

Feline Upper Respiratory Disease Basics



Photo: Dr J Lamb

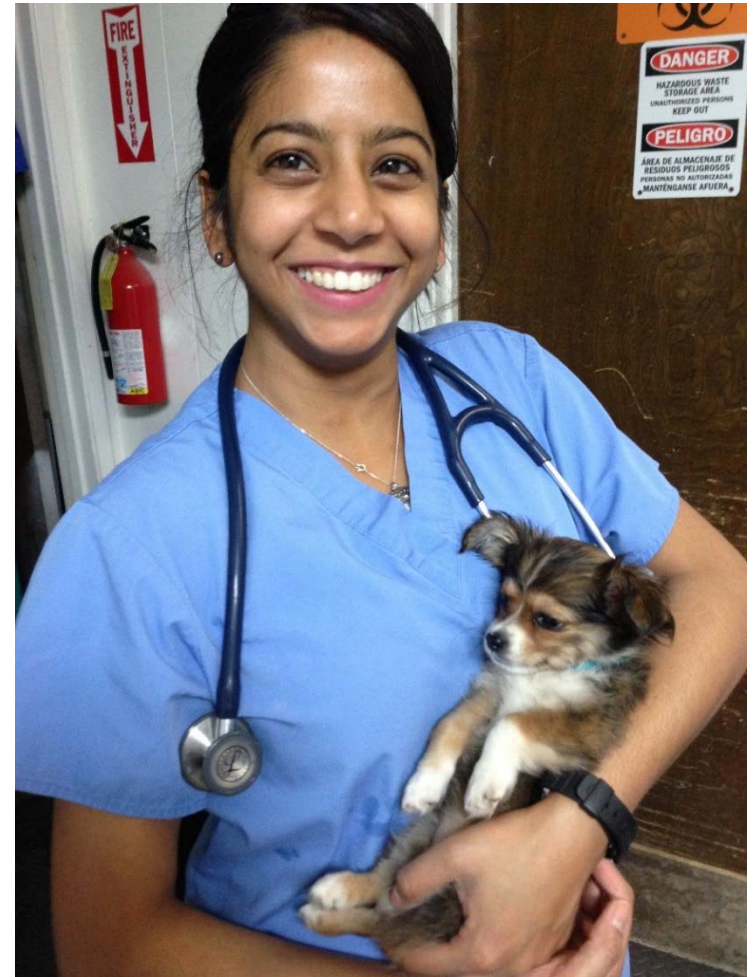
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Thank you for joining me today!
Feel free to contact me at:

Chumkee Aziz, DVM
Senior Director, Shelter Medicine
ASPCA

sheltermedicine@aspca.org



Outline

1 Causes – Pathogens & Risk Factors

2 Diagnosis – Recognition & Identification

3 Management – Treatment & Prevention

Causes of Disease

PATHOGENS:

VIRUSES
BACTERIA



HOST FACTORS:

AGE
IMMUNE STATUS
DEBILITATION
STRESS

ENVIRONMENTAL FACTORS:

