Adoption driven capacity: Your shelter's key to saving lives *and* providing great care

What is the perfect number of animals to have up for adoption at any one time?

We know from the retail world that this is a critical question, all the more so when we're dealing with living, feeling beings. Too few animals for adoption and willing adopters may walk out of the shelter empty-handed because they couldn't find the pet of their dreams.

Too many animals for adoption and costs and length of stay are needlessly increased, conditions for care may be compromised, and in the worst case scenario adopters are so overwhelmed by choices that they don't take any animal home at all.

Just the right number, and welfare and health are maximized while cost is minimized, more animals are served over time, and everybody wins!

We know which of these three options we want, but how do we determine that elusive "just right" number? To help each shelter answer this question, we've developed this article and the associated Adoption-Driven Capacity (ADC) Calculator. We hope these tools are useful for you!

Choosing the right number: Playing the odds

Simple math tells us the number of animals available for adoption will have a direct impact on the likelihood of adoption for each one. All other things being equal, if 10 animals are awaiting adoption and one adopter walks in, each animal will have a 1 in 10 chance of selection. If 20 animals are waiting when that same adopter comes through the door, the odds drop to 1 in 20.

Of course, the odds won't really be evenly distributed: some animals, such as outgoing youngsters or purebreds, will tend to have higher odds while "less adoptable" animals will have lower odds of selection. However, the average chance will always remain a direct function of the number of animals and the number of adopters.

At some point, the numbers themselves may further reduce each animal's odds of adoption. Research on selection for everything from gourmet chocolates to potential mates suggests that too many choices will have a detrimental or even paralyzing effect on the ability to choose. We've probably all had this experience at one time or another – whether shopping for salad dressing or cell phone plans, a dazzling array of choices can become simply overwhelming.

The role of length of stay

The number of animals awaiting adoption is integrally tied to length of stay (LOS). In general, the more animals are waiting for adoption, the longer the average length of stay will be. This is another way of thinking about the "odds of adoption" described above.

If 10 animals are waiting at any given time for adoption, and one is adopted each day, the odds of adoption for each animal on any day will be one in 10, and the average length of stay to adoption will inevitably be 10 days. If 20 animals are waiting at any given time for adoption and one is adopted each day, the average LOS will be 20 days. The only way to decrease LOS would be to increase the number of adoptions or decrease the number of animals waiting.

In some cases, the number of adoptions will be increased by making a greater number of animals available. On a short term basis, this can occur with big adoption extravaganzas, where a large number of animals are presented in the context of major publicity, special pricing or other promotions.

In between times, animals should wait in foster care or in homes (via managed intake http://www.millioncatchallenge.org/resources/managed-admission) rather than waiting for prolonged periods in the shelter in preparation for big adoption events.

On a longer term basis, having more animals for adoption will lead to increased adoptions only when the reason adopters are not coming to the shelter and going home with a new pet, is that there is not an adequate variety of animals available from which they can choose.

Consider species, age, breed, color, behavior, and special characteristics when evaluating the need for variety. While many adopters are seeking friendly, healthy, young animals, some will seek out hard luck cases, older animals, and those with special challenges. Ideally, survey potential customers to see if they were considering adoption that day, and if so, why they did or didn't choose a pet.

The ASPCA refers to the frequency with which visitors become adopters as "transition rate," and has instructions for creating a customer survey to help understand determinants of transition rate in your shelter here (http://www.aspcapro.org/turning-visitors-into-adopters.php).

Beyond the number that ensures adequate variety on a daily basis, fewer animals for adoption at any given time will automatically decrease LOS while maintaining live release: If one animal is adopted each day, the annual adoption number will be 365, whether 10 or 100 animals are waiting for that adoption at any given time.

Finding that perfect "adoption number" is made both more critical and more complicated by the fact that length of stay is not neutral for shelter animals. Some animals will benefit from the opportunity to stay longer in the shelter, particularly those who will receive active treatment or rehabilitation while awaiting adoption, or those who have a unique characteristic (e.g. very large dogs, animals with conditions requiring special care) that makes them suited for a limited number of adopters that come along relatively rarely.

However, for most animals that enter the shelter healthy and friendly, increased length of stay tends to be detrimental rather than beneficial. The more stressful the conditions in the shelter and the less optimal the housing, the more this will be true.

