENT FOR COMMON DISEASES

A balanced and healthy animal shelter is not equivalent to a veterinary hospital. While some illness is unavoidable in a population of animals, preventing severe and widespread illness is more humane, effective, and efficient than attempts at treatment on a massive scale**.** Treatment and health protocols that identify illness and provide clear guidelines will significantly improve animal welfare. While prevention should be the focus of the veterinary team, a comprehensive treatment protocol and plan should be established for those animals that are ill at MADACC.

Problems

1. Treatment selection, preparation, and administration are inappropriate.

2. Current system uses a litter box and a single paper towel for multiple animals. (See photo below) Once meds are wrapped in meatball, they all look the same and may roll around during transport to the animals. This could potentially lead to inappropriate administration of a medication or at the very least, would lead to the time consuming task of identification of all the pills.

3. Consumption of the medication is not consistently verified. Animals had medications left in their cages after morning treatments. These animals were not flagged for review and no notes were placed that medications were not being ingested.

4. Second and third daily treatments are often missed due to lack of technician time.

5. The current labeling of cages with animals undergoing treatments is inadequate.

6. Some animals have a diagnosis written on a white tag, others have blank white tags.

7. Antibiotics currently being used are ineffective and inappropriately dosed.

8. Antibiotic choices are not effective for the pathogens targeted. (Example: Cephalexin is ineffective as the primary antibiotic for kennel cough.) (Example: Three times daily tetracycline for kennel cough is not effective when given twice daily and at odd intervals.)

9. Current protocols list drugs and doses without specific indications, time course intervals, or side effects.

Figure 2

Recommendations

1. Provide ample time for the new veterinarian to review standard protocols and provide training for treatment of the common diseases encountered in the shelter.

    a. Revise treatment protocols to reflect current knowledge of best treatment choices for shelter animals.

    b. Train staff in using protocols appropriately when veterinarians are not present.

    c. Clearly delineate appropriate stepwise antibiotic choices.

    d. Ensure ongoing veterinary monitoring of antibiotic treatment choices.

2. Modify the current system of dispensing medications (litterbox with meatballs). One simple solution is to purchase a medical cart for this purpose where medications are drawn up immediately before administration or a stable caddy that can be carried with clearly labeled drugs.

3. Train staff to monitor ingestion of medications and notify veterinarians to make appropriate modifications when animals are not taking their medications.

4. Use Chameleon to generate treatment sheets or create written treatment sheets that contain the following information:

    a. Animal ID number & Location (Cage Number)

    b. Diagnosis

    c. Start Date/End Date

    d. Drug, Dose, Frequency, and Route of Administration

    e. Checkboxes to initial daily when medications are given

5. Establish an appropriate labeling system for cages that includes health information (See Population Management section).

6. A proper cage card system would expedite identification of ill animals and ensure that proper animals are being treated for illness.

7. Animals on treatment need to be clearly identified (e.g., by placing a designated sticker on kennel cards or using one designated tag)

8. Chameleon can be efficiently used for this purpose—along with a central binder.

9. Designate separate areas for intake processing and medical procedures to minimize cross-contamination. Suggestions for alternate intake areas have been given in the intake section.

Medical Record Keeping and Processing

Clear medical records are critical to properly track disease and flow of animals through a shelter. Proper documentation of physical exams, treatments, and diagnostics will also aid doctors in combating outbreaks and designing protocols.

Strengths

A computerized system is in place to record and generate medical exams, treatments, and reports. Used correctly and consistently, this will assist with monitoring measures of population health and medical record keeping.

Problems

- Medical records are incomplete. Treatments, diagnostic tests, medical conditions, and veterinary examinations are not consistently noted.
- Staff veterinarians and technicians do not feel adequately trained in Chameleon.

Recommendations

1. Provide appropriate training to staff in the proper use of Chameleon.
2. Each animal at MADACC should have its own medical record with all pertinent information. Animals should have recheck appointments, vaccination schedules, and parasite control schedules saved in Chameleon. These lists should be printed daily so that animals are not missed. The medical file should include the Chameleon medical record, any paper treatment sheets, and surgical report if paper-based. Eventually, the entire medical record may be housed in Chameleon.
3. Animal shelters are unique environments where staff may be routinely exposed to zoonotic diseases. It is important for all staff to be trained in the risks associated with zoonoses and precautions that should be taken to minimize exposure.
4. Train staff about the most frequently observed zoonotic diseases and precautions to take when an animal is suspected of having a zoonotic disease. Technical staff should also be trained on appropriate diagnostic steps and isolation procedures to handle suspect animals.
    a. The Center for Disease Control "Healthy Pets, Healthy People" website www.cdc.gov/healthypets/ contains a link to Standard Precautions for Zoonotic Disease Prevention in Veterinary Personnel.
5. Place appropriate signs so that all staff is aware of the potential risk of exposure when a suspect animal is identified as possibly having a zoonotic disease.
6. Follow strict quarantine and isolation procedures for contagious animals. Due to the risk to humans that zoonotic diseases pose, it may be best for MADACC to transfer these animals to facilities that are equipped to handle such cases or consider humane euthanasia.

Problems

- Responsibility and process to identify suspect animals and test for zoonotic or severe infectious disease (e.g., parvovirus, panleukopenia, and ringworm) is unclear.
- The pink slip identification system currently in place is inadequate for monitoring population health. Slips are misplaced, lost, and not processed.
- Diagnostic tests are performed incorrectly or not at all, and results are inconsistently recorded, reported, and acted upon. (See example of the kitten diagnosed with ringworm that was not diagnosed correctly.)
- Personal protective equipment (PPE) is not worn by animal care staff or technicians during cleaning or handling of suspect animals.
- There is no functional plan for identifying an area for isolating animals with conditions that may be contagious to humans as well as other animals.

Spay-Neuter Services

MADACC has undertaken the important task of providing low-cost spay neuter services to the Milwaukee community. While their intent is commendable, the execution is lacking. Private owners are entrusting their pets' lives to the surgery department at MADACC. These animals are being placed in risky situations that may lead to severe consequences. While it is critical to promote timely spay-neuter in communities, it should not be undertaken until appropriate supervision and facilities are available to ensure risks are minimized.

Strengths

- Spay-neuter services are provided to the MADACC community at low cost.
- Veterinary surgeons are designated solely for the purpose of spay-neuter.

Problems

- Serious patient safety concerns exist.
- Aseptic technique is not consistently maintained greatly increasing the risk of surgical complications.
- Gloves are not consistently changed in between surgeries. This can lead to increased surgical infections and also increases the risk of spreading infectious disease such as FELV and FIV.
- Face masks and caps are not worn by technicians and surgeons.

- Sterile field was not maintained during surgery.
- Animals were prepped on the surgery table with open surgical instruments present leading to potential contamination of instruments.
- Staff pets are present in the surgery room during surgeries.
- Surgical animals are being housed in police night drop kennels.
  - Privately owned surgery animals are thereby potentially exposed to serious infectious disease since stray, unvaccinated animals are also housed in the same kennels.
  - This location is far from the surgery area and cannot be monitored by staff. Animals are pre-medicated and recover post-surgery in these kennels without any supervision thereby greatly increasing the risk of aspiration or even death.
- Animals are not receiving physical exams by veterinarians prior to surgery to assess if they are healthy to proceed with surgery.
- Animals are not being adequately monitored before, during, and after surgery.
  - Anesthetic monitoring equipment is present, but is not being underutilized.
  - Animals are being extubated before having an adequate gag reflex. This greatly increases the risk of aspiration or death post-surgery.
- Veterinary staff conducting euthanasia, medical treatments, and intake processing (general population and unvaccinated animals) are also assisting with pre-operative procedures, placing public animals at risk of exposure to infectious disease.
- No individual medical records or surgical reports are written.
- The surgical suite is not equipped with emergency drugs or equipment.
- Veterinarians are performing tasks that should be completed by veterinary technicians (e.g., surgical preparation, induction, intubation, drawing up anesthestic drugs).
  - These are tasks that can easily be accomplished by skilled technicians allowing more time for surgery.

Recommendations

1. Temporarily suspend spay/neuter services until appropriate changes are made to the system to ensure patient safety and oversight of procedures.

2. Consider limiting public spay/neuter services to cats since kitten intake remains a primary problem in the community.

3. Write surgical protocols for veterinarians and technicians conducting medical and surgical duties.

4. Review The Association of Shelter Veterinarians Veterinary Medical Care Guidelines for Spay-Neuter Programs and strive to achieve these minimum accepted standards.

    a. The Association of Shelter Veterinarian's Veterinary Medical Care Guidelines for Spay-Neuter Programs**.** http://avmajournals.avma.org/doi/pdf/10.2460/javma.233.1.74

5. Protocols for pre-operative surgery exam, surgery, surgical disinfection, record keeping, anesthetic monitoring, post-operative monitoring, and emergency procedures should be standardized by the new veterinarian so that there is consistency among staff. This will decrease the chance of mistakes being made by both technicians and veterinarians and also cut down on time during procedures.

6. Sample protocols can be found at the UC-Davis Koret Shelter Medicine website and the following sites:

    a. Surgery Scheduling, www.sheltermedicine.com/documents/surg_schedule.doc

    b. Surgery Request Form, www.sheltermedicine.com/documents/surg_request_form.doc

    c. Miller L. A Basic Physical Examination for Shelter Animals. Animal Sheltering Magazine, 2007;57-59. Available online at www.animalsheltering.org/publications/magazine

7. Ensure aseptic technique is used consistently for all surgical procedures.

    a. Change gloves between surgeries

    b. Animals should be clipped and prepped in a designated area outside of surgery

    c. All staff present in the surgical suite must wear a cap and mask when surgery is performed

8. Ensure sufficient patient monitoring, including during intra-operative and recovery periods.

    a. This should include a heart rate, respiratory rate, and anesthetic depth at minimum.

    b. Maintain anesthetic records and note any complications.

9. Create protocols for admission of surgical patients and pre-surgical evaluation.

    a. Veterinarians must perform physical examination on all animals prior to surgery.

    b. Separate housing units should be assigned for owned surgical patients.

    c. The veterinarian should discuss surgical procedure/consent at time of drop-off as required by WI state law as opposed to calling

10. Develop standard medical records including a surgery report for every animal (public and shelter) undergoing a surgical procedure.

    a. Notes should be written in both Chameleon and take-home sheets.

    b. Records should include physical exam findings, a surgery report, drug doses, anesthetic monitoring, and aftercare.

11. Ensure that there is adequate technical support for the surgeon so that veterinarians are able to focus on maximizing surgeries without performing technical duties.

    a. This will allow more time for veterinarians to actively participate in the development of protocols, to improve shelter animal health, and ensure a means of managing these protocols effectively together with the staff. An increase in general staff may be necessary to ensure that veterinarians are supported appropriately.

    b. Assign designated staff to surgery and ensure that they do not interact with general population.

12. Discontinue use of night drop kennels for housing surgery animals.

    a. House surgery animals in areas that do not contain potentially infectious animals.

13. Consider re-purposing the surgical suite to include the following:

    a. Dogs and cats undergoing surgery should be housed in close proximity to the surgery room to minimize contact with general shelter population and decrease time spent walking to remote areas.

    b. Designate a surgical prep area that is separate from surgery.

    c. Animals recovering from surgery should be housed in a central area near surgery where they can be closely monitored.

14. Ensure emergency medical supplies (appropriate drugs and catheter supplies) are accessible in the surgery suite and staff is trained in emergency procedures.

15. After spay/neuter services resume and veterinary oversight is in place, calculate spay/neuter capacity requirements to determine if staffing is appropriate.

    a. Spay/Neuter Capacity Requirements, www.sheltermedicine.com/documents/spay_neut_capacity_req.doc

Dog Housing

The quality of housing has a major impact on an animal's health, stress level, and even likelihood of live release from the shelter. The quality of canine housing at MADACC was inadequate in both size and design to maintain basic physical or mental health for many dogs; likely contributes to high levels of canine respiratory and other diseases; is inefficient and unsafe to clean; and undermines the success of positive enrichment efforts such as provision of soft beds and toys, as these become rapidly soiled. Improvements to housing, particularly conversion of kennels to double-sided runs separated by a guillotine door, would have far-reaching effects on canine health.

There are five main dog housing kennel areas: K1, K2, K3, K4 and Quarantine. Additionally there is a temporary dog housing area—Emergency Holding—where overnight police drop offs are housed. Dogs are generally separated by holding status, legal status, medical status and hair coat length. Dogs were not separated by age and juveniles were observed to be housed in the same room as adults in most of the kennel rooms. The majority of kennels are made of concrete (4" thick). The kennels are concrete on the entire back wall and up to 4' on the sidewalls with the remainder of the sidewall kennel height made of open stainless steel welded rod. The tops of the kennels are open and most have been covered with light weight welded wire fencing- that is loosely fit and zip tied to the kennels. Most of the kennels that share a common back wall within the room have a 6" to 8" opening in the wire top at the common back wall. Several kennels are only partially covered and some remain uncovered. The runs in the quarantine area double-sided (side to side) with guillotine doors. Drains are 6-8" wide, covered and run the entire length of the kennels along the kennel's back wall. There are plastic coated open grate steel beds provided in every permanent kennel. These beds cover the drain in each kennel.

In the temporary holding area- Emergency Holding room 126 there are six cyclone fence dog kennels and two to three way plastic polymer units with two smaller cages and one larger cage each. Raised beds were not used in this area.

The majority of the runs at MADACC are only large enough to accommodate a 10 lb. or 20 lb. dog with a few kennels large enough for 60lb dogs. The minimum recommended floor area allowances for dogs of various sizes are provided below.

