Shelter Data: An Underutilized Resource
Jan Scarlett, DVM, MPH, PhD
Professor Emerita of Epidemiology
Cornell University

Challenge you

to make greater use of your data
to improve the welfare of your animals

but

To do so wisely

Animals welfare is everyone’s business

Today

Share some

- Influential metrics
- Discuss their interpretation

Examples of

- how data can guide and change behavior within a shelter
- how data can help build and enhance cooperation among organizations in a community
Can greater evaluation of data help your shelter?

"Harnessing the insights from data to drive decisions has the potential to transform the amount of change nonprofits can make in the world."

"Without data, decisions are left to tribal knowledge or worse, the whims of the Highest Paid Person's Opinion (HiPPO)."

S. Maclafflin in his book, Data Driven NonProfits

Data should be useful
else why collect it?

- At the individual animal level
- At the population level where it helps inform:
  where the organization has been
  where it is heading
  whether "programs/policies are working"
  (e.g., are achieving their goals?)

Why use your data?

Data can
- Increase insight
- Suggest goals/highlight problems
- Measure progress
- Enhance communication
- Motivate
- Build cooperation
- Aid in grant acquisition
- All leading to enhancing the welfare of your animals
Objectives
state in broad terms what a shelter wishes to accomplish with regards to its Mission

Goals
are very specific, actionable steps tied to achievement of an objective that are designed to make progress towards achievement of that objective

Goal setting: SMART approach

• Specific
• Measurable
• Achievable
• Relevant
• Time-bounded

Without goals, we tend to maintain the status quo.

INTAKE
• Owner-relinquishment
• Stray
• Transfers in
• Other (e.g. legal seizures, health dept., TNR, S/N, special programs)

Within the shelter

Animal movement
Housing capacity
Census
Disease incidence
Behavioral health

OUTFLOW
• Adoption
• Return-to-owner
• Transfers out
• Euthanasia
• Other (e.g. died in shelter, lost)
What are your shelter’s basic objectives?

1. Reduce intake from community
   - [e.g., S/N, TNR programs, subsidized vet care]

2. Provide for the best welfare of the animals in your shelter as possible
   - [e.g., prompt vaccination; enrichment; daily rounds]

3. Release as many animals alive as possible
   - [e.g., transfer out; offsite adoptions]

What metrics should shelters monitor?
(The four W’s)

- What happened?
- Who was involved?
- When did they occur?
- Where did they take place?

- euthanasia, illness, ALOS went up, behavioral problems
- OGS/stray/other; kittens/adults; bully/non bully breed
- Month/season/year
- On the adoption floor; at offsite location; from a trailer park

Within shelter metrics

Average Length of Stay
Housing Capacity
Overcrowding has many deleterious effects

Capacity is a function of space (and staffing)

- Length of stay increases
- Intake exceeds outflow
- Isolation facilities are overwhelmed
- Animals accumulate, adherence to protocols declines
- Disease rates rise

What can be done to diminish overcrowding?

- Build more housing units
- Increase outflow
- Reduce intake
- Reduce time in the shelter
Factors affecting how many animals can be housed

- The number of humane housing units (HHUs) available
- The time animals usually spend in the shelter (ALOS)
- Intake (and outflow)

Three influential metrics in a period

- Estimated number of animals that you can house
- Average daily inventory
- Average length of stay

Estimate the number of humane housing units (HHUs) you have available

- Number of animals you can house at one point in time

<table>
<thead>
<tr>
<th>Metric</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holding - kittens</td>
<td>12 - 20</td>
</tr>
<tr>
<td>Holding - adult cats</td>
<td>25 - 30</td>
</tr>
<tr>
<td>Adoption - kittens</td>
<td>20 - 35</td>
</tr>
<tr>
<td>Adoption - adult cats</td>
<td>22 - 28</td>
</tr>
<tr>
<td>Isolation</td>
<td>15 - 18</td>
</tr>
</tbody>
</table>
Your average daily inventory

Compared to the number of housing units that you have

Dynamic capacity: the number of new animals you can house in a time period (assuming the shelter is full)

\[
\text{# HHUs} \times \frac{\text{# of days in period}}{\text{Ave. LOS}} = \text{# of new animals shelter can house}
\]

Simplify the formula

Divide both sides of equation by the number of days in the period

\[
\text{No. of HHUs} = \frac{\text{animals that should enter/leave daily}}{\text{ALOS}}
\]

E.g., 30 humane housing units/ 15 days = 2 animals per day can enter and 2 must leave
How many cats could we house during July-September?

50 cages x 92 days = 4,600 cage-days

ALOS = 20 days

\[
\frac{50 \text{ cages} \times 92 \text{ days}}{20 \text{ days}} = 230 \text{ cats}
\]

Or should be admitting & moving out ~ 2 - 3 cats/day

How many cats could we house during the summer?

50 cages x 92 days = 4,600 cage-days

Target ALOS = 14 days

\[
\frac{50 \text{ cages} \times 92 \text{ days}}{14 \text{ days}} = 328 \text{ cats}
\]

Or should be admitting & moving out ~ 3 - 4 cats/day

What happens to housing capacity if ALOS is reduced during Summer?