STRESS
POPULATION DENSITY
HOUSING
SANITATION
VENITILATION/AIR QUALITY

Pathogens

Herpesvirus

Calicivirus

*Chlamydophila
felis*

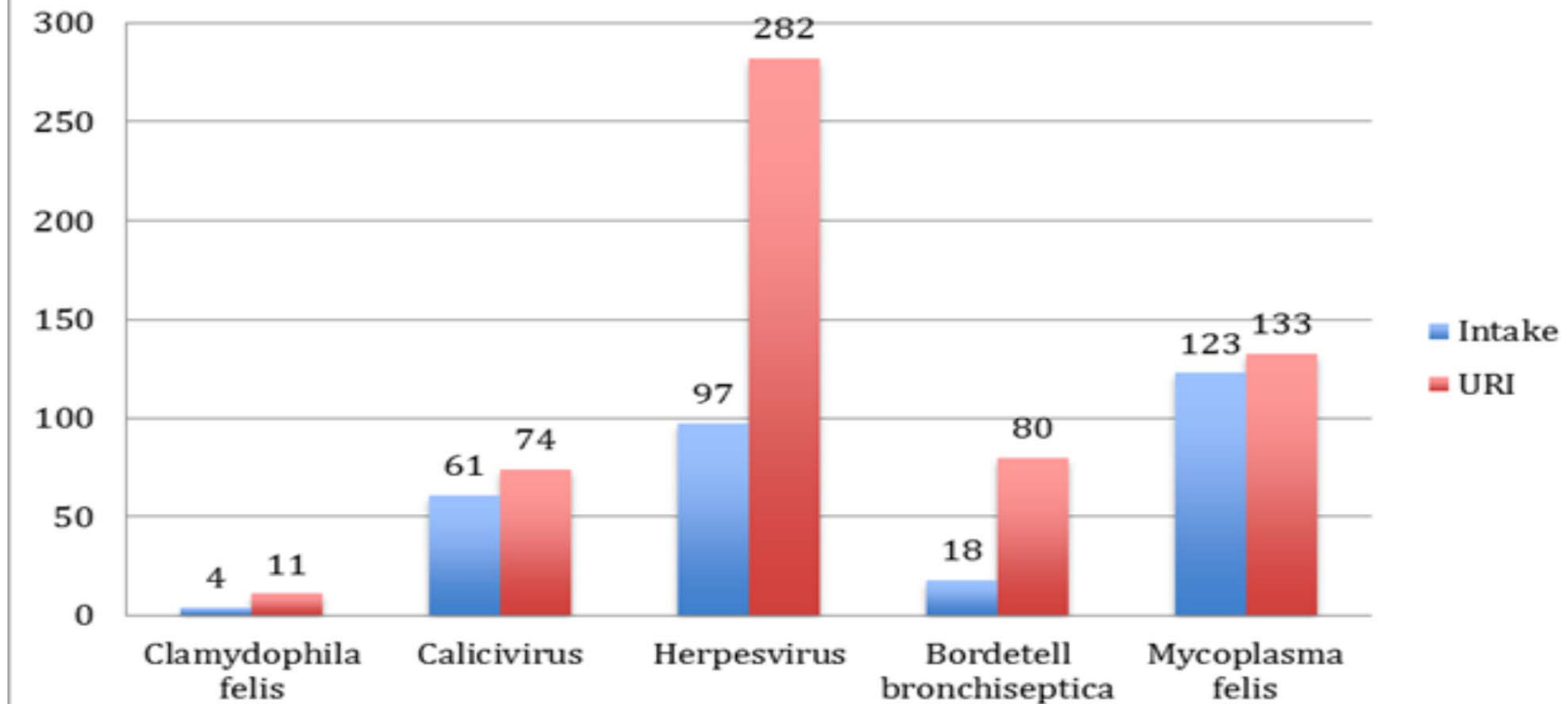
*Mycoplasma
felis*

*Bordetella
bronchiseptica*

Influenza

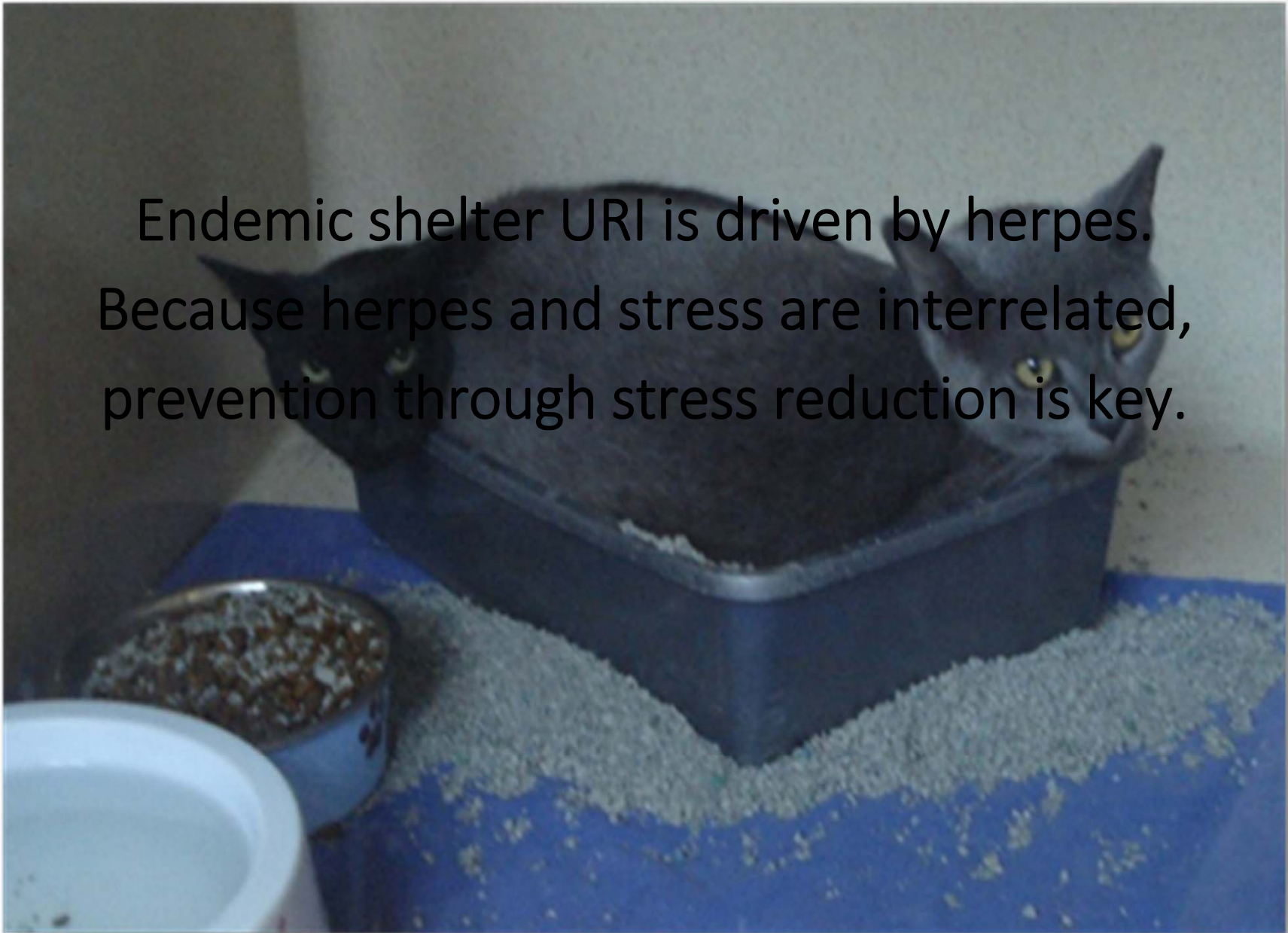
R-PCR Results For Shelter Cats at Intake and with URI