Extra small dogs (<10lb): 12 ft^2 (1.1 m^2)

Small dogs (11-20 lb.): 18 ft^2 (1.7 m^2)

Medium dogs (21-40 lb): 24 ft^2 (2.2 m^2)

Large dogs (41-60 lb.): 32 ft^2 (3.0 m^2)

Extra Large dogs (61-80 lb.): 40 ft^2 (3.7 m^2)

Giant breeds (>80 lb.): 48 ft^2 (4.5 m^2)

K1-K4 Kennels- main housing areas:

108 kennels - 6'L X 3'W X 6'H, providing 18 ft^2 of floor area.

40 kennels - 4' L X 3'W X 6' H, providing 12 ft^2 of floor area.

8 kennels - 6'L x 6'W x 6'H, providing 36 ft^2 of floor area.

Room 125 - Quarantine:

There are 8 side to side double sided kennels. These provide 36ft^2 of floor space when used as a double sided kennel and will accommodate up to 60 lb. dogs.

The kennels are too small to humanely house the majority of dogs that are housed in this facility. The kennels are in need of repair with the most common problems being loss of floor covering making a rough surface that is impossible to properly clean and disinfect. The top of the kennels are covered with a small size welded wire fencing that is not adequate to contain some housed dogs as it is lightweight and there is an open gap at the back of about half kennels (about 8"). It was reported that occasionally a dog will need to be removed from the top of the kennel structures or a dog may be found doubled up with another dog when it was not intended. In the rooms that have kennels made with stainless steel walls (K1, Quarantine) the kennels additionally need to be resealed to the floor as much of the sealant is gone leaving a gap between the kennel and the floor that will collect fecal material and debris making it impossible to properly clean and disinfect.

Strengths

- All dogs are provided a raised bed, soft bedding and a toy.
- Kennels doors are secured with a clasp when occupied.
- Kennels in quarantine are double sided.
- Warning/Notice tags on kennels communicate individual animal information.
- All climate control vents were functional and consistent in air flow rates between housing areas. All kennels were between 71 degrees and 75 degrees Fahrenheit.
- Leashes and control poles are available in all dog housing areas.
- Dogs in Quarantine are provided two kennel sections separated by a guillotine door. Guillotine doors facilitate cleaning and disinfection, improve staff safety and lower dog stress.

Problems

- The single dog runs in this facility do not meet the health and behavior needs of the majority of dogs housed in this facility.
  - Most of the kennels are only sized to humanely house dogs that are 20lbs or less.
  - Single runs do not permit safe, efficient care and cleaning of dogs.
- Open rather than solid barriers between the upper portion of kennels resulted in dogs being sprayed with water and chemicals when the adjacent kennel was cleaned, and/or inadequate cleaning of kennels.
- Dark colored red kennels interfere with observation and monitoring.
- Juvenile animals are not segregated from adult animals.
- Emergency holding area did not have dedicated cleaning supplies: staff borrowed cleaning equipment from other areas.
- Scheduling for the general maintenance of the kennels is unclear.
- Flooring is worn and chipped in the majority of kennels.
  - Damaged floors are impossible to clean and disinfect.

Figure 3

- In kennels with stainless steel walls the material sealing the wall to the floor is peeling or gone.

Figure 4

- Welded wire fencing on kennel tops do not provide adequate security.

Figure 5

- Plastic coated grate dog beds are damaged, coating chewed away, leaving many rough edges that collect debris and are impossible to properly clean and disinfect.

Figure 6

- Biosecurity (prevention of disease transmission)
- Dogs in the kennels cannot be protected from exposure to potentially harmful germs during cleaning and care due to the design of the kennels.

Recommendations

Immediate:

1. Remodel single runs into double sided runs via installation of guillotine doors (back to back design) in all dog kennel areas except small kennels on west wall of K1.

2. This will result in some kennels of sufficient size to house 60 lb. dogs.

3. Note: This will essentially make the K2-K4 kennels one large kennel. We recommend that Quarantine be moved to the row of kennels on the west end of K4 and the Quarantine room be used for isolation. A rolling gate can be installed to block access to dogs in a quarantine area:

Figure 7

4. Designate a staff position responsible for insuring general shelter maintenance and establish a recorded reporting mechanism. This includes providing oversight to prioritize needs and see that repairs and maintenance are met in a timely fashion. A list posted in the work area may be helpful for reporting and check off at completion.

5. Due to the common use and hazard of many chemicals and disinfectants, place an eyewash station very near the kennel areas.

6. Separate juveniles (less than six months old) from the main adult dog housing area. Consider housing juveniles in K1- with the understanding that some small adult dogs may also need to be housed in K1.

7. Prioritize placement of back to back guillotine doors in the kennels in this room.

Short term:

1. Repair floors in kennels and rooms.

2. Remove old silicone sealant in the kennels with stainless steel walls and re-seal the kennel walls to the floor with high quality silicone sealant.

3. Repaint kennels to a light color to facilitate observation and for improved presentation of the dogs.

4. Inventory dog beds and note conditions; replace damaged beds.

5. Bullet: Provide a storage cabinet for cleaning supplies in Emergency Holding and K4 area.

Medium term:

1. Replace welded wire kennel covers with more durable material- recommend larger welded wire paneling- for example: inexpensive galvanized hog/cattle paneling cut to fit.

Figure 8

References

David Key. 'Kennel Design: The Essential Guide to Creating Your Perfect Kennels'. This book is available at www.amazon.com or www.kenneldesign.com

Robert Hubrecht 'Comfortable Quarters for Dogs in Research Institutions' available at: www.awionline.org/pubs/cq02/cq-dogs.html

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Dog Nutrition and Feeding

Sufficient wholesome food and clean water is a necessity for humane animal care. Inadequate nutrition may lead to a decreased ability to ward off illness and respond to vaccines, while excessive, inconsistent or spoiled food can cause diarrhea which may reduce a dog's chances for transfer and can be confused with more serious disease. At MADACC, single housing of dogs helped ensure that each dog had sufficient access to food; however, many dogs were observed not to eat, either as a result of stress, contamination from feces in small kennels, or because the food was unpalatable to that particular dog. Improvements to dog housing, formal daily monitoring of food intake, and provision of a consistent, palatable diet will likely improve the nutritional state of the dogs while in MADACC's care.

Strengths

- Food was stored in a food storage area. The area was generally clean though not tidy. There was no evidence of rats, mice or other pests which was excellent.
- Puppies were feed puppy food and adults were fed adult food
- Dogs are allowed to eat prior to the start of kennel cleaning. Dogs that did not eat were not visibly marked and were not re-fed until the next feeding 24 hours later.
- Some dogs are fed a variety of foods mixed together. This prevents development of a consistent feeding scheme based on dog body size and recommended feeding guidelines for a particular food. Caloric content and absorbability vary greatly by brand and food type.
- Food was not visibly measured and food intake was not recorded.

Recommendations

Short term:

1. Organize dog food storage area for efficient use of space. Date all bags with expiration date to insure oldest food is used first.
2. Visually mark the kennel card with the amount of food to feed each dog to provide consistency in amount to be fed, independent of staffing.

3. Measure food being fed for consistency of amount of food fed day to day or recommend using a two cup scoop (rather than, the larger multi-cup mega scoop) to help maintain consistency in feeding amount. (Too easy to overfeed with large scoop).

4. Choose a brand/type of dog food and request donations of that particular food. If possible use donated food for foster parents or rescue groups.

5. Identify and monitor dogs that do not eat.

6. Make food available prior to the next feeding for dogs that do not eat their morning meal. Waiting 24 hours prior to offering food again is unacceptable.

Medium term:

1. Work to provide a consistent diet to the dogs either through a free feeding program with dog food manufacturer or through purchase.

Population Management

Cleaning and disinfection is crucial to control infectious disease spread and maintain sanitary conditions for both staff and animals. However, the sanitation process can cause harm as well as benefit, for example if animals are exposed to disease via handlers or contaminated surfaces in the course of cleaning; or if animals are exposed to incorrectly diluted chemicals, sprayed or splashed during cleaning. The single canine housing units with incomplete solid partitions between them at MADACC make these risks almost impossible to avoid. The cleaning and disinfection process can be improved but will require reconfiguration of the housing to create a truly safe, efficient and effective sanitation program.

HOLDING KENNELS

Staff members are assigned to at least one kennel each day and are responsible for feeding and cleaning in that kennel as well as identifying dogs with health or other problems.

Cleaning Process Observed

Dogs were fed shortly after staff arrived in the morning. Kennel staff performed various duties while dogs were eating- cleaning of other facility areas, mopping common walkways, laundry, dishes, etc. There was not a clear order of cleaning for the individual kennel rooms and in general there was mixing of traffic from all rooms and areas of the shelter. Each room had separate cleaning tools but these were inconsistently marked and mixing of different kennel room tools was observed.

Boots were kept and used in some rooms but use was not localized to specific kennel rooms or areas.

Cleaning

Dogs were moved from their kennels into clean kennels with a common leash one at a time. The number of dogs moved was dependent on the number of clean kennels available in the room. Often there were dogs remaining in the row of kennels to be cleaned making efficient cleaning more difficult. Though the staff was observed to be careful about trying not to spray dogs with chemicals and water it was impossible to prevent in this housing arrangement without the removal of all the dogs from the entire row of kennels. Identification and reporting of dogs with health or other concerns was inconsistent from staff member to staff member.

Cleaning procedure observed in the kennel areas:

1. Dirty laundry was removed and toys were picked up
2. Feces was removed via pooper scooper.
3. Kennels were rinsed with water
4. Foamer and detergent(Jungle Jake) was applied
5. Kennels were scrubbed- various tools used- scrub pad or brush
6. Rinse with water
7. Foamer with bleach
8. Wait ten minutes (consistently observed)
9. Rinse
10. Inconsistent use of squeegee to remove excess water
11. Set kennels- bed and bowl and toy into each kennel

Strengths

- The kennel staff are generally conscientious and try to do a good job.
- The staff make attempts not to wet dogs while cleaning occupied runs.
- General consistency from person to person in observed cleaning protocols—very good.

- Kennels were clean when bleach was applied and a ten minutes contact time for disinfectant activity was consistently observed.
- Pre-cleaning surfaces is important when using bleach as a disinfectant, as bleach is readily inactivated by organic matter.
- Clean feed dishes are used daily.
- Adequate number and placement of hand sanitizers in the kennel rooms.
- Most kennel areas have designated supply cabinets.
- Foamers are properly diluting bleach to 1000-1500ppm when they are at least half full.
- In general when disinfecting with bleach we recommend dilution of ½ cup bleach per 1 gallon water (1:32 dilution). When bleach is diluted to this level there should be approximately 1500ppm of active chlorine in solution.
- The grassy areas used for dog walking are clean and free of feces.
- Wall clocks are in every kennel area.
  - Helps to facilitate proper contact time for disinfection.
  - Baggies for dog walkers are provided in a convenient location.

Problems

- Protective clothing, eyewear, and hearing protection are not used.

Figure 9

  - Clothing that is used only during the time of cleaning can greatly reduce staff contamination and therefore disease spread to animals handled later in the day.

- Eyewear would help to reduce inadvertent exposure to chemicals and potentially zoonotic organisms that may enter via cleaning spray.

- Decibel sound levels were measured in the kennels and were in the 65-110 decibel range throughout the day with levels consistently over 80 during much of the cleaning process. Levels above 80-85 decibels are loud and are levels at which OSHA recommends hearing protection to prevent hearing loss. See attached sheet with recorded decibel level readings in kennels.

- A single dog barking reached 90-110 decibels, when several dogs were barking these sound levels remain elevated for extended periods of time. Even when no dogs were barking and cleaning was occurring sound levels were recorded at 75-85 decibels.

    - NO staff members were observed to be wearing hearing protection during this visit.

    - Hearing loss may occur if exposure to these levels of sound are experienced without hearing protection. (Links to CDC Noise Exposures and Hearing Loss Assessments among Animal Shelter Workers: SPCA Algiers, Louisiana and CDC Health Hazard Evaluation Report: SPCA Cincinnati, Ohio)

- Current housing facilities make effective cleaning and disinfection nearly impossible.

    - Single kennel housing requires handling and movement of every dog every day. Staff hands, clothing and boots as well as the kennel room floor becomes contaminated with hair, dander, feces and urine in the cleaning process which negates much of what the cleaning and disinfection process was established to do in terms of limiting disease spread, and will actually enhance spread of some diseases.

- Bleach hydrofoamers do not work adequately when they are less than ½ full (they do not consistently add the concentrated bleach).

    Solutions from hydrofoamers at less than half full tested between 25 and 800ppm free chlorine depending on how the foamer was held (desired level 1000-1500ppm). When the foamer is less than half full the plastic tube drawing the bleach is inconsistently submerged and at times no bleach is drawn up the tube and added to the water.

- Sanitizing kennels is haphazard- including frequent exits of the cleaning staff from the kennel area to do other tasks.

    - It is difficult to keep track of the stage of cleaning in the kennels with the current process. Much of this has to do with the current type of single housing units.

- Dogs experience stress due to current cleaning routines and this is extended when interruption occurs in the cleaning process.
  - Dogs housed in adjacent kennels are sprayed with chemicals and water during the cleaning process.
- Inconsistent use of squeegee to remove water from all kennels and kennel floor.
  - Floors remain wet after cleaning for much longer than desired (into the afternoon hours), creating stress for dogs and facilitating disease. Many infectious organisms thrive in a moist environment.