<table>
<thead>
<tr>
<th>Number of housing units</th>
<th>ALOS (days)</th>
<th>New animals that could be housed</th>
<th>Number of animals to accept daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>22</td>
<td>209</td>
<td>2.3</td>
</tr>
<tr>
<td>50</td>
<td>20</td>
<td>230</td>
<td>2.5</td>
</tr>
<tr>
<td>50</td>
<td>18</td>
<td>256</td>
<td>2.8</td>
</tr>
<tr>
<td>50</td>
<td>16</td>
<td>287</td>
<td>3.1</td>
</tr>
<tr>
<td>50</td>
<td>15</td>
<td>307</td>
<td>3.3</td>
</tr>
<tr>
<td>50</td>
<td>14</td>
<td>328</td>
<td>3.6</td>
</tr>
</tbody>
</table>
**Dynamic capacity:** the number of new animals you can house in a time period (assuming the shelter is full)

\[ \text{# HHUs} \times \frac{\text{# of days in period}}{\text{Ave. LOS}} = \text{# of new animals shelter can house} \]

**https://www.targetzeropro.org/capacitycalculators**

**Three influential metrics in a period**

- Estimated number of animals that you can house
- Average daily inventory
- Average length of stay
Assumptions associated with the formula:

- Intake = outflow
- Evenly spaced over the period
- All HUs are occupied
- The ALOS is constant across the period
- Estimates from last year are valid for this year
- Using Care-based ALOS

Understand the numbers that you use.

Movement of individuals:

Length of stay (LOS) in the shelter

Why is this important?
The shelter is a dynamic system

Each animal takes a path

- Adoption floor
- Animal enters
- Initial physical examination
- Spay/neuter surgery
- Behavior evaluation
- Adopted

What's happening within the shelter?

Movement of population

Average length of stay (ALOS)

Why is this important?

Time spent by animals in a shelter is related to:

- Risk of disease development (at least in the first 2-3 weeks)
- Risk of behavioral deterioration
- The number of animals that can be housed
- Cost of care
Goal

Minimize ALOS
Numerous strategies
Monitor ALOS regularly

ALOS is a summary measure
Can mask the experience of subgroups (e.g., age group, source)

Start with overall ALOS
Then refine
by age group, source
(e.g., owner-surrender, stray)
by in foster or not
by time (e.g., season)
by time to various events
(e.g., physical/behavioral evaluation, S/N surgery)
How is the average length of stay calculated?

<table>
<thead>
<tr>
<th>Sum of LOS of all animals</th>
<th>No. of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in a given period</td>
</tr>
</tbody>
</table>

Animal: Length of Stay

How is ALOS calculated in software?

- **Intake date**: average length of stay among animals entering during the period
- **Outcome date**: average length of stay among animals leaving during the period
- **Care-day**: average length of stay during the period of animals present during the period
### Four dogs in a rescue

<table>
<thead>
<tr>
<th>Cat #</th>
<th>May</th>
<th>June</th>
<th>July</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>20 days</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>10 days</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>180 days</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>80 days</td>
</tr>
</tbody>
</table>
### Care-day based ALOS

<table>
<thead>
<tr>
<th>Cat #</th>
<th>May</th>
<th>June</th>
<th>July</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>20 days</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>10 days</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>180 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>90 days</td>
<td></td>
</tr>
</tbody>
</table>

\[
ALOS = \frac{5+10+20+30}{4} = 16.3 \text{ days}
\]

Created by Dr. Hoshizaki

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### Which approach should you select?

 Depend ... on how you intend to use the information and the time frame of interest

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### Which method to use?

**Following ALOS by year**

All produce about the same estimates

**Following ALOS by month/season**

Intake-based ALOS: may be biased downward

Outcome- and care-day: could be used

**Estimating housing capacity for year**

Don’t advise unless ALOS, intake are constant

**Estimating housing capacity for month/season**

Use care-day based
Intake metrics

**Common objective:** reduce intake of homeless animals from the community

**So, which intake metrics?**

- Who is entering?
- When are they entering?
- Where are they coming from?

**Program evaluation: S/N and TNR efforts**

- Example: Shelter has a S/N voucher program for owned cats and a TNR program for free-roaming cats.
- Objective: Reduce intake of animals from the community
- What’s the plan? SMART goals
- What metrics could you monitor?
Reduce incoming homeless cat numbers (from the "service area") — of OGS & strays

What could a shelter monitor?
- Decreased cat intake
- Decreased kitten intake
- Increased % of cats sterilized at intake or when trapped
- Increasingly older population of cats entering
- Lower % of pregnant/lactating cats
- Lower % of queens and kittens

Is the program working?

Other Explanations
- Growing human population
- Growth of other humane groups (e.g., rescue groups, shelters)
- Changing priorities (e.g., new transfer program, special outreach to previously underserved populations)
- Other explanations (not targeting, insufficient time period)?

Target spay/neuter efforts for owned cats/free-roaming cats

- Intake data: zip code, GIS
- Where are your participants (in subsidized programs) coming from?
- Kittens: where are they coming from?
- Other metrics?
Study using zip codes


Another strategy for targeting

Using GIS technology


GIS MAP OF CLUSTERS OF KITTEN INTAKE 2009-2011
Shelters are complex organizations with a myriad of objectives, needs, expectations.

- LRR alone is only a glimpse at how the shelter is doing.
- Would a for-profit company focus almost exclusively on their overall annual sales?
- **Need a far more robust look!**
  - returned adoption rate, adoption rate, death rate, euthanasia rate, still-in-shelter rate, etc.

**Pitfalls of LRR**

- One metric presenting of a complex system
- Many definitions / meanings
- A summary measure
Summary

- Using your data can improve your operations and the welfare of your animals – align your use of metrics with your Mission and Objectives
- Formulate SMART goals
- Metrics have strengths/limitations – use and interpret wisely
- Of course, any metric requires valid data

Every Nose Counts: Using Metrics in Animal Shelters

[Amazon link]