Nov. 2008 - Oct. 2009
(Intake N= 373, URI N= 359)



Study performed by UC-Davis Koret Shelter Medicine Program

Endemic shelter URI is driven by herpes.
Because herpes and stress are interrelated,
prevention through stress reduction is key.



Transmission

- Reactivation by stress*
- Direct contact
- Fomites
- Droplet transmission up to 5 ft
- Aerosolization not as important



Photos: KSMP

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Disease Course - Herpesvirus

First timer

- Incubation = 2-6 d
- Shedding period = 14-21 d

Reactivated

- Lag phase = 4-11 d
- Shedding period = 1-13 d (avg 7 d)



Diagnosis of Disease

A close-up photograph of a cat's face, focusing on the nose and mouth area. The cat has light-colored eyes and white whiskers. There is a visible lesion on the bridge of the nose, characterized by overlapping, non-specific clinical signs, possibly a tumor or infection. The text "Overlapping, non-specific clinical signs" is overlaid on the image.

Overlapping, non-specific clinical signs

Photo: KSMP

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Suspect Clinical Signs

Oral Ulcers

- Calicivirus
- Herpesvirus
- Quaternary ammonium disinfectant toxicity

Limping or High Fever

- Calicivirus

Eye Ulcers

- Herpesvirus

Conjunctivitis but no nasal signs

- *Chlamydophila*
- *Mycoplasma*

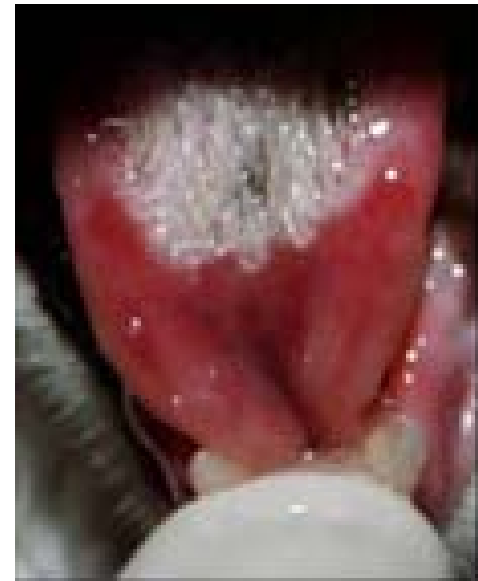
Oral Ulceration



Calicivirus



Herpesvirus



Quat toxicity

Diagnosis of URI

PCR

- Conjunctival & nasal swabs
- Collect during early infection (<7 days)