Biosecurity

- Daily routine protocol for cleaning order and maintaining biosecurity is unclear.
  - Unclear daily order of routine accounts for a great deal of movement of each staff member throughout the facility doing a variety of different tasks.
    - Effectively moves germs throughout facility.
- Boots worn while cleaning are worn while moving throughout the facility.
- Gloves are inconsistently worn. Gloves were only observed to be used when working with dirty laundry.
- Dog movement routes overlap with other rooms (outdoor walking routes, common use areas- back outdoor enclosed areas outside kennel doors).
- Isolation does not isolate dogs from other dogs in the facility. Staff, visitors, and volunteers move freely between isolation and other areas.
- Workers and visitors do not wash or sanitize hands between individual animal handling.
  - Hand sanitizers readily available, but not used.
- Parvo cleaning equipment location is not contained and is in a high traffic area by an exit door used by many of the walkable dogs.
  - Although the equipment is presumably clean it is in a high traffic area with a tremendous amount of likely dog/staff exposure.
- Pooper scooper cleaning and disinfection is inconsistent.
  - During observation the pooper scoopers were not cleaned or sanitized between scooping feces from different kennels (that were housing dogs). Scoopers were

inconsistently cleaned and sanitized in different kennel rooms, K1 and K3 do not have tubs for bleach disinfectant in which to soak the scooper.

Recommendations

Immediate:

1. Provide personal protective wear for each staff member that works in the kennel areas.
    a. Rubber boots, clean aprons or coveralls, gloves, eye and ear protection should be available at the entrance to each kennel area and worn by staff during the entire time of cleaning. Protective wear will provide safety to staff and limit exposure to potentially infectious material and chemicals. This clothing should not be worn outside of the assigned kennel area.
2. Hearing protection is a must for staff that work in the kennel rooms.
    a. To help staff comply with wearing hearing protection and still being able to hear radio calls- having high quality radio units that transmit clearly are helpful- including remote speaker/microphones that allow the speaker to be clipped to the uniform collar or upper part of shirt to insure that calls will not be missed even when hearing protection is worn.
3. Promptly identify ill dogs to provide necessary treatment and prevent potential spread of disease.
    a. Have kennel staff remain in the kennels after feeding for monitoring for appetite and illness (see monitoring).
4. Make sure foamers for disinfection are half full or fuller (with bleach) prior to use.
    a. Foamers that were less than half full released inconsistent and inadequate levels of bleach and thus did not achieve levels needed for disinfection.
    b. To insure concentrated bleach is never older than seven days empty foamers once a week.
    c. This should be done routinely throughout the shelter on one day of the week (added to protocol).
    d. Bleach is stable for 30 days when protected from light so storage of filled bleach foamers in the Rubbermaid cupboards in each room is sufficient to maintain bleach activity.
5. Improve drying of kennels.

a. Always squeegee kennels and floors after cleaning to remove as much moisture as possible.

b. Use larger floor fans (yellow barn fan type seen in garage area) to move air through the kennel and evaporate moisture as quickly as possible. Do not point directly into dog occupied kennels but aiming directly down center isle will greatly improve evaporation and drying.

c. If possible mounting fans on the walls of the kennels would also be beneficial.

6. Move Parvo cleaning equipment out of a high traffic area. Recommend using Rubbermaid container that can be labeled and completely closed.

7. Clean and disinfect pooper scoopers after using them in daily disinfection.

8. Scooper used between **kennels that contain dogs** should be cleaned and disinfected in between each kennel when spot cleaning. Alternatively, biodegradable bags can be used to pick up feces at times other than morning cleaning.

9. Supplies

a. Check to insure all needed cleaning equipment is available and labeled in each kennel and housing area.

b. Staff should inventory all supplies in each area at least weekly.

Short term:

10. Modify dog kennels to double sided back to back units via guillotine doors. (See Dog housing section).

a. Additionally important for efficient, adequate cleaning and improved ability to limit disease spread in the facility.

b. Secondary impacts for dogs- lowering stress due to shorter overall cleaning time and less time for exposure to cleaning products. Kennels will be dry for more of the day.

11. **Date and Post sufficiently detailed written cleaning and disinfection protocols to be followed for the Kennels. These should be updated as need and include:**

a. Products and supplies to be used and details for mixing and dilution of detergents and disinfectants.

b. Method for application of detergent and disinfectant.

c. Order of cleaning within and between areas following the rule of most vulnerable to least vulnerable and cleanest to dirtiest.

d. Protective clothing or equipment to be utilized.

12. Provide staff with sufficient training in the use of these protocols and daily supervision to insure protocol adherence.

13. Allow a sufficient amount of time to complete cleaning so that staff does not feel pressured to take short-cuts.

Cleaning of Animal Transport Vehicles

General observations: Vans were observed being cleaned outside and inside the garage. The fact that the reptiles occupied much of the garage space was limiting for observing routine truck cleaning.

Strengths

- Staff was interested in doing a good job although they were uncertain about how to insure what they did was correct.

Problems

- Vans were very difficult to clean and disinfect. Water went everywhere in the animal carrying area of the van, from the back to the front of the van in the ridges on the van floor. It was impossible without tremendous effort and time to get all debris out.

Figure 10

- Vans were inconsistently elevated in the front via use of a jack to help remove water from the van floor.

- There was no written protocol for cleaning vehicles. There was a lot of variability from officer to officer on cleaning procedure as well as how often they clean their vehicle.
- There was little to no use of disinfectant.

Recommendations

Immediate:

1. Create cleaning protocol for vehicles.
2. Provide adequate dedicated cleaning equipment—not enough hose or cleaning equipment for trucks observed to be cleaned outside.
3. Provide several foamers for detergents and bleach in the garage area.

Short Term:

4. Trucks are jacked up to allow water to drain from front. Recommend if continued use of this type of transport vehicle- devise a simple elevated structure to drive up on to drain water—truck ramps etc.

Long term:

5. Evaluate need to upgrade animal transport vehicles. Current vehicles have great weakness in ability to clean and disinfect and maintain a controlled environment in weather extremes.

Figure 11

OTHER CLEANING AND DISINFECTION

Strengths

1. Easy to disinfect stainless steel bowls used

2. Multi- compartment sinks are available in the Sink Room(labeled as Food Prep) to facilitate the multiple stages of cleaning and disinfection.

3. Floor mats provide cushion and non- slip surface for staff and volunteers.

4. Dryer lint trap free of lint buildup. Lint/hair buildup and dryer heat represent a significant fire risk.

Problems

1. In the sink room, the sharing of responsibility for cleaning and disinfection of dishes, litter pans and cat transport boxes between volunteers and staff creates a disjointed and ineffective process. The current system for communicating the status of each stage of cleaning and disinfection is inconsistently used.

2. The one-gallon bottles of bleach are inadequate to endure proper bleach availability and proper dilution in an efficient manner. Protocols require a new bleach cycle every 30 minutes, which uses more than half a gallon of bleach. At this rate the bleach bottle must be replaced nearly every cycle. At one point in the consultation the bleach bottle was empty and had not been replaced and dishes and cat transport boxes were being soaked in water in which no bleach had been added.

Figure 12

3. Transport/feral boxes are left to soak in the sink for ten minutes which substantially backs up the cleaning process.

The bleach dipping barrel (for disinfecting feral cages) had 800ppm of bleach. This is too dilute to effectively disinfect.

Figures 13 & 14

4. The sink room is cluttered with dirty and clean supplies.

    a. No adequate or designated location to place dirty dishes, litter pans and cat feral boxes. Some dirty litter pans were placed directly on the floor in a walk through area. The floor was not observed to be cleaned during the consultation.

    b. There is no adequate designated location to place clean cat feral boxes to dry. Boxes are piled on the floor in the sink room and in the groom room, blocking access to sinks and supplies.

Recommendations

Immediate:

1. Provide an area to place dirty equipment that allows containment without exposure to frequent movement of staff.

2. Double the amount of bleach added to the dipping barrel for feral cat traps to create a solution of ~ 1500 ppm.

    a. Although the basis of soaking the equipment in the bleach solution for ten minutes is correct, a simpler and equally effective method is to dunk equipment in the bleach solution and then set on the dry rack for ten minutes, then rinse and put on the dry rack for final dry.

3. The dry rack will need to be labeled for the different area needs.

4. Organize drying racks and remove any items that are getting stored there that should be stored elsewhere.

5. Evaluate need for additional drying racks.

6. Educate staff on the need to replace bleach container often—nearly every disinfectant basin refill cycle.

    a. Volunteers were especially unaware of bleach refill needs.

7. Dedicated staff member in this area seems warranted- could be something morning staff rotates through but oversight of the cleaning and cleaning process is needed. (Could be combined with laundry)

Short term:

8. Develop storage for cleaning supplies in that area. Recommend enclosed cabinet.

Cat Housing, Cleaning, and Nutrition

CAT HOUSING

Whether housed individually or in a group housing situation, cats should be maintained in an environment that allows them to make choices and express their normal behaviors in order to ensure good physical and emotional health in a shelter environment. Cats should be able to stand up, lie down and stretch out their tails without contacting a cage wall. In addition, enclosures should be large enough to allow separation between food/water bowls, the litter box and resting spaces. Cats stressed due to inappropriate housing have been shown to have increased rates of respiratory disease.

At MADACC, there are 4 main cat housing wards with 45 cages each, a quarantine room with 14 cages and 12 cages are kept in the "groom room." All of the housing units in these areas are made of thick plastic with metal wire doors and the units measure 24 inches square providing a total floor area of 4 square feet. In addition, there are two condo-type cages in the front lobby where kittens available for adoption or transfer were housed. Each unit is divided into a living area with a shelf that provides some additional vertical space and a separate area for a litter box. Overall each unit measured 2 feet deep by 2 feet high by 3.5 feet wide which provides a total floor area of almost 8 square feet plus the shelf provides an additional 2.3 square feet of floor area.

Strengths

- The staff displays genuine care and concern for the welfare of the cats and handled them gently and respectfully. The cats seemed overall calm and friendly in their surroundings

- The overall impression of the cat kennel housing was pleasant displaying clean appearance without any unacceptable odor
- Within a given room, cats are generally housed in the same cage from day to day, rather than being randomly moved from cage to cage on a daily basis
  - Minimizing the number of times cats are moved from one cage to another reduces cat stress
- Each cat/kitten was provided with a "cat carrier/security box" with porthole door that remained with them through the length of their stay provided it did not become soiled and need to be changed.
  - These boxes were usually lined with a blanket or towel and changed as needed
- Most cages house only a single cat, except for litters of kittens or queens with their kittens
- Queens with kittens were provided with padded bedding or queening box instead of a "cat carrier/security box" and a shelf which provides some room for her to move away from the kittens, if she chooses. A single strip of wide vertical blind is woven through the bars of the cage door to prevent the kittens from falling out of the cage through the cage bars (see Figure 15).

Figure 15—an example of the cage set up for queens

- Some of the cats had toys within their kennels.
- Condos in the adoption room provide a reasonable amount of space (15.9 ft3) for single cats.
- This space is inadequate for housing multiple cats but may be acceptable for cohousing of two kittens from the same litter.

- Shelves in these cages allow cats to utilize vertical space. Multiple studies have demonstrated that cats prefer resting on shelves over resting on the floor (Ibanez 2001, Smith 1994, Rochlitz 1998).

- Individual cages are in generally good repair.

- Cats with evidence of illness were identified quickly and promptly removed from the general population and transferred to the isolation ward.

- There were designated housing areas for various subpopulations of cats.

- There were designated separate housing areas for kittens and queens with litters (Cat Ward 2), adult cats (Cat wards 3 and 4), non-infectious injured cats (primarily kept in the "groom room"), cats held for bite quarantine (Cat quarantine) and those with upper respiratory infections (Cat Ward 1).

- In theory, these areas for population segregation should help reduce disease transmission and stress.

Problems

- Current cat housing is too small to meet the minimum behavioral needs of cats, provide humane care or maintain cat health. Cats are unable to stand normally on all four feet, take a single step without stepping in food or litter pan, nor lie down with body extended (see Figure 16).

Figure 16—a cat that could not stretch out to full length due to small cage size

- On the second day of observation, newly arrived cats and kittens were placed in cages in the hallway waiting to move into the kitten ward because this room was already full to capacity when the new arrivals were admitted. This is not an ideal place for staging cats in transition as this is a busy, stressful environment and cats may be exposed to dogs as they walk by.

- The rollers/coasters that the cages are attached to (to allow for easy movement and cleaning beneath) are reported to be corroded and not stable enough to allow for easy moving and "deep cleaning".

- The Plexiglas doors to the cat carrier/security boxes are becoming worn and cloudy.

- Cats even when inside their carriers have no covering or opaque shelter to completely hide behind or block visualization of people or other cats.

- Even though a cat carrier/hiding box was provided, the manner in which these were employed by the open end facing toward the front of the cage with a clear plexiglass door rendered these ineffective at providing a hiding space. Published research has demonstrated that hiding is correlated with reduction of stress in laboratory cats, and that hiding may therefore be an important mechanism for cats to cope with uncontrollable and unpredictable captive environments. (Carlstead 1993). The cramped floor space in most of the cages makes it difficult to provide adequate hiding areas (see Figure 3).

Figure 17

- In figure 17, a cat could not perch on top of the cat carrier/security box to eat. The cat carrier/security box has a clear Plexiglas front shield in place that is facing toward the front of the cage, which may limit its efficacy as a hiding area.

- The music playing in the cat rooms was not tuned correctly and not soothing or calming to the cats. Employees were observed to be playing their own music (individual radios) which again was not soothing or calming and was too loud.