Multiple studies have documented time in the shelter as the single greatest risk factor for illness in shelter dogs and cats [1-3]. In turn, illness contributes to yet longer stays – a detour within the shelter system with substantial cost and yet more challenges for care. An animal who is depressed or develops stereotypic behavior from prolonged confinement sees his or her chances for adoption further decrease.

Marketing matters

Presentation of animals also matters, of course. While "saving a life" is commonly cited as a primary motivator for adoption of a shelter pet, we also know that most adopters prefer healthy, friendly animals[4].

Housing that promotes good health and relaxed, outgoing behavior will help get each animal out the door more quickly [5]. This means a primary housing environment (cage, condo, kennel or room) that alleviates stress and allows expression of a range of normal behaviors such as playing and seeking interaction.

Placement also has an effect. Cats presented at eye level receive more attention from potential adopters than those tucked away towards the floor or in upper story cages or condos [6]. Similarly, enrichment such as a bed and toy in the kennel is associated with an increase in adoptions [6, 7].

Good news about good care

By happy coincidence, the same conditions that encourage adoption also help ensure good health and welfare for animals. *The Association of Shelter Veterinarian's Guidelines for Standards of Care in Animal Shelters* emphasizes the importance of the physical environment:

> *Primary enclosures must provide sufficient space to allow each animal, regardless of species, to make normal postural adjustments, e.g., to turn freely and to easily stand, sit, stretch, move their head, without touching the top of the enclosure, lie in a comfortable position with limbs extended, move about and assume a comfortable posture for feeding, drinking, urinating and defecating*. [8]

The figures below illustrate the relationship between housing quality, stress, and live release for shelter cats.

Figure 1: Stress score decreased dramatically faster in cats housed upon intake in larger, double compartment cages compared to cats in traditional, single compartment, approximately 2' by 2' units. This correlated with a decreased risk of euthanasia as well as allowing the cats to progress to rescue or adoption more quickly.

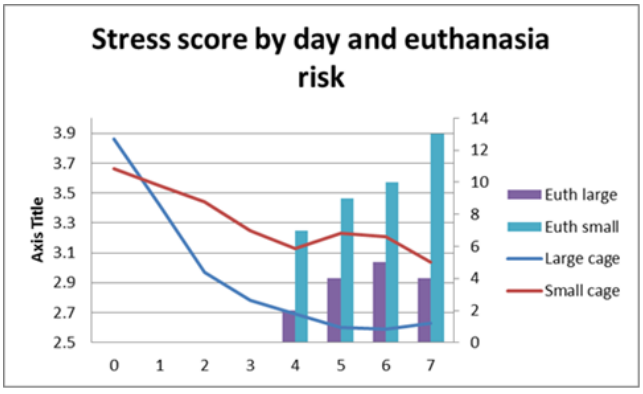
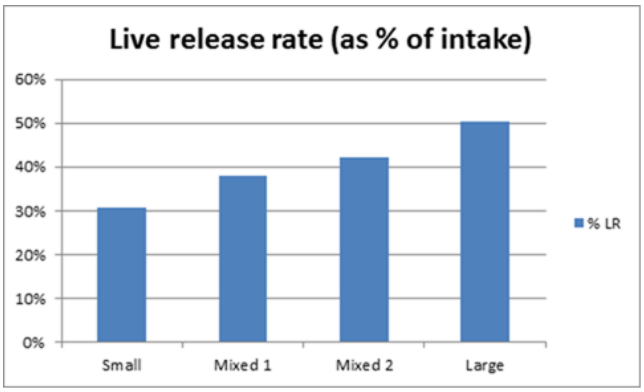


Figure 2: Live release rate at the same shelter during four equivalent time periods when cats were housed in all small cages (time period 1), a mix of large and small cages (time periods 2 and 3), or all large, double compartment cages (time period 4, cages were around 4' wide by 28" deep). No additional space was added as cages were converted, so the number of cages decreased as the size of the cages increased (primarily by portalizing existing cages).



Given the importance of good quality housing, it makes sense to embark on a long term plan to ensure these conditions for every animal from the time of intake.

When planning a new facility, making an investment in a sufficient number of high quality housing units will be a foundation for success over decades to come. For existing facilities, retrofitting cages and kennels can be an extensive undertaking. Either way, few shelters are burdened with extra money or space – "right sizing" the adoption population allows investment in the number of high quality housing units that will serve the population optimally and no more than this number.