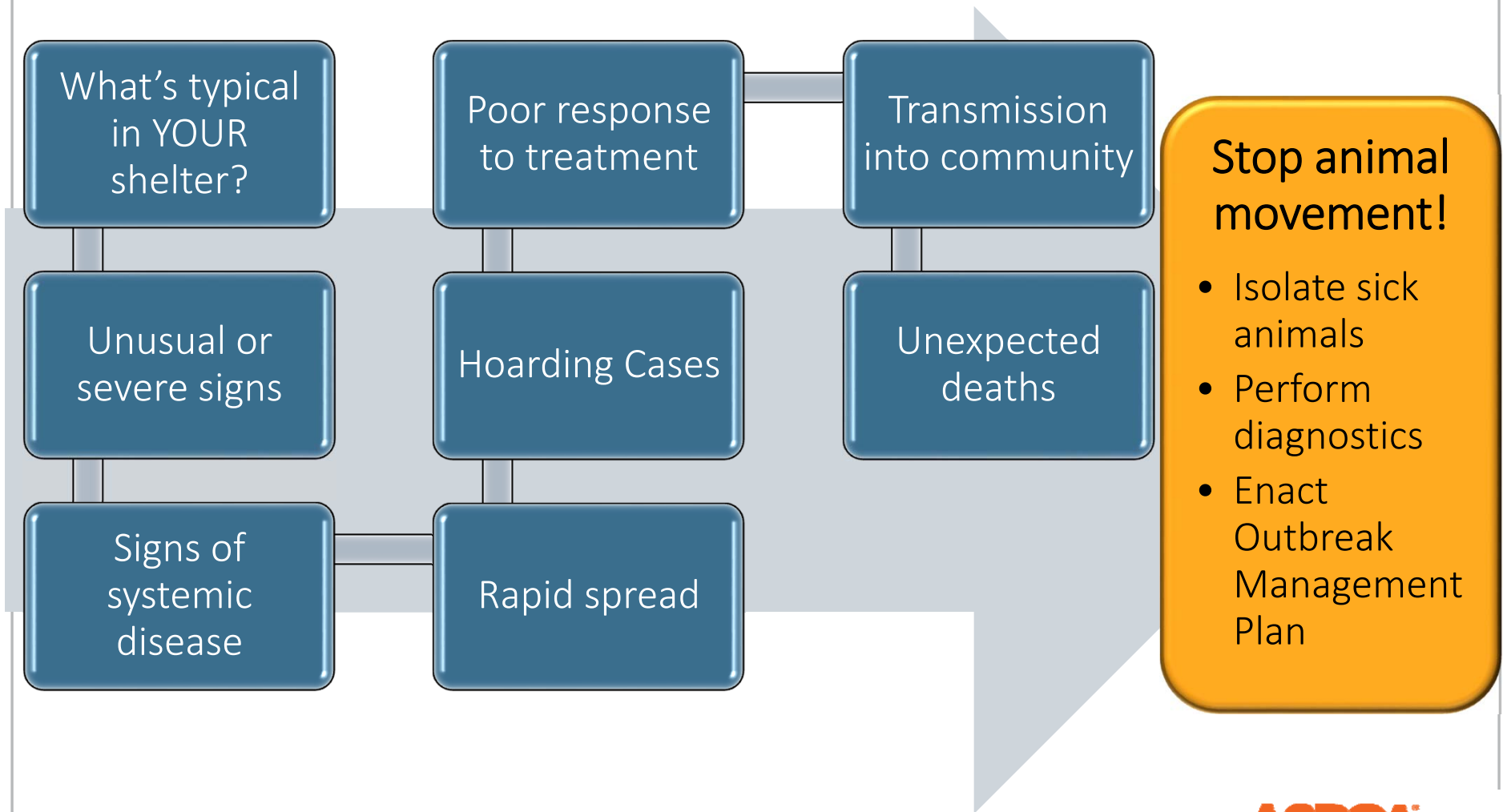
Culture & Sensitivity

- Bacterial pathogens

Necropsy

- Unexpected deaths
- Outbreak

When should I be *really* concerned?



Example: Influenza A (H3N2)

April 2016:

- Previous reports of clinical signs in cats from Korean literature
- H3N2 outbreak in ALL dogs at Indiana shelter
- No direct contact between cats & dogs
- Suspect sign: some cats are drooling
- 9 cats tested positive for H3N2 in 1 ward
- Nasal discharge, congestion, lip smacking
- Did not transmit through shelter

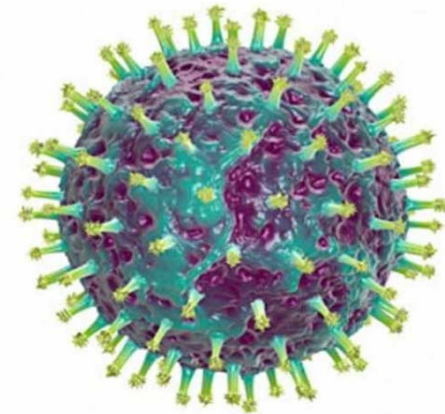


Photo: WKSU

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Example: Influenza A (H7N2)

Winter 2016

- Adult cat euthanized for severe respiratory disease tested positive for canine H3N2 in NY shelter
- Something was not adding up: not all dogs in shelter had flu
- Eventually discovered cats had H7N2 low pathogenic avian flu
- Nasal discharge, congestion, persistent cough
- Wave of infection spread in cats
- Off-site quarantine/isolation of 500 cats
- No dogs affected



Photo: ASPCA

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Management of Disease

Treatment

Minimize patient stress & discomfort

Minimize handling when treating

Treat bacterial infections

Maintain hydration

Promote nutrition

Supportive Care

Keep them separate, comfortable, clean & nourished

- House in quiet isolation space
- Consider pain medication
- Clear away facial discharge
- Encourage eating
- Provide soft bedding