Recommendations

Short Term:

1. Hang easily cleaned/sanitized cloth coverings (surgery towels, cut material/fabric, etc.) for the front of kennels particularly for feral cats, scared cats and queens with kittens. Consider clipping these directly to the front of the kennel.

2. Reallocate wards as needed in response to seasonal demands so that cats do not need to be held in hallways. See population management section for further details on cat holding numbers/housing recommendations.

3. Change overhead music to more calming/soothing radio station (classical, NPR, easy listening, etc.) Limit or eliminate use of personal radios.

Medium Term:

4. Change the rollers/coasters on the cat housing units to more corrosive resistant wheels to allow for better movement of kennels to allow for easier deep cleaning.

5. Fill space between the cat housing units to decrease dust accumulation, noise and loose cat hiding possibilities.

6. Double the size of ~ 90 cages into 45 by connecting two cages together via a porthole. Designate 3 wards for adult cats, one for kittens, and move feline isolation to the reptile room. Reptiles can be moved to current cat quarantine and quarantine cats housed in clearly marked cages within a designated bank in one of the adult cat rooms. See population management section for further details on cat holding numbers.

Replace worn Plexiglas doors for the cat carriers/security boxes. Keep a few extras on hand to replace worn doors in the future as needed.

Additional resources

Quiet-Time Cage Cover, Shor-Line http://www.shor-line.com/index.php/products/productlist/31/12

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CLEANING AND DISINFECTION

Careful and effective sanitation by well-trained employees is mandatory for control of infectious disease and reducing the dose of infectious agents in the environment. A clean shelter encourages transfer partners to visit to view and select animals for transfer as well as protecting animals from illness. Time and money spent on training and supplies for an effective cleaning program will result in decreased costs due to disease. However, if incorrectly performed, cleaning can be ineffective or may actually serve to spread disease. Providing staff with sufficient written guidance, training and supplies, and ensuring that the facility is arranged for easy and effective disinfection, serve as the foundation of a sound program for shelter sanitation. Observations are included in the assessment of strengths and problems below.

Strengths

- The staff displayed a reasonable awareness of the importance of cleaning and biosecurity in relation to cleaning the cats in each room.
- The overall impression of the cat kennel housing was pleasant displaying clean appearance without any unacceptable odor.
- The staff showed excellent use of glove changing or antibacterial hand sanitizer in between cleaning each cage and handling each animal.
- Some staff members utilized a good order for cage cleaning working in a column of cages beginning with the top cage and following with middle and ending with the bottom cage then moving on to the next column from top to bottom again.
- Each rag used to wipe down the interior of the cat kennel was used only once and then put into the “dirty” bucket to avoid contamination of the wash water. Multiple rags were used on kennels that required more attention.

- Litter boxes were emptied daily and each cat was given fresh litter in the same stainless steel litter box. The boxes were completely changed out as needed.

- When the hydrofoamer was filled to an adequate level an effective dilution of bleach for disinfecting clean, non-porous surfaces was achieved.

- Storage in the cat housing areas is typically kept tidy, organized and clean/dust-free.

- Each cat ward had dedicated cleaning and disinfecting equipment that was labeled and color coded to ensure these items remained in their designated areas.

Problems

- Cleaning is interrupted throughout the day causing a delay in complete cleaning and increasing time cats need to be contained in carriers/security boxes. The overall cleaning process takes a long time for each kennel.

- Some cats were observed to be in their cat carriers/security boxes for several hours during cleaning especially when kennel staff is frequently called away to help with other duties.

- Written protocols for cleaning and disinfection are outdated and contain some instructions for less than ideal practices.

- For example, the protocol for cleaning and disinfection of cat housing in the "Standard Operating Procedure #101" document calls for cleaning five cages in a row at the same time. By following steps 1, 2, and 3 in this protocol, each staff member would have to use 15 pairs of gloves (30 gloves total) to clean and disinfect five cages or three pairs of gloves (six gloves) per cage as opposed to using a single pair of gloves (two gloves total) per cage if each cage were cleaned individually.

Figure 18

- In figure 18, a bank of five cages in a row all in the process of being cleaned at the same time. This approach increases the risk of cross contamination and promotes use of an excessive number of gloves per the current written protocol.

- Cleaning and disinfecting procedures observed were inconsistent and varied between different staff members.
- Some staff cleaned and disinfected one cage at a time moving in columns starting with the top cage, cleaning the middle next and finally the bottom cage then moving to the next column while others worked in rows cleaning five cages at the same time.
- The plastic material the cages are made of has the potential to become worn (chewed, scratched, etc.) creating defects and making them difficult to effectively clean and disinfect. This will only worsen with increasing age and wear.
- Thorough cleaning and disinfection of cages was not performed consistently in cages between occupants.
- Dirty, unoccupied cages were not cleaned promptly and it was unclear whether or not thorough disinfection of the cages in between cats is taking place, especially in very crowded rooms.
- Some empty cages that were not designated as clean were not observed to be cleaned and disinfected before a new occupant was placed in the cage.
- The round red or green colored cage tags were not used consistently on empty cages making it unclear if an empty cage was clean or dirty.
- Bleach and detergent dilution in hand buckets is not standard between staff members.
- Some kennel technicians mixed bleach themselves in the ward, others went to the dish room to get bleach from the dispenser that automatically dilutes the bleach.
- Hosing the floor at the end of the cleaning process is too vigorous and causes stress to the cats (especially those on the bottom row of kennels) as well as increasing the rate of corrosion of the rollers/coasters on the bottom of the housing units.
- When the hydrofoamer is not filled properly an ineffective dilution of bleach results which leads to inadequate disinfection of surfaces. During testing, the consultants discovered that when the hydrofoamer was filled less than ¼ full with bleach the resulting solution coming out of the nozzle was effectively pure water.
- Bleach bottles used for the automatic dilution sink in the dishwashing room were not checked regularly and an ineffective dilution of disinfecting rinse resulted.
- The bleach bottle in the automatic dispenser was empty upon several occasions when the consultants checked fluid levels (see Figures 18 & 19)


Figures 19 & 20

- In figures 19 & 20, the bleach bottle connected to the automatic dispenser was empty on more than one occasion, resulting in an excessively dilute bleach solution in the rinse sink.
- Staff members do not wear protective clothing during cleaning or change clothes after cleaning.
- Cat carriers/security boxes and shelves are not completely submerged in bleach solution and are not in contact with bleach solution for at least ten minutes of contact time.
- Incomplete disinfection is ineffective in inactivating pathogens and increases the risk of disease transmission (see Figure 21).

Figure 21

- In figure 21, the cat carriers in the farthest sink are soaking in diluted bleach but are not completely submerged. To effectively disinfect in this sink, the boxes would need to be turned after soaking for ten minutes and allowed to sit for another ten minutes. This is a very inefficient approach to disinfecting the cat carriers.
- Following cleaning/disinfection of carriers, the carriers are placed on the floor to air dry. This increases the risk of contamination.

Recommendations

Short term:

1. Review cleaning and disinfection SOPs, including sequence of cleaning and disinfection and appropriate mixing and contact time for disinfectant. Retrain staff to assure proper procedures are consistently used. Update written protocols to reflect the current correct method of cleaning (each individual cage as a whole instead of "bank by bank" system).

2. Clean and disinfect empty cages and consistently use established procedures for designating clean and dirty cages to ensure a cage has been thoroughly cleaned and disinfected before a new occupant is placed in the cage.

3. Separate areas should be established for cleaning dishes versus litter pans and all staff and volunteers should be trained in the procedures for using these areas. The process should include scrubbing with a detergent to remove debris, followed by rinsing, then soaking in a disinfectant such as diluted bleach or Trifectant for the proper contact time, followed by a second rinsing with clean water and drying. (See Medium term recommendations below for more information about Trifectant.)

4. Assign sufficient staff time to allow compliance with written cleaning and disinfection SOPs.

5. Change protocol to "spot cleaning" kennels instead of full cleaning of kennels to decrease time dedicated to cleaning and decrease animal stress by allowing scent to remain in kennel however full cleaning of the kennel should be done as needed. See additional resources for more information on spot cleaning in the article by Nancy Lawson and Kate Pullen, below.

6. Ensure that staff consistently measure amounts of water and disinfectant when preparing disinfectant solutions.

7. Ensure that measuring devices are consistently available; consider tying these adjacent to disinfectant measuring stations. Mark fill lines on buckets and bottles. Alternatively have all staff fill the bleach hand bucket from the automatic dilution mechanism in the kitchen to reduce risk of improper dilution, decrease bleach waste and have cleaning materials readily available in the room.

8. When staff is using the dispensing unit in the dish room, ensure that staff is monitoring the bleach level to make sure that there is bleach in the bottle and is being added to the solution as it is dispensed.

9. Consider getting and using test strips to routinely monitor bleach concentration from the dispensing units to ensure correct dilution is achieved. Prepare and post detailed instructions for amounts of disinfectant stock solutions to add to containers of various sizes (e.g., one quart spray bottles, two or four gallon buckets.)

10. Ensure that staff wears protective clothing during cleaning such as coveralls and boots, or change clothes after cleaning and following exposure to cats with infectious diseases.

11. Use only disinfectants selected on a planned basis. Do not accept or use donated disinfectants as these may be ineffective and/or contain compounds fatal to cats.

12. Do not hose in between cages. Consider a duster or other similar structure to remove stray fur, litter and dust. Ultimately, repair these areas to decrease accumulation of stray material. The cage banks can be moved out periodically for deep cleaning.

13. Do not use high pressure sprayers on the floors in front of cat cages. Gently sweep and mop floors with Trifectant. Use separate mops and buckets for each ward.

14. Obtain containers large and deep enough to completely submerge cat carriers in for disinfection.

15. Stack cleaned/disinfected carriers on a rack to air dry, they might dry more quickly and there would be less risk of contamination of the cleaned carriers.

Medium term:

16. Restructure staff cleaning time or schedule to decrease the number of interruptions during cleaning and to decrease the time needed to clean the rooms. The goal should be to clean a room completely within 2 hours.

17. The plastic cage material is subject to scratching and collection of organic matter that cannot be readily removed from scratched surfaces. Bleach is not ideal under these conditions because it is poor at penetrating surfaces and is inactivated by organic matter. Consider alternative products such as Trifectant or Activated Hydrogen Peroxide for feline cage cleaning. (These products are discussed in more detail below.)

18. Wysiwash solution has the same disadvantages as bleach with regard to penetration and organic matter, but may decrease fumes associated with bleach and alleviate concerns of wasting diluted bleach solution. See additional resources for more information about and where to obtain Wysiwash.

19. Consider using a different disinfectant such as Trifectant®. Trifectant (potassium perxoxymonosulfate) has the advantage that it has some activity on organic matter unlike bleach and it has some residual effect. It is effective against both feline calicivirus and feline panleukopenia/parvovirus. Trifectant is available in tablet form for ease of mixing; or as a powder which can be mixed by trained staff. Trifectant must be discarded every 7 days. Trifectant is available at many sources online. (Type "Trifectant" into Google). Bleach, though effective, is compromised by the presence of organic matter such as litter, saliva and body grease and the current housing units are constructed of a material that make complete removal of organic debris challenging.

20. Another options is Accelerated Hydrogen Peroxide (AHP). AHP has the advantage of acting as both a cleanser and disinfectant. Unless a surface is exceptionally soiled a separate

cleaning step is not necessary. In addition, AHP only requires one minute of contact time to inactivate common shelter pathogens. AHP is available premixed or as a concentrate.

Long term:

21. Consider commercial dishwasher system for the security boxes to increase speed of cleaning and drying, help free up valuable staff or volunteer time, increase hygiene and decrease amount of space needed for drying the boxes.

Resources

Cleaning and Disinfection topics in Animal Sheltering Magazine July 2003, May 2005, July 2007 (www.animalsheltering.org)

Anivac Accelerated Hydrogen Peroxide http://anivacfirst.com/accel-tb-rtu-usa.html

ASPCA. Standard operating procedures: creating, implementing, and revising SOPs. www.aspca.org/site/PageServer?pagename=aspcaprosmt_sops

Infectious Disease Control in Animal Shelters: Chapter 4

Kate Hurley. Saving Lives through Sanitation. www.sheltermedicine.com/documents/just%20sanitation%20for%20web.doc

Kate Hurley. Saving Lives through Sanitation. PetSmart Charities webinar. February 2007. petsmartcharities.webex.com/mw0304l/mywebex/default.do?siteurl=petsmartcharities&service=7

Kate Hurley. Minimizing the effects of common culprits in disease transmission. Animal Sheltering Magazine. July/Aug 2007 issue www.sheltermedicine.com/documents/shelter_medicine_jul_aug07.pdf

Maddie's Infectious Disease Control Manual

Petsmart Webinar: General Animal Care, "Sanitation", 2/2007

Nancy Lawson and Kate Pullen. Spot cleaning a cat cage. Animal Sheltering Magazine. May/June 2005 issue www.animalsheltering.org/resource_library/magazine_articles/may_jun_2005/spot_cleaning_a_cat_cage.html

UC Davis Koret Shelter Medicine Program. Information sheet on cleaning and disinfection in shelters. www.sheltermedicine.com/portal/is_cleaning.shtml

Vetoquinol website http://www.vetoquinolusa.com/pages/pro_trifect.html

Wysiwash http://www.wysiwash.com/

NUTRITION

Sufficient wholesome food and clean water is a necessity for humane animal care. Insufficient nutritional intake, whether because food or water is not available or because the circumstances are such that animals do not or cannot eat (e.g. due to stress, feces or dirt in food or water dishes, competition for food, spoiled food, inaccessible bowls or simply an unpalatable diet) will compromise animals' ability to respond to vaccines and ward off disease, as well as being a direct cause of compromised welfare.