Getting to adoption-driven capacity

If you're starting out with a brand new empty shelter, getting to adoption-driven capacity (ADC) won't be a problem. Simply open your doors, and within a few days no doubt your adoption center will be full of happy animals awaiting their forever homes.

But what if you already have a group of animals up for adoption, more than the ADC calculator tells you would be ideal? *Any* number of animals will tend to be self-sustaining: if a shelter has 10 animals for adoption and adopts out an average of one a day, the average LOS will be – you guessed it! – 10 days! If one day they admit another 10 animals without adopting out an extra 10, the population awaiting adoption will be 20. If adoptions continue at one a day, the average LOS will now be 20 days, and will remain at 20 days unless the population awaiting adoption is reduced or adoptions are increased. So what to do to get back from 20 to 10?

For cats, a population reduction can happen naturally during the winter months when fewer kittens are admitted. This can be a good time to shift the housing to support the ideal capacity, which as noted above will then tend to be self-sustaining.

If a population shift doesn't occur naturally, however, some active steps will be required. Inevitably, a population expands when intake exceeds live release, and eventually reaches some steady state where intake matches outcomes.

When the shelter in the example above took in 10 more animals than were adopted one day, the next day they had an extra 10 in their care, and this will be sustained until active steps are taken. Similarly, if they wanted to reduce their population back to 10, then over some period of time they would need to release 10 more animals than are admitted.

This could be accomplished in one fell swoop through a big adoption promotion or a one-time transfer to a partner (if such is available), or through a more gradual effort to adopt or rescue just one or two more animals a day over a longer time period.

Sometimes just by fast tracking the most adoptable while sustaining "background" adoptions for the slow trackers, the population will decline. For shelters that manage intake, ADC can also be reached by slowing down intake to allow adoptions to catch up.

Whatever strategy is employed, remember this only needs to be done once. If the shelter in the example adopts out two animals a day instead of one for just 10 days, or defers intake of one animal a day for five days and adopts out one extra animal for five days, a new steady state will be reached.

If this steady state allows provision of better housing and ideal care, and presents a good but not overwhelming mix of choices for the public, not only will it be sustained, adoptions are likely to increase, and cost of care and length of stay will tend to decrease. The savings thus realized can be invested in other positive programs to help keep animals out of the shelter in the first place – a true win-win scenario!

***Still* not sure?**

If you're still not excited enough about this, here are some testimonials from three shelters that took the plunge. In each case the number of animals for adoption was lowered, enabling improvements to housing such as portalizing cages, replacing small cages with larger double compartment condos, or simply opening connecting doors between condos that had previously been closed.

The beneficial effects likely resulted from the combination of lower numbers for adoption leading to a shorter length of stay AND the improvements to housing that were possible as a result.

The first testimonial:

> *We saw some effects right away. The lofts were immediately quieter, cats seeming more relaxed. There were very few cats "fake sleeping." The longer term effects are just starting to show up. Cat isolation is empty today, because our URI rates have plummeted. Cats aren't breaking with URI right before or after adoption. And now that the statistics for July are in, we found that our live release rate for felines in July 2011 was 70 percent. In 2010 it was 54 percent. We euthanized 140 fewer felines in July 2011 compared to July 2010 – and those numbers include the cats we euthanize on intake for lack of space.*

Another:

> *To all who worked on our adoption-driven capacity: We started with the new cat condos on April 1. During the construction project, we (unintentionally) got to zero cats in our inventory. They were adopted out more quickly than we had anticipated and we were not able to get adoptable cats fast enough through owner surrenders. We took in 10 cats and kittens through transfers, which we almost never do. I was able to run a report for LOS (length of stay) for available felines comparing April 1-16, 2012 to the same time period 2013. April 2012 – 30.5 days; April 2013 – 3.5 days. The cats are practically flying out of the shelter!*

One more:

> *It is working so well I am completely blown away. The response from the public with regard to the lack of crowding has been very positive, and our volunteer retention for cat volunteers has improved with the improved housing conditions for the cats. It is a win win win win program I wish we would have started years ago!*

The nitty gritty: Calculating adoption-driven capacity

So after all this discussion, what *is* the elusive "just right" number of animals for adoption?