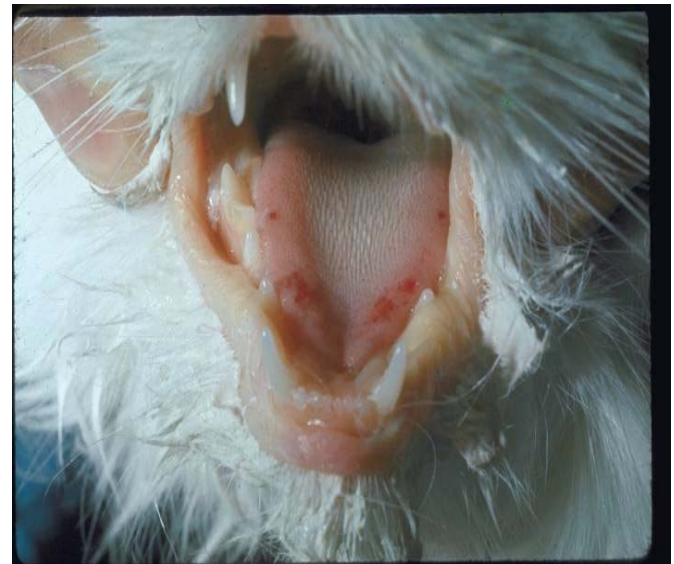


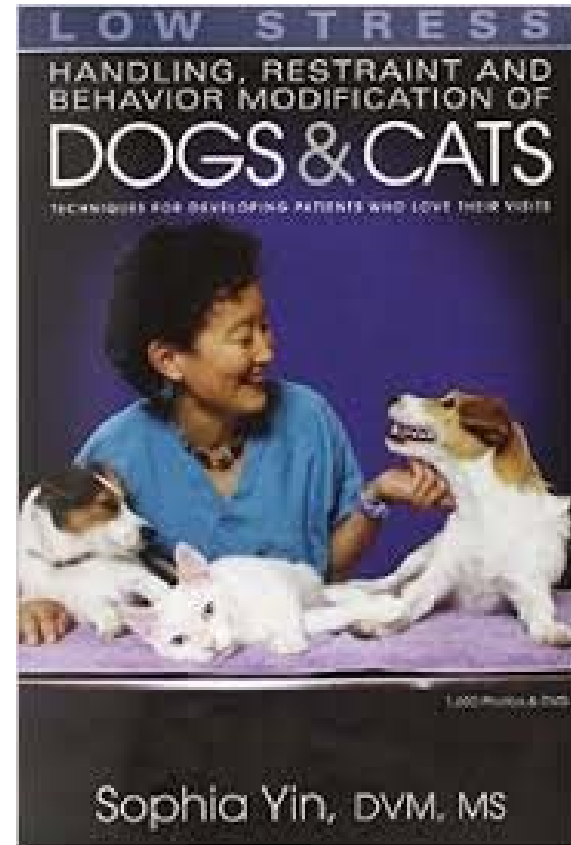
Photo: KSMP

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Supportive Care

Low stress

- Familiar routine
- Familiar caregiver
- Spot clean
- Don't move around/treat in cage
- Avoid unproven treatments (lysine, nebulizing)