Because of the small size of cages, food and water were commonly heavily soiled with litter and feces and were often tipped over and empty. Cats are fastidious animals and may allow themselves to be under-nourished and dehydrated rather than take in soiled food and water. Until larger cages are provided, it is especially important to check each cat several times daily to ensure adequate clean food and water. Cats, and especially kittens, should have dry food available at all times unless on a weight reduction program. Monitoring food intake is a simple and effective means to monitor stress and risk for illness.

Strengths

- Overall staff members are concerned that animals get enough to eat and try to provide an ample amount.
- The base purchased diet is of good quality and is available as an adult and kitten formulation.
- The kittens and queens are given an adequate amount of canned food.
- Staff members are aware of different age eating abilities and will offer KMR as needed to very young kittens. In addition, there is good identification of those kittens not thriving or eating.

Problems

- There is currently no monitoring or recording of amount of food eaten. This is of particular concern for multiple cats or kittens housed in a single cage or cats that arrive in a thin body condition or compromised state
- Some food storage containers appeared to have donated dry food mixed in with the regular diet.
- Open food was not dated.
- In most cases, cats are being significantly overfed and there is considerable food wasted/thrown away daily.

- Some cats, particularly the young or adolescent animals, appear to be unusually hungry in the morning at feeding time as demonstrated by increased activity, agitated behavior and ravenous consumption of food when provided.
- Providing KMR in a bowl for young kittens is probably an ineffective means of offering nutrition.
- Some kennel staff placed food bowls on top of the cat carrier in cages to provide the cage occupants with more floor space. In some cases for small kittens there is concern that this placement may mean the food is inaccessible to some of the kittens.
- The water bowls used appear to be too small for some cats or for cages in which there are multiple cats/kittens housed in the cage. Several cages had empty water bowls for at least 1.5 hours during the day and in the morning.

Recommendations

Short term:

1. Immediately change handling of kittens requiring special feeding. (KMR in a bowl is not acceptable for kittens that are not able to eat on their own.) Kittens that are not eating on their own require immediate release to foster care or transfer to a rescue partner that is capable of caring for these neonates or euthanasia if adequate care cannot be provided.
2. Observe kittens after providing food and water to ensure they can access the bowls.
3. Begin monitoring and recording intake and output daily, this could be done by providing cage card for all cages. See monitoring health and behavior section for further information.
4. Flag underweight cats for closer daily monitoring and ensure weight is recorded at intake to facilitate monitoring.
5. Empty out/use all food in storage containers before refilling to ensure food is fresh and fresh food is not mixed with old.
6. Date food with the date it is opened. If the original container/bag provides a “use by” date, include this as well.
7. Feed consistent diet.
8. Do not feed donated dry food to in shelter animals. Donated dry food can be given to volunteers, staff, fosters, feral cat colonies or low-income pet owners.
9. Get ¼ cup measuring cups for all food storage containers in all cat wards and use these to consistently measure food given.

10. Assign staff or volunteers to regularly check food and water at least every 4 hours in cages with kittens or adolescent cats and provide more food if needed.

11. Consider using smaller disposable food bowls for feeding to reduce the amount of food thrown away and wasted daily.

12. Post a feeding schedule in each ward.

13. Consider having volunteers check water bowls several times during the day and refill as needed.

Medium Term:

14. Purchase some larger water bowls for use in cages with cats that need them such as cages with a queen with her litter or multiple kittens.

15. If an adoption program is established, consider participating in a free or reduced cost food program such as Hill's or Purina.

Behavior Assessment

CANINE AND FELINE

Behavior evaluation in shelters occurs through intake questionnaires and interviews, behavior assessment tests, and observations of the animals in the shelter environment. Unfortunately research about behavior assessment in shelters is sparse and there is no intake and assessment protocol which has been demonstrated to be highly predictive of behavior problems in the new home. Nevertheless, shelters should obtain behavioral information about the dogs and cats in their care, as this information can help to guide placement, training, and euthanasia decisions.

Strengths

- The majority of cats in the shelter appeared highly adoptable
- Formal behavioral evaluations are conducted on many of the dogs
  - Staff reported that dogs are formally behavior evaluated whenever a transfer partner requests it, if staff members feel a long term dog will have a better chance of getting transferred with more information available, and when staff hours allow it
- The behavior evaluator is professional, knowledgeable, and demonstrates thoughtful decision-making

- A designated room, identified with a sign, is used for behavior evaluation of dogs
- Continuing education opportunities are made available for the behavior evaluators

Problems

- Behavior evaluations are not conducted in a safe or efficient manner
  - The behavior assessments are performed by a single staff member, without any assistance, resulting in significant safety risk for the evaluator when handling aggressive dogs
  - The lack of an assistant to observe and write down findings results in assessments being more time consuming and less reliable than necessary
  - The room utilized for behavior evaluations is too small for safe evaluation of large dogs
  - The room utilized for behavior evaluation is not consistently cleaned and disinfected in between animals
  - Behavior evaluation findings are not utilized to promote transfer/adoption of dogs, rather solely to select dogs for transfer vs. euthanasia.
- Due to limited personnel being trained and available for behavior evaluations the behavioral evaluations are not performed at a consistent time during the pet's shelter stay
  - In some cases, the inability to evaluate dogs prior to the end of their holding period results in prolonged lengths of stay and its associated negative consequences
- Preventive measures for working with aggressive dogs are inadequate
  - Several aggressive dogs were housed in the general population without any clear signage on cages, and without locks on the cage doors, this puts staff and volunteers at risk of inadvertently interacting with dogs that may be a risk to their and others' safety.
  - The majority of staff is not trained in how to handle these animals. Training animal care attendants and other staff in defensive dog handling, dog bite prevention and breaking up fights, is essential.
  - Safety equipment for distracting aggressive dogs or breaking up fights is not readily available anywhere in the shelter.

- There is no formal process for staff or volunteers to report behavioral concerns.

- Limited information is collected about an owner surrendered animal's behavior history upon its arrival at the shelter

  - Because behavior assessment tests have not been validated, it is important to obtain as much behavioral information about the pet as possible in order to aid placement and euthanasia decisions. While negative information (lack of problems) reported by relinquishing owners should be considered suspect, positive information (report of behavior problems) is likely to be accurate.

- There is no formal protocol for the identification and evaluation of feral cats (vs. frightened lost pets) which may affect whether an animal is placed on a transfer list versus euthanized.

Recommendations

1. Develop standards and protocols for current behavior practices at MADACC. Standardizing practices and keeping a record of behavioral information about shelter animals is the first step in being able to provide useful behavioral information to potential transfer partners, and determining if the current protocol is successful.

2. Have owners surrendering pets complete a full behavioral profile of the animal. A good intake questionnaire includes questions regarding the most common canine behavior problems, as well as family characteristics and environmental factors which might contribute to a behavior problem.

   a. Samples of behavioral intake forms are available online at: http://www.sheltermedicine.vet.cornell.edu/behavior/assessment/

3. Utilize the behavior fields in Chameleon and create a 'behavior report' for every animal.

   a. Record any pertinent intake information and results of the various behavior evaluations.

   b. Train all staff regarding how to observe and record behavior as objectively as possible, as well as the importance of recording all significant interactions in Chameleon.

4. Create a 'behavior alert' protocol.

a. Employees and volunteers who note a problem behavior such as aggression or severe kennel stress must alert the population manager, this can be done by providing clipboards or folders in each ward where relevant information can be recorded.

b. This protocol will allow MADACC to intervene early in the development of a problem and take appropriate action

5. Identify a qualified staff member to assist the behavior evaluator when performing behavior evaluations

    a. It is recommended to have two people conducting behavior evaluations in order to ensure safety of the evaluator, identify behaviors that cannot be seen by the person handling the animal, and to record test responses without having to stop the assessment

    b. A second person can also be responsible for cleaning and disinfecting the designated area in between animals (see cleaning and disinfection section for appropriate cleaning protocols)

    c. Ensure regular continuing education opportunities and periodic skill assessments for trained evaluators

6. Identify a larger space in which to conduct behavior evaluations.

    a. The room must be quiet, have a computer, and space to store testing equipment. The food storage room may be one suitable area.

7. Perform behavior evaluations in a timely manner.

    a. Behavioral evaluations should preferably happen prior to the end of the holding period to prevent prolonged lengths of stay due to pending assessments

    b. Ensure that all animals for which a significant investment is made (financial, temporal, emotional) are at least partially evaluated prior to making such an investment

8. Ensure staff and volunteer safety through training and availability of safety equipment

    a. Institute a formal animal handling and safety training program for staff and volunteers

b. Maintain safety equipment such as citronella sprays or air horns, in each dog kennel, as well as the behavior evaluation room, and ensure staff and volunteers receive regular training on the procedures to follow in the event of a dog bite or fight as well as the use of the available equipment.

9. Consider adjustments to the current behavior evaluation. While no formal behavior evaluation has been proven to accurately predict behavior in the future, they do provide useful information about the animal and help identify their needs while in the shelter's care. Some test components have been shown to correlate with increased likelihood of aggression in the future.

    a. Consider choosing one test, such as SAFER® or Assess-a-Pet® and follow the testing procedures, in order, as described in the test materials. These tests are designed to make behavior assessments as safe as possible and each step builds upon the last. Changing the order of test components may compromise the safety of the evaluator and the accuracy of the evaluation.

    b. Some suggested changes to the current evaluation include:

        i. Conducting "Sociability" prior to "Affection."

        ii. Removing "Pinch Test" from the evaluation. This assesses similar characteristics as the "Physical Exam" step and many dogs may have a negative association with having their feet handled in this manner which may alter the behavioral response and interpretation of this component.

        iii. Be sure a variety of toys are available for the "Toy" test, as many dogs will be interested in one type of toy (especially a "squeaky toy") and not others. In addition to assessing the level of resource guarding, this test should also be used to assess play style and level of arousal (and subsequent calming after arousal).

        iv. Consider addition of a dog-to-dog interaction test, particularly for bully breeds. Dogs should be tested with a minimum of two dogs, one of each sex. The dog being introduced to the test dog should have already been evaluated as being friendly to other dogs.

10. Establish a written protocol for the evaluation of cats to ensure that there is consistency between staff members that perform these duties.

a. In particular, attention should be paid to methods of distinguishing feral cats from fearful, lost pets.

Additional resources

Behavior programs in shelters
Evaluation of Your Shelter: Are You Ready to Implement a Behavior Program? Humane Society University. Information available at www.humanesocietyu.org/workshops_and_classes/evaluating_your_shelter.html

Behavioral assessment tests
Emily Weiss' SAFER test emilyweiss.com/safer.html

Sue Sternberg's Assess-A-Pet. www.suesternberg.com

ASPCA Meet Your Match Canine-ality program

ASPCA Meet-Your-Match Feline-ality program

Dowling JM. Putting your Behavior Evaluation Program to the Test, Part I: Why Every Shelter Should have a Behavior Evaluation Program. Animal Sheltering, September-October 2003;14-25.

Dowling JM. Assess with Success Part Two: Evaluating Animals for Adoption. Animal Sheltering November-December 2003:15-26.

Communication, body language and defensive animal handling
Canine Body Postures and Evaluating Behavioral Health. Animal Care Technologies www.4act.com/canine.htm

The Language of Dogs- Understanding Canine Body Language DVD Set. Sarah Kalnajs, www.dogwise.com

Yowser! A Guide to Defensive Dog Handling Techniques. Sue Sternberg, www.suesternberg.com

Canine Surrender Profile. Maddie's Shelter Medicine Program at Cornell. Available online at: www.sheltermedicine.vet.cornell.edu/behavior/assessment/.

Feline Surrender Profile. Maddie's Shelter Medicine Program at Cornell. Available online at: www.sheltermedicine.vet.cornell.edu/behavior/assessment/.

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Welfare, Stress Reduction, and Enrichment

CANINE

Stress reduction and enrichment programs allow the shelter to meet welfare needs of the dogs in their care, and serve as a model of good pet care for the community. The limited availability of such programs at MADACC results in stress related behavior problems in dogs, potentially increases susceptibility to infectious diseases, increases the stress level of employees, and deters volunteers from spending time at the shelter.

Strengths

- All dogs are provided with a raised bed, a blanket and a toy
- A program is in place allowing volunteers to walk dogs that are considered safe
- Staff and volunteers are very motivated to improve the welfare of dogs at the shelter
- Volunteers were also observed providing treats and initiate positive human interactions with the dogs not approved for walks

Problems

- A number of dogs appeared stressed particularly during cleaning.
- Significant causes of stress at MADACC include: lack of dry resting area since both beds and floors were often wet post-cleaning, being sprayed with water during cleaning, inadequate access to food, limited positive social interaction with people, noise, proximity to other stressed dogs, and living (sleeping, eating, resting) on surfaces contaminated with feces.
- Noise levels due to barking were often unacceptably high causing stress in dogs and staff.
- Dogs are not approved for walking in a consistent manner.
    - Not all dogs past their stray hold had been evaluated for dog walking.

Recommendations

1. **Increase efforts to transfer dogs out of MADACC as quickly as possible**; this is a key method by which to dramatically improve their welfare.