Fortunately it turns out not to be all that complex in most cases. The perfect number is primarily driven by the average and maximum number of adoptions achieved over time, and is calculated by determining the target average length of stay, and multiplying that by the monthly daily average number of adoptions.

For your convenience, we have provided a simple calculator to help you determine your ADC.

Using the ADC Calculator

The ADC calculator allows you to calculate the number of animals to have up for adoption at any one time to optimize your length of stay and live release while minimizing risks and costs. It also allows calculation of your expected length of stay for a given number of animals up for adoption and number of adoptions.

All you need to know is your average and maximum monthly adoptions and your target length of stay. Fill in the areas highlighted yellow with your shelter's numbers and the calculator does the rest!

Choosing your target length of stay

In general, the *overall* target length of stay to adoption should be 7-21 days for animals not requiring any rehabilitation or special care prior to becoming adoptable. This includes time spent in stray holding or quarantine. Routine procedures such as spay/neuter and behavioral evaluation should be accommodated during the average holding (pre-adoption) time period or immediately thereafter whenever logistically possible.

The ideal target length of stay actually available for adoption (ready to go with all required holding periods and procedures completed) is ideally 7-10 days. The lower end of the range can be used for shelters where animals can be viewed for adoption during a stray hold/quarantine period. For shelters where this is not the case the higher end of the range may be more appropriate.

If 7-10 days seems alarmingly short, remember the law of weighted averages: if most animals stay a shorter amount of time in adoptions ("fast track"), a few animals can stay quite a long time ("slow track") and still hit a target LOS that is fairly short.

You can use the "average weighter" for LOS to play around with different parameters that reflect your shelter's intake and outcomes. For instance, in the example below, we are aiming for an average LOS of

eight days, but about 70 percent of the animals are adopted within an average of three days, meaning the remaining 30 percent will stay nearly three weeks on average.

Average weighter				
Overall average LOS in adoption	**% fast track**	**fast track average**	**% slow track**	**slow track average LOS**
8	70%	3	30%	20

Also remember, if 7-10 days seems much longer than the current length of stay at your shelter, that may reflect the fact that the number of animals in the shelter at one time may be higher than the recommended ADC. Simply reducing the number will automatically decrease the LOS while maintaining or improving live release. (Don't panic if right now there are more animals for adoption than the ADC calculator recommends – see the section on "Getting to Adoption Driven Capacity" above for ideas on how to get there without having to decrease intake or increase euthanasia.)

Meanwhile be optimistic when you choose your target length of stay, keeping in mind these principles, and use that figure in the ADC calculator to determine how many animals should be housed for adoption.

The basic yearly and monthly ADC calculator

You can use the basic ADC calculator to estimate the overall number of animals to have for adoption at any one time given various target lengths of stay.

If you have several different sites for adoptions, ideally run it separately for each one if the data is available (do not include off-site adoptions when calculating shelter ADC).

Simply enter the expected average number of adoptions in column A and your target LOS in column B. To get a rough figure, use the annual calculator. For more detailed planning, try this with figures from several different months including your lowest, your average and your highest* adoptions per month.

Column C will give you a recommended daily population. This can be accommodated by individual kennels/condos and group housing. Remember that multiple juveniles may be housed per unit, so if juveniles play a big role in your adoptable population, see the peak season calculator below.

*If your shelter sometimes holds "mega-adoption" events, these numbers should generally be excluded from calculating baseline ADC. Ideally these animals will be held in foster care, scheduled for intake, or otherwise housed in comfortable longer-term quarters until the big day itself.

Planning adoption holding based on occasional mega-events will tend to result in over-building new facilities or overstocking existing facilities most of the time. In turn this can lead to an excessive length of stay for animals during average times.

Fast track and slow track

As noted above, not all animals will stay the same amount of time, with "highly adoptable" animals staying less time and animals with some challenges staying a little – or a lot – longer. Fortunately through the law of averages, keeping the fast track animals flowing means these slower-moving animals can be provided all the time they need.

You can use the ADC fast track/slow track calculator to get a feel for how the numbers will work in your shelter. Enter your overall adoptions per year or month in column A as before, and the target LOS for your "fast track" animals in column B.

Be optimistic – remember, getting the numbers and housing right will tend to facilitate a shorter LOS in itself.

In column C, enter the approximate percent of animals that are expected to be fast track.