2. **Designate a volunteer coordinator in order to expand and improve volunteer programs for behavior/enrichment**. This person may also serve as the rescue/foster care coordinator. This role should be filled by someone who is comfortable spending time in the shelter as well as coordinating and will work in conjunction with the behavior coordinator. This employee serves several functions. Bringing volunteers to the shelter and improving foster and rescue programs increases live release rates and improves public perception of the shelter by improving the welfare of animals and developing programs which meet urgent needs in the shelter, including volunteer programs to provide enrichment for shelter animals, adoption counseling, and dog training.

3. **Combine current single runs into double runs separated by guillotine doors** in order to permit cleaning without spraying neighboring dogs and provide adequate separation of resting, feeding and elimination areas. See Canine Housing Section for more details.

4. **Reduce noise in the kennels**

    a. Reward dogs for calm, quiet behavior by putting food buckets outside their kennels, and tossing them a few pieces of kibble when they are quiet.

    b. If dogs are noted to bark excessively in reaction to foot traffic, house these dogs at the end of runs where traffic is minimized. House aggressive dogs in a separate ward as described in the canine housing section.

5. **Train staff to recognize the behavioral manifestations and body language of stress, aggression and fear.**

    a. This will ensure quick identification, evaluation, and treatment of these problems.

6. **Re-evaluate canine behavioral health at least every 2 weeks (with a long-term goal of every week).**

    a. This allows the shelter to determine which dogs need further behavioral intervention such as an individualized training plan, transfer to a facility with more resources, etc.

7. **Provide dogs with enrichment**. This can be done using the "Simple Shelter Enrichment: Appendix E.

This portion of the recommendations should be implemented once population management and other basic health programs have been established and a volunteer program is in place. An excellent outline for a behavioral health plan for pets is available at www.openpaw.org. The

enrichment program should be instituted in a stepwise manner, starting with factors which are likely to improve welfare and are easiest to institute.

a. Remove dogs that have been approved for walking after their stray hold from their kennels twice daily and walk them briefly outdoors, to allow them to eliminate. This maintains dog's housetraining habits and makes an easier task of keep the kennels clean.

b. Provide dogs with positive human interaction for a minimum of 20 minutes per day. This may include training, playing fetch, or walking. Dogs are highly motivated to gain human social interaction.

c. Provide dogs with physical exercise *and* 'quiet time' away from the kennels. Aerobic exercise can reduce anxiety and stress. In addition, 'quiet time', where the dogs are allowed to sit with a person and RELAX, may be beneficial in reducing stress, especially with fearful and anxious dogs.

d. Provide dogs with feeding enrichment, such as food stuffed Kong™ (www.kong.com) toys or Kibble Nibble™ (www.premier.com) dog toys filled with dog food, and buckets outside their cage with dog food and treats in them so that visitors can provide dogs with positive social interaction by giving them treats when they are well-behaved (sitting or standing quietly, not barking or jumping).

Additional resources

Open Paw Volunteer Program www.openpaw.org

www.volunteerforanimals.org

Humane Society University volunteer manager certification course (www.hsuonline.org)

References

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FELINE

Stress reduction and enrichment programs allow the shelter to meet welfare needs of the cats in their care. As with dogs, inadequate housing is the biggest challenge when it comes to the welfare for the cats at MADACC.

Strengths

- All cats are provided with a hiding box, a blanket and a toy.
  - Stressed cats choose to hide or rest on an elevated perch or enclosed area. Providing cats with a mechanism whereby they can feel safe and secure reduces their stress and improves their welfare.
  - Soft substrates to rest on have been shown to improve welfare in two different studies (Crouse et al 1995 and Hawthorne et al 1995).
- A program is in place allowing volunteers to socialize cats outside of their cage
  - Staff and volunteers are very motivated to improve the welfare of cats at the shelter
- Cats are housed separate from dogs and other species

Problems

- Several of the cats observed at MADACC exhibited a high level of stress throughout the day
  - Signs of severe stress were observed in some cats in all cat wards. Behavioral signs of stress which were observed during the consultation include: dilated pupils,

tense/withdrawn body posture, fear, aggression, and hiding in the litter box or feral den.

- Significant sources of stress include: absence of social interaction (with humans); cages of insufficient size to permit virtually any normal behavior such as walking, jumping or stretching; lack of separation of food/resting area/elimination area; lack of an appropriate scratching surface; and delayed recognition and treatment of disease.
    - Some cats were housed in the hallway to allow for better monitoring, including a queen with a litter of neonatal kittens. Constant exposure to staff and dogs walking by is a source of significant stress to these cats.
- There was no system to monitor feline appetite, water intake, eliminations or behavior.
    - Cats frequently become anorexic when stressed leading to compromises in their overall health and welfare. Monitoring normal functions including food intake and stress levels on a daily or weekly basis is important for maintaining feline health.
- Cats are approved for socialization on an inconsistent and apparently random basis.

Recommendations

1. **Combine current single cages into double housing units by cutting holes between adjacent cages.** This will allow for adequate space for cats to stretch and play, as well as provide separation of resting, feeding and elimination areas.

2. **Hire a rescue/volunteer coordinator in order to expand and improve volunteer programs for behavior/enrichment programs.** See comments in dog section above.

3. **Train staff regarding the behavioral manifestations and body language of stress, aggression and fear.**

    a. Being able to recognize stress and early signs of aggression and fear are important steps in ensuring that these problems are being quickly identified, evaluated, and treated.

    b. **Continue to expand the cat enrichment program**. This can be done using the "Simple Shelter Enrichment: Appendix F.

This portion of the recommendations should occur once a population management program and volunteer program are in place. An excellent outline for a behavioral health plan for pets is

available at www.openpaw.org. The enrichment program should be instituted in a stepwise manner, starting with factors which are easiest to institute and most likely to improve welfare.

4. Once cats over 5 months of age have passed their stray hold period (primarily in order to allow vaccines to take effect) and screened for health, remove them from their enclosures once daily and take them to a location where they can run, play, scratch a scratching post (use disposable surfaces, such as cardboard scratchers, or scratching surfaces that you can hang against a wall or doorknob. 'Quiet time', where the cats are allowed to sit with a person and RELAX, may be beneficial in reducing stress, especially with fearful and anxious cats. Sitting with a cat and talking/reading to them (but not otherwise interacting directly with them) may decrease their fear and anxiety related to living in a stressful place.

5. Because of increased infectious disease risk and unreliable vaccine protection, kittens under 5 months of age should be socialized in their kennel or in areas that can be carefully disinfected between each use. The best method of ensuring kitten welfare is to move these youngsters very rapidly through the shelter.

6. Provide cats with positive human interaction for a minimum of 20 minutes per day. This may include playing, petting, grooming, talking to the cat. Most cats are motivated to gain human social interaction; providing it reduces their stress.

7. Provide every cat with toys; these toys can be disinfected and reused. Cat toys should be replaced a minimum of once weekly. Cats may lose interest in toys over time, replacing them with new toys increases their novelty.

8. Re-evaluate feline behavioral health every week.

9. Because cat space is limited, cats must be re-evaluated frequently to ensure that the cats on the transfer list are highly adoptable and include a diverse selection of colors, personalities, ages, etc.

Resources:

Additional resources

Open Paw Volunteer Program www.openpaw.org

www.volunteerforanimals.org

Humane Society University volunteer manager certification course (www.hsuonline.org)

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Simple Shelter Enrichment for Cats. Appendix F.

Simple Shelter Enrichment for Dogs. Appendix E.

Euthanasia

FACILITIES AND STAFFING

Euthanasia, by its very name, means a "good death." The goal of euthanasia policies and procedures in the shelter should be to provide the best possible experience for the animal being euthanized.

The best practice for euthanasia of cats and dogs is known as EBI—Euthanasia by Injection of sodium pentobarbital. Euthanasia encompasses more than the injection of the euthanasia drug. It begins with staff training and oversight and involves all stages of the animal's experience: identification for euthanasia, room environment, handling and restraint, sedation, administration of the euthanasia drug, and confirmation of death.

The shelter has a large single-purpose room for euthanasia. A crematory with two cremation units is attached directly to one end of the room opposite the entry door. Vet techs are primarily responsible for performing euthanasia by injection. One vet tech is assigned euthanasia duty each day and the kennel attendant brings in the dogs and cats to the euthanasia room from the ward they are assigned to that day. The kennel attendant retrieves the dogs and cats from the kennels/wards and restrains them during the procedure. Dogs are brought in one at a time on leash or control pole. Cats are brought in their cat carriers after dogs are done.

Strengths

- Euthanasia staff was observed to be calm, gentle and compassionate in dealing with the animals.
- Kennel attendants took "ownership" of the animals in their care and appeared to feel personally responsible for ensuring a comfortable, minimally stressful experience for the animals.
- Vet tech performing euthanasia used good technique.
- Vet techs and Kennel attendants worked together to ensure proper identification of animals prior to euthanasia and minimize errors.
- All animals were scanned for a microchip at the time of euthanasia

Problems

- Frequent interruptions and entry into the euthanasia room interfered with the euthanasia process and compromised staff and animal safety.
- Sign on euthanasia room to alert staff to euthanasia in progress was inconsistently used (see Figure 22)

Figure 22

- Sign currently used on euthanasia room door was occasionally left in place when euthanasia was not in process.

- Staff would knock and open the door, even during the act of euthanasia, and the technician would turn attention to the interruption.
- Upon a few occasions, staff entering the euthanasia room did not knock prior to entering the room.
- The euthanasia room is used for other purposes besides euthanasia. Animals under treatment or held for other reasons are reportedly routinely housed in the euthanasia room and can view euthanasia.
- Staff reports that occasionally animals that are suspected of being exposed to parvo/panleuk are housed in the euthanasia room for monitoring.
- Housing of animals for any reason is an inappropriate use of the euthanasia room. Animals housed in the room are exposed to continual flow of animals with severe infectious conditions including respiratory disease and parvo. Animals housed in this room also view euthanasia. While the impact of viewing the euthanasia of other animals is unknown, having live animals observe euthanasia has been shown to increase staff stress (Rogelberg 2007).
- A significant amount of space in the euthanasia room is used for storage.
- During the visit, consultants observed multiple reptiles and chelonians moved into this room at the same time euthanasia was being performed then these reptiles remained housed in the euthanasia room.
- Frequently an animal's weight had to be estimated as no weight was recorded at intake, this was especially true for cats.
- Currently the door to the kennel in the euthanasia room is occasionally used as a squeeze chute for restraining uncooperative dogs.
- Additionally, the latch on this door appeared to be broken.
- Veterinary technician's time was spent cleaning crematory and euthanasia room prior to and following euthanasia which is an inappropriate use of staff skills and available resources
- Room/environment used for euthanasia is large, noisy, cluttered, and too warm.

Escaped cats could be difficult to capture and could potentially escape to an area where they would be unreachable or unable to be retrieved (see Figure 23).

Figure 23

- In figure 23, broken and hanging ceiling tile in euthanasia room. Although not visible in the picture, this was above an area where a cat could access by climbing objects stacked and stored on the floor beneath this opening in the ceiling.

- Supplies were not within easy reach resulting in inefficient work flow (see Figure 24).

Figure 24

- In figure 24, supplies were stored on top of the safe which was out of easy reach from any work surface the tech used to perform euthanasia.

- The freezer is not a proper work surface for cats.

- Vibrations from the unit when the compressor turns on to maintain internal temperature may startle cats causing unnecessary stress.

- The texture of the exterior surface is difficult to adequately clean and disinfect. (see Figure 25).

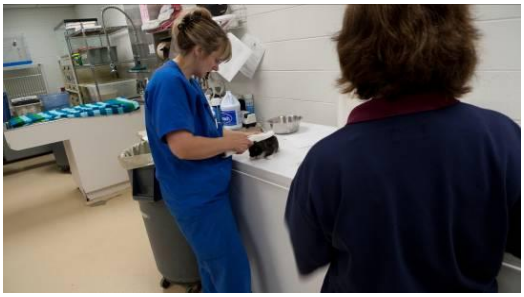

Figure 25

- In figure 25, staff performed feline euthanasia using the top of the freezer as a work surface.
- Working area was not cleaned between animals.
- There is no sink for hand-washing in the euthanasia room.
- The only faucet in the euthanasia room is associated with the wet table, which is cumbersome and messy for hand-washing due to water spray.
- Some programmatic elements for euthanasia technician stress reduction are missing. Compassion fatigue is a common risk for shelter workers and euthanasia technicians. It is incumbent upon the management team at every shelter to take steps to protect the mental health and well-being of their technicians.
- Staff expressed concern for lack of ability to "take a break" when desired/needed and not having enough back up to be able to rotate this job responsibility
- Staff reported that previous requests for "a break from euthanasia duty" had been denied
- No employee assistance program materials (for moral, emotional and psychological support) were posted in the euthanasia room or otherwise readily available
- These factors increase the risk for burn out and compassion fatigue.
- Animal remains were stacked on the floor or on carts in the crematory room overnight because of insufficient refrigerated storage space for remains. A fair amount of accelerated decomposition was observed as a result (see Figure 26)

Figure 26

- In figure 26, bodies left from previous day remained on carts in the euthanasia room overnight.
  - Cremation units were of insufficient size to accommodate all the animals euthanized on either of the two days of observation

- The single freezer unit was already full and had no room for additional animals
- Staff stated that there had been 2 cooler units but that they had broken and only one was replaced with the current freezer unit.

- Even though equipment was available to alleviate strain on workers (i.e., a height-adjustable gurney) consultants observed staff rarely using this equipment and using incorrect lifting techniques for heavy objects which could potentially lead to injuries
- Criteria for selection of animals for euthanasia are unwritten

Recommendations

Short Term:

1. Eliminate/reduce interruptions during euthanasia.
2. Consistently post a "Do Not Knock/Do Not Enter" sign on the door of any room in which euthanasia is being performed at the time of the procedure and remove when euthanasia is not being performed.
3. Schedule euthanasia at a time when other duties are not being performed in the room. Limiting access and interruptions helps reduce stress, distraction, and safety risk (for both animals and staff) during the euthanasia procedure.
4. Consider locking the door during euthanasia to reduce unannounced interruptions
5. Eliminate housing of animals in the euthanasia room
6. Discontinue the use of the freezer unit as a working surface for cat euthanasia. Consistently use the wet table in the room instead
7. Purchase and use a caddy for storage and use of necessary supplies (extra needles, syringes, tourniquet, disinfectant, alcohol, etc.) to keep these supplies within easy reach
8. Remove clutter from euthanasia room and maintain organization in room
9. Discontinue use of euthanasia room for storage, as this creates potential for contamination of supplies held in this room
10. Consistently weigh and record animals' weight at intake and install a scale in the euthanasia room for use when necessary
11. Clean the euthanasia and crematory rooms thoroughly at least daily and any time it has become soiled by vomit, feces or blood

12. Discontinue use of dog run door in euthanasia as a squeeze chute.

13. Provide sufficient equipment and additional training to staff in humane handling and restraint techniques, such as application of muzzles, humane syringe pole use, etc., which would reduce reliance on a squeeze chute for immobilization for drug administration.

14. Establish protocol for using oral sedation in kennel for dogs deemed too dangerous to handle safely.

15. A more secure squeeze chute could eventually be installed for dogs that are too dangerous to handle safely and for which oral sedation techniques were ineffective. Additional training should be provided demonstrating humane use of a squeeze chute before employing this technique. An ideal squeeze chute would not require prolonged traction on the leash to restrain the dog, but would be a small enough enclosure to allow humane immobilization. The press-door or gate of the chute should be sturdy material (metal) and this must be securely fastened to the wall. The press-door should not warp or bend when in use. The height of the press-door should be at about 5 feet to reduce the risk that a dog would be able to easily jump over the top while still allowing most staff the ability to move a control pole over and out of the way. Ideally, such a press-door/squeeze chute would be installed inside of a wall-side kennel to allow the dog to simply remain in the kennel once sedation was given using this device

16. Repair door latch to run in euthanasia room.

17. Reassign duties to optimize use of time and skills of trained staff. Discontinue use of vet techs for cleaning of these areas, assign cleaning to kennel staff, consider assigning other duties to volunteers to free up kennel staff time for cleaning of euthanasia room.

18. Install another cooler/freezer unit for storage of cadavers when the capacity of the cremation units are surpassed. Consider installing a walk-in cooler in the cremation room, which would allow for cool storage of cadavers when freezing could be problematic (i.e. saving a specimen for rabies testing or a cadaver for necropsy for a cruelty investigation).

19. Retrain staff in effective use of personal protective equipment (gurney for moving heavy objects, face mask for use when cleaning the cremation units to avoid inhalation of ash particles, etc.) and techniques for lifting to reduce risk of personal injury.

20. Establish written criteria for selection of animals for euthanasia.

Medium Term:

21. Make euthanasia room a “single-use area” – euthanasia room should be used for euthanasia only. No storage, housing, or any other uses for euthanasia room.

22. Improve security for euthanasia of cats. Securely cover the run in euthanasia room and obtain collapsible/removable table to set up in run for pre-sedation of cats for euthanasia (See Figure 27).

Figure 27

23. In figure 27, run in euthanasia room. Secure a top to this run to provide a secure area to work with fractious cats so that they cannot escape. A collapsible and movable table can provide a work surface within the run.

24. Select and train additional staff in humane euthanasia and rotate/spread out euthanasia duties between more staff members to reduce stress/compassion fatigue. This may also help reduce interruptions during euthanasia.

25. Provide resources for staff experiencing stress due to euthanasia.

26. Identify employee assistance program (EAP) materials and resources to combat compassion fatigue. Post materials in the break area and euthanasia room. Find a specialist in your community where staff can self-refer as needed.

27. Seminars in compassion fatigue are offered at a variety of venues, such as the annual Animal Care Expo, that staff could attend or MADACC could host a workshop at their facility. See additional resources below.

28. Install sink for hand washing in euthanasia room.

Long Term:

29. Improve the security of the entire room by repairing/replacing falling ceiling tiles so that a loose cat can't gain access to the space above the ceiling and to eliminate other such hiding area.

30. Consider dividing current euthanasia room into two smaller rooms, one dedicated to euthanasia only. The other room could then be used for housing, storage or other functions currently taking place in the euthanasia room.

Additional resources

Managing Compassion Fatigue Seminars. American Humane. http://www.americanhumane.org/protecting-animals/conferences-trainings/animal-welfare-trainings/managing-compassion-fatigue.html

Resource Library on Stress and Compassion Fatigue. Animal Sheltering Magazine. http://www.animalsheltering.org/resource_library/search_results.html?librarytopic=stress_and_compassion_fatigue

Figley, Charles and Roop, Robert. Compassion Fatigue in the Animal-Care Community. Available at http://www.hsus.org/press_and_publications/humane_bookshelf/compassion_fatigue.html

Operational Guide for Animal Care and Control Agencies; Euthanasia by Injection. American Humane Association. Available for purchase at www.americanhumane.org.

The HSUS Euthanasia Training Manual. Available for purchase at www.amazon.com and www.animalsheltering.org.

Guidelines for Euthanasia of Nondomestic Animals. American Association of Zoo Veterinarians. 1996.

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PRE-EUTHANASIA HANDLING AND SEDATION

Dogs on the euthanasia list are retrieved from the kennel by the kennel attendant and brought into the euthanasia room while the euthanasia technician reviews the pull sheet and animals' paper records. Dogs are brought into the euthanasia room one at a time, are identified and usually scanned for microchip identification before sedation or euthanasia. Cats are brought in their carriers all at the same time and placed along one wall.

Kennel attendants' knowledge of dogs' and cats' temperaments facilitated appropriate selection of animals needing sedation

Strengths

- Techniques used for restraint were appropriate in most cases
- Drugs are kept in a floor-mounted safe.

Controlled substances, especially those with potential for abuse, should always be maintained in a secure storage unit that cannot be removed from the room.

- A combination of ketamine and xylazine is used as the pre-euthanasia drug for dogs and cats as needed.

The tech creates a "pre-mix" by adding 2mL of 100mg/mL xylazine to a 10mL bottle of ketamine.

- There is a system in place for identification of dogs and cats prior to euthanasia

The animal's identification is checked via photograph in Chameleon, collar identification (when available) and kennel number.

- Most dogs and cats are scanned for microchip identification before euthanasia

Even if animals are scanned at intake, in a recent study, nearly 13% of microchips detected were found after the animal scanned negative at intake.

Problems

- There is no computer in the euthanasia room to check if questions arise about an animal's identity or status.
- There was one kennel technician working that had been off the schedule for the previous couple of days and this person had limited knowledge of the animals being euthanized that day.
- Some cats were pre-sedated using a cat-grabber and syringe pole
  - Some of these cats showed excessive stress and one even escaped after it had received the injection of pre-mix.
- Microchip scanning technique and scanner type are inadequate
  - The available global Bayer Res-Q scanner was available, but staff did not use the scanner with adequate technique.
  - The scanning technique consisted of rapid scanning of the entire dorsum and lateral thorax with the scanner in light contact with the coat.
- In one instance, a dog was scanned for a microchip only after euthanasia was performed
- Animals are not consistently weighed to determine appropriate dosing

There are no scales in the euthanasia room. Dog and cat weights are estimated by staff or intake weights are used.

- Cats on the euthanasia list were locked in their cat boxes in their cages for several hours prior to euthanasia. Cats waited up to two additional hours in their cat boxes after being brought to the euthanasia room.

- Animals were brought into the room and sedated or euthanized occasionally in close proximity to recently euthanized animals.

Most of the time staff would move a recently euthanized dog to the crematorium room prior to bringing another dog into the room, but this was not done consistently.

Some cats were positioned in their carriers such that they could view the euthanasia procedure. All cats were placed on the floor in their transport carriers.

Recommendations

1. Consider installing a computer in the euthanasia room to facilitate checking and updating records.

2. Immediately discontinue use of pole syringes for cats.

3. Purchase equipment approved for capture and restraint of fractious cats, such as nets or EZ-Nabbers.

4. Select equipment that provides stress reduction through minimal handling while providing maximum animal and staff safety. See Additional resources below.

5. Restrain fractious cats using appropriate equipment and administer injections (either sedative or euthanasia solution) by handheld syringe.

6. Obtain better restraint equipment and train staff for its appropriate use (see additional resources below).

7. Get/make a “cat shield” to fit into cat carriers for use instead of the “cat grabbers”. A “cat shield” is constructed of clear, thick plastic or Plexiglas with multiple holes and a handle and allows the user to restrain the cat in the back of its cage or carrier while giving pre-euthanasia sedation through one of the holes. (see Figure 28). These can be made or purchased for standard sized cages from ACES—see additional resources for ordering information.

Figure 28—example of cat/small animal shield

8. Secure/fix cat carrier to an appropriate surface when using "cat shield" to prevent carrier slippage.

9. Alternately, the cats could be transferred to a press cage. One of these was observed on top of the cage units in the euthanasia room (see Figure 29).

Figure 29

10. Figure 29 Press cage that was in euthanasia room is of appropriate size for use with current cat carriers in use at MADACC. Train staff on proper microchip scanning technique and use global scanners to check for microchip identification. (See Additional Resources and intake section for details on microchip scanning.)

11. To increase staff comfort level with global scanners, hold a scanning workshop and practice scanning technique on animals known to have microchip identification.

12. Scan all animals for microchip identification. prior to euthanasia.

13. Trace all microchips that are detected, even in owner-surrendered animals, as the animal may have another owner or shelter of origin.

14. Feral or fractious cats can be sedated and then scanned; if a microchip is found the animal can be recovered rather than euthanized while the chip is traced.

15. Record an accurate weight for all tractable animals prior to sedation or euthanasia.

16. If animals have had a weight recorded in the past two weeks, using this weight is acceptable.

17. If an animal hasn't been weighed in the past two weeks, reweigh.

18. Provide a scale in the euthanasia room for weighing animals prior to euthanasia.

19. Estimates by an experienced technician are appropriate for intractable animals.

20. Continue to utilize an accepted drug or drug combination for dogs and cats that require sedation prior to euthanasia.

21. Do not shut cats inside their carriers until the time they are to be moved to the euthanasia room to prevent unnecessarily prolonged confinement.

22. Do not expose incoming animals to deceased animals or to the euthanasia process.

23. Animals should not have visual access to other animals being euthanized or to dead bodies.

24. Install shelving along the wall or portable shelf racks to place cats in carriers on during euthanasia. Cats should never be placed on the floor while awaiting euthanasia or while dying as this is an extremely vulnerable position for a cat and causes substantial stress. The carriers should also be covered with towels to block the view of the euthanasia procedure and to provide the cats a place to hide.

25. Preferably, move animals to the cremation unit or cooler immediately after verification of death and before bringing in another animal. If this is not possible, move the animal's body to the crematory room or corner of the room and cover.

Additional Resources

ACES Animal Care Equipment & Services Inc. Cat/Small Animal Shield http://www.animal-care.com/cage_accessories.aspx

Freeman Cage Net, www.animal-care.com/nets_launchers.aspx

EZ-Nabber, www.campbellpet.com/product.aspx?func=view&prodID=42

Cat/Small Animal Shield, www.animal-care.com/cage_accessories.aspx

Squeeze cages, www.animal-care.com/squeeze_cages.aspx

Procedures for Scanning for a Microchip
www.sheltermedicine.com/documents/micro_scan_proc.doc

Diagram, Scanning for a Microchip www.sheltermedicine.com/documents/scan_for_microchip.pdf

Webinar, www.aahanet.org/learningcenter/microchip_scanning.aspx

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EUTHANASIA DRUG HANDLING, CHOICE, AND ADMINISTRATION

Euthanasia is performed by injection of sodium pentobarbital. Amounts used are recorded on the euthanasia pull sheet and the individual animal's paper records in the euthanasia room then later added to the daily euthanasia log sheet and entered into Chameleon in the tech room.

Strengths

- Euthanasia drug used is sodium pentobarbital

Euthanasia by injection of sodium pentobarbital is considered best practice.

- Euthanasia drugs are kept in a floor-mounted safe.
- Dogs are euthanized by intravenous (IV) injection in the cephalic vein by a skilled technician.
- Dogs receive appropriate doses of sodium pentobarbital.

Adequate dosage is necessary for an animal to progress smoothly and quickly through the stages of euthanasia.

- Calm cats, kittens, and small puppies are euthanized by IP injection.

Gentle handling and skilled administration reduce stress for both staff and animals.

- The technician consistently replaced the needle used to draw up euthanasia solution with a new needle for injection and changed to another new needle if a subsequent injection was necessary.