In column D, enter your target length of stay for "slow track." Again, be optimistic but realistic – there is no reason a friendly adult animal with no particular health or behavior problems should take more than a week or so to find an adopter at most shelters, while a much smaller number of animals with serious challenges may stay for weeks or months.

Column F provides the recommended overall daily population. Plan housing quality in proportion to your expected fast track and slow track populations. Condo or other individual housing that provides for excellent disease control is appropriate for fast track animals, while more spacious room or large run-style individual or small group housing is desirable for animals expected to stay longer.

Double compartment housing is important for all stages of shelter care. Remember that even if only a small percentage of animals moving through your facility are slow track, if the length of stay is considerably longer than that of fast trackers, they will still make up a majority of the daily population.

The peak and slow season calculators

If you have significant variation associated with juvenile intake (most commonly kittens), use the peak season calculator to determine the mix of adult and juvenile housing required.

In general, you will need more adults for adoption during non-peak months, but this can usually be accommodated with the same housing mix (since there are very few kittens for adoption during peak adult adoption months).

If you're not sure, find your month with peak kitten adoptions and run it with the numbers for kittens and adults that month, then find your month with peak adult adoptions and do likewise. Do not, however, put in your peak adult adoptions for one month and your peak kitten adoptions for another month and use these numbers, unless they happen to occur in the same month.

You can also use the slow season calculator to see what housing mix is recommended during your lowest adoption month (when adults tend to make up the majority of adoptions). This can help you ensure that your housing is flexible enough to meet the needs of animals staying longer. Having condos that can be joined together in the slow season to provide larger, more humane housing for adults can be helpful to meet both peak and slow season housing needs.

The adoption length of stay reverse calculator

On both the yearly and monthly adoption driven capacity calculator tabs, you will also find an adoption length of stay reverse calculator. This allows you to calculate the average length of stay for a given

number of housing units kept full. As before, fill in the yellow highlighted cells with your shelter's numbers: the actual monthly adoptions and daily population in your adoption area will give you the expected overall average LOS in column C. If you like, you can also enter your approximate percent and LOS for fast track animals, which will give your expected LOS for slower track animals. Again, if this number exceeds two weeks, it raises a red flag to ensure that slow track housing meets a broad range of behavioral needs for the animals.

Housing needs calculator for annual or monthly adoptions

This calculator allows you to see how many adoptions can be achieved with a given number of housing units and a target length of stay. So, for instance, if you have only 30 animals up for adoption at any one time and want to achieve 100 adoptions a month, you can try different target lengths of stay to see what you'd need to maintain to reach your goal. Or you can put in your absolute length of stay and see how many housing units you'd need. You get the idea, we're sure.

Notes:

1. Holt, D.E., M.R. Mover, and D.C. Brown, *Serologic prevalence of antibodies against canine influenza virus (H3N8) in dogs in a metropolitan animal shelter.* J Am Vet Med Assoc, 2010. 237(1): p. 71-3.
2. Edinboro, C.H., M.P. Ward, and L.T. Glickman, *A placebo-controlled trial of two intranasal vaccines to prevent tracheobronchitis (kennel cough) in dogs entering a humane shelter.* Preventive Veterinary Medicine, 2004. 62(2): p. 89-99.
3. Dinnage, J.D., J.M. Scarlett, and J.R. Richards, *Descriptive epidemiology of feline upper respiratory tract disease in an animal shelter.* J Feline Med Surg, 2009.
4. Weiss, E., et al., *Why Did You Choose This Pet?: Adopters and Pet Selection Preferences in Five Animal Shelters in the United States.* Animals, 2012. 2(2): p. 144-159.
5. Gourkow, N., *Factors affecting the welfare and adoption rate of cats in an animal shelter*. 2001, University of British Columbia.
6. Fantuzzi, J.M., K.A. Miller, and E. Weiss, *Factors relevant to adoption of cats in an animal shelter.* J Appl Anim Welf Sci, 2010. 13(2): p. 174-9.
7. Wells, D.L. and P.G. Hepper, *The influence of environmental change on the behaviour of sheltered dogs.* Applied Animal Behaviour Science, 2000. 68(2): p. 151-162.
8. Newbury, S.P., et al., *Guidelines for Standards of Care in Animal Shelters*. 2010, The Association of Shelter Veterinarians. p. 64.