Problems

- Euthanasia solution dosage for cats is inconsistent and often inappropriate for IP route.
  - While the dosage chart available appeared to have appropriate dosages, actual dosages given varied in some cases particularly for IP injection. This may have been due to incorrect approximation of weight.
  - Because of under-dosing of euthanasia solution, 2/14 cats entered stage II excitement phase, flailing and vocalizing in carriers.
  - One of these excited cats banged and bounced against carrier walls and caused distress to neighboring cats.
  - Traumatic excitement phases are also a significant cause of staff stress.
- Despite training and certification for all euthanasia technicians, staff knowledge, skill, and processes vary widely.
- Knowledge and practice of euthanasia procedures varied depending on the type of animal and staff member performing euthanasia. The shelter should have a standard protocol for euthanasia which is known and followed by all staff.
- One pregnant cat was not identified as pregnant by the tech prior to IP injection. The consultants assisted in palpation to confirm pregnancy then the cat was given additional euthanasia solution IV after the IP solution had caused sufficient sedation.
- Excessive duplication exists in current record keeping system for euthanasia and logging of drugs.
- In the euthanasia room the tech logs drugs used on the pull sheet and on the animals' paper records. Once euthanasia is completed for the day, the tech returns to the tech room to transfer this information to the drug log, which is kept in the tech room, and into Chameleon.

Recommendations

1. Hire an outside consultant to provide complete retraining and recertification of all euthanasia staff.
2. In addition to recertification, identify a staff veterinarian to review additional AHA and HSUS guidelines for euthanasia.
3. Additional training and veterinary supervision may be necessary until staff is fully trained and proficient.

4. Supervising veterinarian should review, establish, supervise, and monitor appropriate dosages for all animals.

5. The veterinarian should review and update as needed the standard weight-based chart of dosages for different administration routes currently in use.

6. Consider pre-euthanasia sedation and/or IV injection for pregnant cats. Intracardiac injection under anesthesia for pregnant cats is not considered best practices as death and cardiac standstill can occur rapidly with this technique, resulting in the fetal kittens not receiving a sufficient dose of euthanasia drug and thus ultimately die of lack of oxygen.

7. Retrain staff in determining pregnancy in cats. If there is reasonable doubt that a cat may be pregnant, the cat should be treated as if she were pregnant.

8. This will eliminate the risk of injection site error and resultant absorption problems and enable a smooth flow through the multiple stages of euthanasia.

9. Bring euthanasia log into euthanasia room to reduce duplication and unnecessary repetitive drug logging.

10. In the medium term, install a computer work station in euthanasia room to facilitate data entry and animal identification.

11. For in-carrier euthanasia, provide cats with a safe, quiet environment.

12. Use of a box that has been provided to the animal since entry to the shelter is preferable, since the smell and presence of the box would be familiar.

13. Cover the carrier with a towel or sheet.

ANIMAL HANDLING DURING EUTHANASIA

Staff members were generally observed to be calm, gentle and compassionate when handling animals at the time of euthanasia. In most cases, an appropriate amount of restraint was used and appropriate choices made for which animals should receive pre-euthanasia drugs.

Strengths

- Technicians routinely speak to animals in a soothing manner.
- Dog and cat euthanasia technician observed by our consultant is technically skilled at IM, IP and IV drug administration.

The technician is generally calm, confident, and administered these injections to a variety of animals with little or no difficulty especially with a skilled assistant.

- Appropriate animal safety and handling equipment is available for dog handling, including control poles and muzzles.
- Control poles are used on dogs only as needed.

Calm and tractable dogs are gently restrained by the assistant.

Problems

- Humane use of control pole was inconsistent.
- Occasionally when the control pole or slip leash was used in conjunction with the squeeze gate for sedation, the pole/leash was directed up and into the dog placing unnecessary pressure on the dog's neck/trachea.
- This caused dogs to choke, cough and increased their anxiety.
- While the consultants observed generally humane and appropriate handling during the visit, staff members expressed concern and described situations they had observed prior to the consult that were questionable.

Recommendations

1. Retrain staff in use of control pole/slip leads to reduce choking for dogs.
2. Wear appropriate protective gloves when necessary to reduce risk of personal injury from scratches or bites when working with fractious animals.
3. Wash and/or sanitize hands in between animals to reduce stressful smells and protect staff health. Wear gloves when handling animals suspected of having serious and/or zoonotic illnesses (e.g. parvovirus, ringworm).
4. Provide bedding or cage liner for animals being euthanized.
5. Place a soft blanket on the floor to lay dogs on after euthanasia injection.
6. Alternatively, small puppies can be held and comforted, particularly single puppies who cannot receive comfort from littermates.
7. Whereas cats may enter excitement phase after IP injection if held by a person, puppies are much more likely to be calmed, smoothing the process.

CONFIRMATION OF DEATH

Strengths

- For dogs and cats, a corneal reflex check was performed consistently before cardiac puncture.

Cardiac puncture may cause pain to animals that are not deeply anesthetized and checking for corneal reflex can help confirm adequate anesthetic state.

- Technicians wait for confirmation of death before moving euthanized dogs to the cooler or crematory unit.

Death should always be confirmed after euthanasia and before storage or disposal of the body.

Problems

- Confirmation of death is by use of stethoscope only. Because the euthanasia room is noisy, confirmation of death by use of stethoscope alone may be insufficient

Approved methods for verifying that the heart has stopped include cardiac puncture and stethoscope.

- Animals were left for extended periods of time after euthanasia injection before confirmation of death was performed.

- Cats are left in their cat carriers for an extended period of time before confirmation of death is attempted.

- One cat was given Fatal Plus solution IP and left in its cat carrier for over an hour before confirmation of death was attempted. During a portion of this time the cat was observed thrashing and vocalizing suggesting that an insufficient dose of Fatal Plus had been given. The cat had not died by the time it was checked and required an additional IV injection.

Recommendations

1. Independently retrain/recertify euthanasia technicians and provide veterinary oversight of euthanasia.

2. Review and follow AHA accepted practices for verification of death, including use of stethoscope, cardiac stick, and checking for corneal and toe-pinch reflexes.

3. Standardize confirmation of death procedures across species and staff members.

4. Perform confirmation of death no longer than 15 minutes after administration of Fatal Plus. If heart beat is still detected at this time, the dosing chart should be rechecked and additional FP solution should be administered.

5. Use two means for confirmation of death such as cardiac stick in addition to stethoscope use may be necessary at least until noise in euthanasia room can be reduced.

6. Hold staff accountable for deviations from approved protocol.

Appendix A

DAILY ROUNDS ACTION LIST

Date	Animal #	Cage #	Reason/Diagnosis	Action Required	Date Action Required	Requested by	Entered into computer	Date Completed

Appendix B

NAME:_____ BOOKING #:_____INC. DATE:_____

DAILY HEALTH EVALUATION FORM

DATE														
INITIALS														
APPETITE														
Special diet:														
Good														
Average														
Nibbling														
Not eating														
STOOLS														
Normal														
Loose														
Diarrhea														
Bloody														
None														
Fecal taken (see below for results)														
Parvo test run														
URINE														
Normal														
Excessive														
Strong odor														
Bloody														
Straining														
None														
VOMITING														
Food														
Bile														
Hairball														
Blood														
COUGHING														
SNEEZING														
Clear														
Yellow														
Green														
Blood														
EYES														
Clear discharge														
Pus/mucus														
Red/irritated														
Swollen														

FECAL RESULT & DATE:

DAILY BEHAVIOR EVALUATION FORM FOR CATS

DATE														
INITIALS														
OVERALL BEHAVIOR														
Friendly														
Playful														
Scared/shy														
Calm														
Listless/depressed														
Aggressive														
Gets overstimulated/nippy														
Doesn't appear to like other cats														
LITTERBOX BEHAVIOR														
Uses litterbox														
Urine outside of litterbox														
Stool outside of litterbox														
Litterbox seems too small														
BEDDING/TOYS														
Bedding is used, clean/neat														
Bedding is in disarray														
Paper is shredded														
Needs a bed to hide in														
Enjoys playing with toys														
Favorite toy is:														
KENNEL STRESS SIGNS														
Appears depressed														
Aggressive behavior while cleaning the cage														
Excessive vocalization														
Tips food and water dishes														
Never settles down														
OTHER OBSERVATIONS														
Appears cat social														
Appears to get along with dogs														
Does not like to be picked up														
Candidate for offsite?														
Good play room candidate														

COMMENTS: _____

_____

_____

_____

Appendix C

DAILY HEALTH EVALUATION FORM

NAME_____ BOOKING #_____ INC. DATE_____

COMMENTS:_____
_____

DATE														
INITIALS														
APPETITE														
Special diet:														
Good														
Average														
Nibbling														
Not eating														
STOOLS														
Normal														
Loose														
Diarrhea														
Bloody														
None														
Fecal taken (see below for results)														
Parvo test run														
URINE														
Normal														
Excessive														
Strong odor														
Bloody														
Straining														
None														
VOMITING														
Food														
Bile														
Hairball														
Blood														
COUGHING														
SNEEZING														
Clear														
Yellow														
Green														
Blood														
EYES														
Clear discharge														
Pus/mucus														
Red/irritated														
swollen														

FECAL RUSULTS & DATE _____

DAILY BEHAVIOR EVALUATION FORM FOR DOGS

NAME_____ BOOKING #_____ INC.DATE_____

DATE														
INITIALS														
OVERALL BEHAVIOR														
Friendly														
Outgoing														
Scared/shy														
Vocal														
High energy														
Calm														
Listless/depressed														
Aloof														
Aggressive														
Aggressive toward dogs (through kennel)														
CLEANLINESS OF KENNEL														
Completely clean														
Some mess, but not stepped on														
Somewhat messy														
Smeared														
BEDDING/TOYS														
Bedding is used, clean/neat														
Bedding is ripped to pieces														
Bedding has urine/feces on it														
Bedding pushed away/ignored														
Rawhide has been chewed														
Enjoys playing with toys														
Favorite toy is:														
KENNEL STRESS SIGNALS														
Spins in cage														
Smears feces all over kennel														
Appears depressed														
Bites at cage door														
Barks excessively														
Bounds off kennel walls														
Never settles down														
BARKING IN KENNEL														
Rarely barks														
Constantly barks														
Excitement barks														
Attention barks														
Alarm barks														
Viscously barks														

Appendix D

Date	Location	Booking Number	Description	Problem	Requester Initials	Diagnosis / Treatment / Plan	Seen by	Entered	Re-check

Appendix E

Simple Shelter Enrichment for Dogs

An enriched environment is one in which an animal has variety, choice and control over its daily activities. Environmental enrichment should be conducted as part of a comprehensive behavioral wellness plan that ensures all animals receive proper housing, consistent daily routines, adequate physical exercise, mental stimulation, social companionship and positive reinforcement-based training. These exercises will be most effective when utilized as a preventive measure, rather than when trying to address problems that are already in existence. Enrichment should address all the senses: sight, hearing, touch, taste and smell.

- Provide a raised bed or soft bedding for comfort
- Use feeding devices rather than feeding from bowls – Kongs® and Tug-A-Jugs™ are great but plastic bottles, milk jugs, laundry jugs, or other disposable containers work very well as an inexpensive option (make sure to take the labels and plastic rings off the soda bottles prior to giving to the dogs; also check on dogs the first few times you give them plastic bottles as enrichment to make sure they are not ingesting pieces of plastic)
- Spray Lavender or food scented air fresheners in the kennel areas 1-2 times per day
- Play “find it” or tracking games
- Play soothing music to reduce stress
- Hang wind chimes in the dog room and hit them a couple times a day
- Hang a mobile and set it into motion a couple times a day
- Blow ‘bubbles’ in the kennel
- Provide toys in the cage, rotating them often for novelty
- Provide chew items
- Freeze toys and treats in ice blocks and hang from top of cage
- Social contact with other dogs via playgroups or walks together
- Social contact with people – leash walks, grooming, petting, playing
- Aerobic exercise
- Clicker training – to teach skills and for mental stimulation
- D.A.P. (dog appeasing pheromone) - Plug a diffuser in small rooms or place collars on dogs that are stressed or frightened in a kennel setting

Brian A. DiGangi, DVM
Updated 4/12/10

Appendix F

Simple Shelter Enrichment for Cats

An enriched environment is one in which an animal has variety, choice and control over its daily activities. Environmental enrichment should be conducted as part of a comprehensive behavioral wellness plan that ensures all animals receive proper housing, consistent daily routines, adequate physical exercise, mental stimulation, social companionship and positive reinforcement-based training. These exercises will be most effective when utilized as a preventive measure, rather than when trying to address problems that are already in existence. Enrichment should address all the senses: sight, hearing, touch, taste and smell.

- Provide a variety of toys in the cage or hanging from the cage and rotate them on a regular basis (cheap items work just as well: e.g. wads of paper, pipe cleaners, ping pong or golf practice balls, golf tees, bottle caps, etc.)
- Provide carpet remnants or corrugated cardboard for scratching
- Place a small pinch of catnip on a towel in the cages a couple times per week
- Provide boxes or paper bags for hiding
- Provide cat beds or hammocks for resting
- Provide a perch of some kind so they can get up high
- Play soothing music to reduce stress
- Play bird song CD's
- Place perpetual motion devices in the area outside the cages - set in motion a few times a day
- Turn on a small "disco ball" in the cat room for a few minutes each day
- Hang a mobile and set it in motion a couple times a day
- If there is a window in the cat room, hang a bird feeder outside to attract birds to visit
- Give a food treat at a regular time each day – cat treats, tuna fish, chicken flakes
- Stuff a mini-Kong® or other small plastic container with treats
- Allow long term residents (>14 days in shelter) time out of the cage several times a week and give them access to toys to play with, bags to hide in, scratching posts to scratch on, and cat grass to nibble on
- Social contact with people – grooming, petting, playing
- Clicker training – teach the cats to come to the front of the cage and touch their nose to a target
- Feliway® – Plug a diffuser in cat rooms or spray a piece of fabric and place it in the cage with the stressed cats once a day

Brian A. DiGangi, DVM
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