Treatment Course

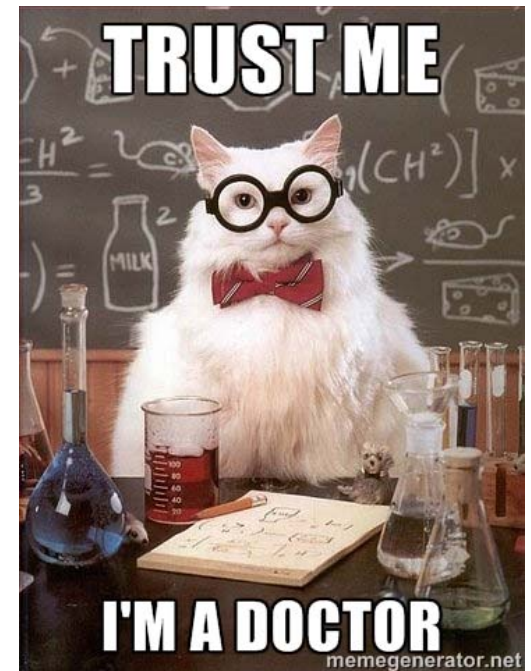
Provide clearly written SOPs for staff

Stop treatment once signs resolve

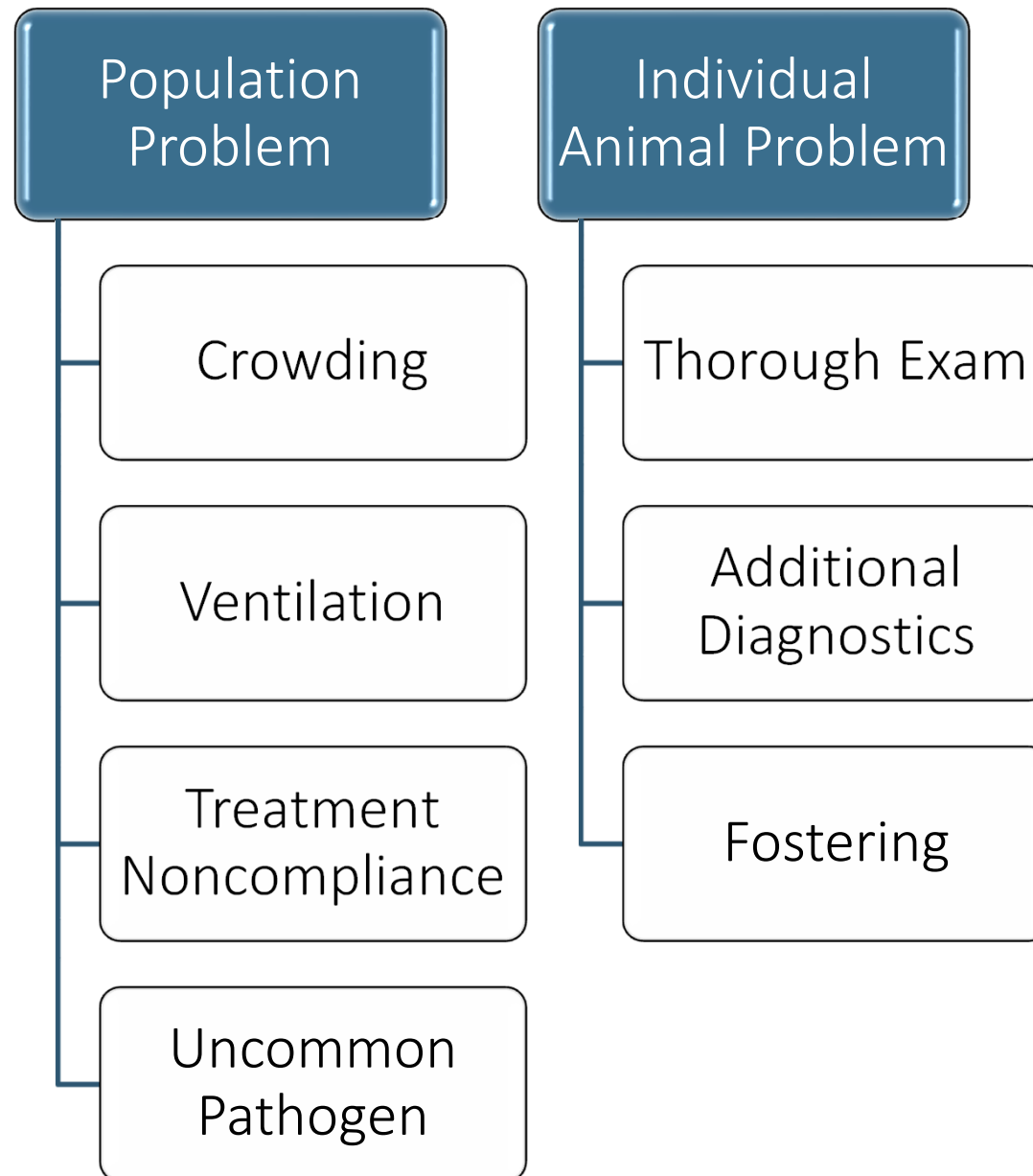
- Must monitor daily

Return to adoptions once signs resolve

- Significantly reduced shedding



If signs are not resolving, consider:



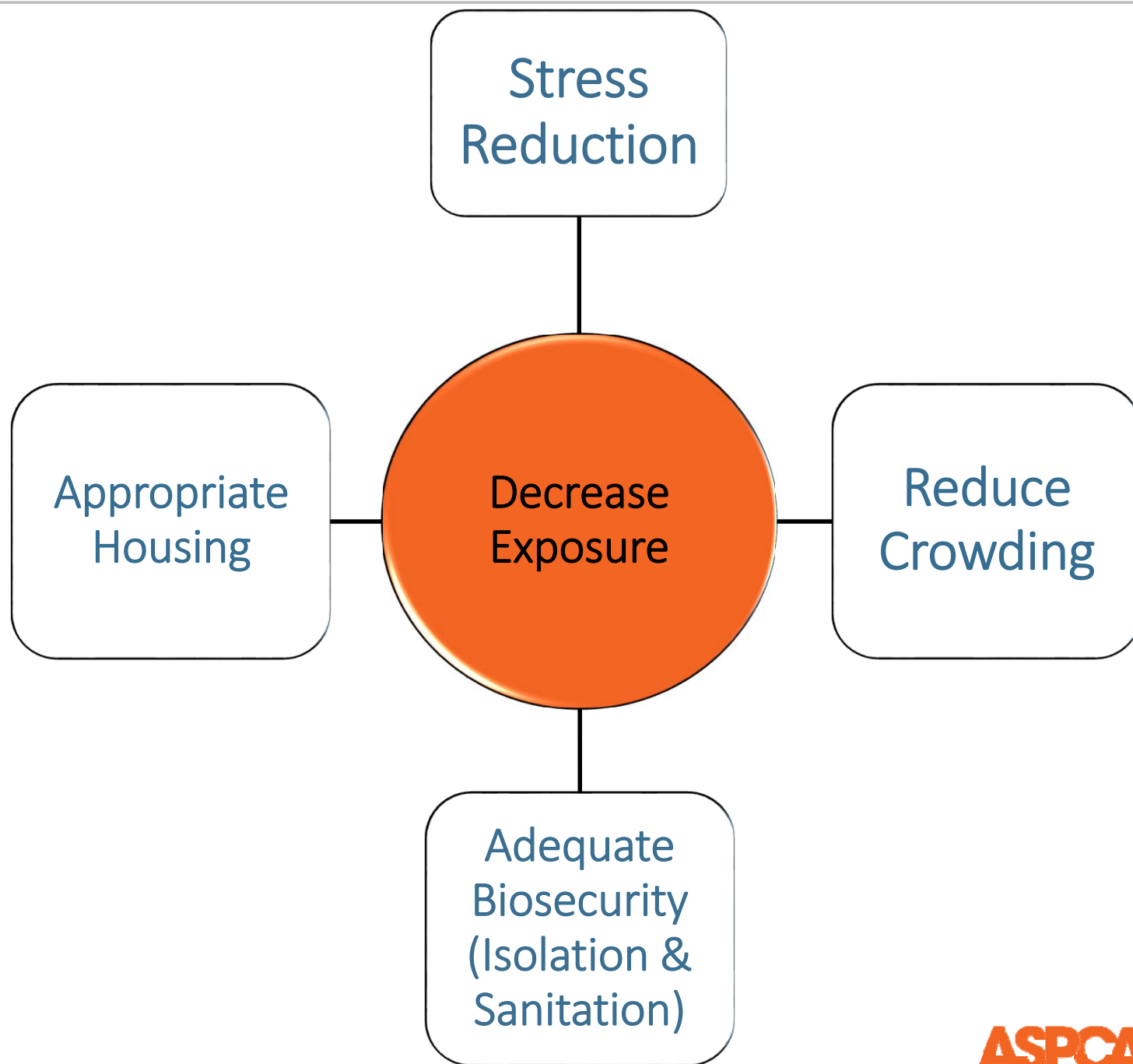
Prevention

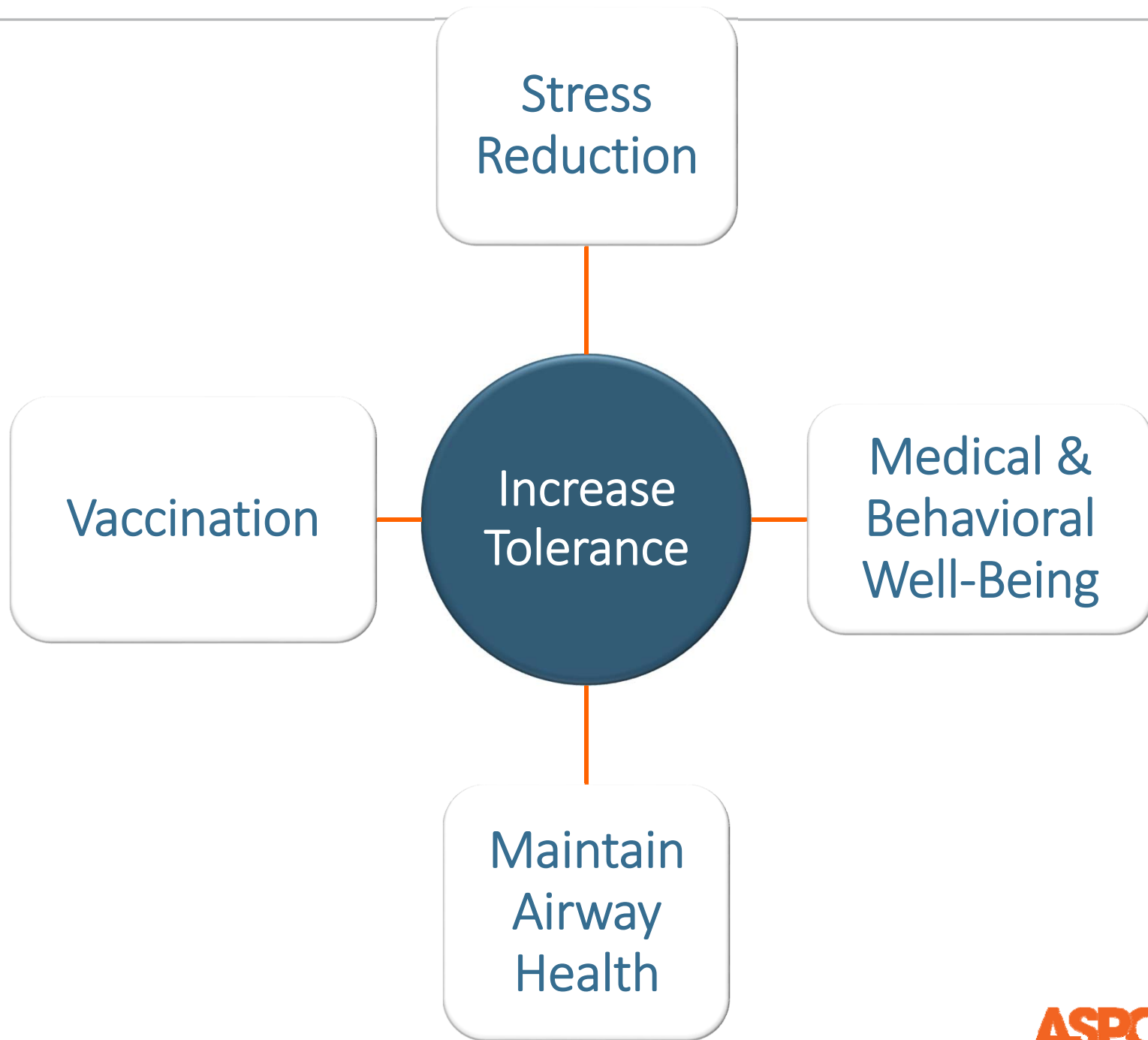
1

Decrease Exposure

2

Increase Tolerance



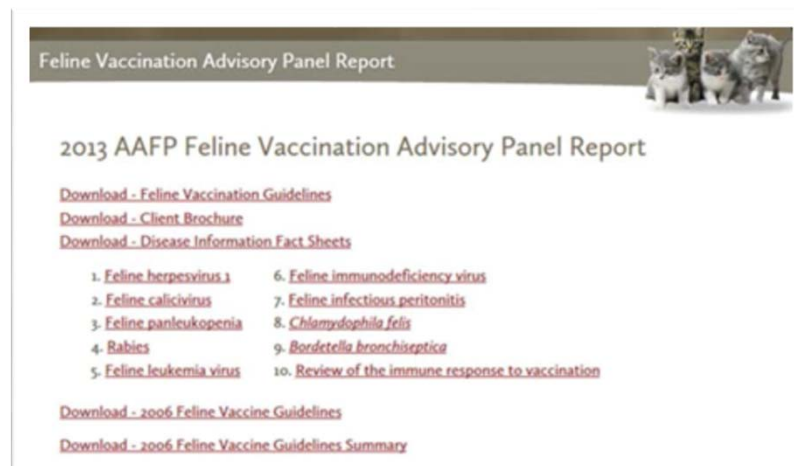


Vaccination

Vaccines for herpes and calici reduce severity & duration of disease

Injectable modified live virus FVRCP for all > 4 wks

- At or prior to intake
- Revaccinate kittens every 2-3 weeks until 18-20 weeks old
- Booster adults once in 2 weeks



Other Vaccinations?

Intranasal FVRC

- Conflicting evidence of effectiveness in shelter
- Potential uses: outbreak, chronic patient, animals < 4 wks' age?
- NEVER use as substitute for injectable FVCRP

Bivalent Calicivirus

- Killed vaccine → delayed onset of protection



Photo: Bahrain
Stray Cat

Biosecurity: Isolation + Sanitation

Clinically affected cats shed highest loads of pathogen → isolation required

Separate gown/smock and gloves when in URI iso

Disinfectants?

- Most products will inactivate herpes
- Calici is hardier
- Minimize irritants





Prevention through Stress Reduction

Photo: Etsy

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Cat Stressors

Changes in
routine

Reduced
positive
social
contact

Increased
negative
social
contact

Unfamiliar noises/odors

Disruption
of social
bonds

Confinement in unfamiliar
places

Being
moved

What Can We Do?

Reduce stress by upholding the five freedoms of animal welfare for every animal in the shelter



Five Freedoms

- 1. Freedom from hunger and thirst**
by ready access to fresh water and diet to maintain health and vigor
- 2. Freedom from discomfort**
by providing an appropriate environment including shelter and a comfortable resting area.
- 3. Freedom from pain, injury or disease**
by prevention or rapid diagnosis and treatment
- 4. Freedom to express normal behavior**
by providing sufficient space, proper facilities and company of the animal's own kind
- 5. Freedom from fear and distress**
by ensuring conditions and treatment which avoid mental suffering

Reproduced under the terms of short-term license, UK, Farm Animal Welfare Council

How Do We Ensure the 5 Freedoms?

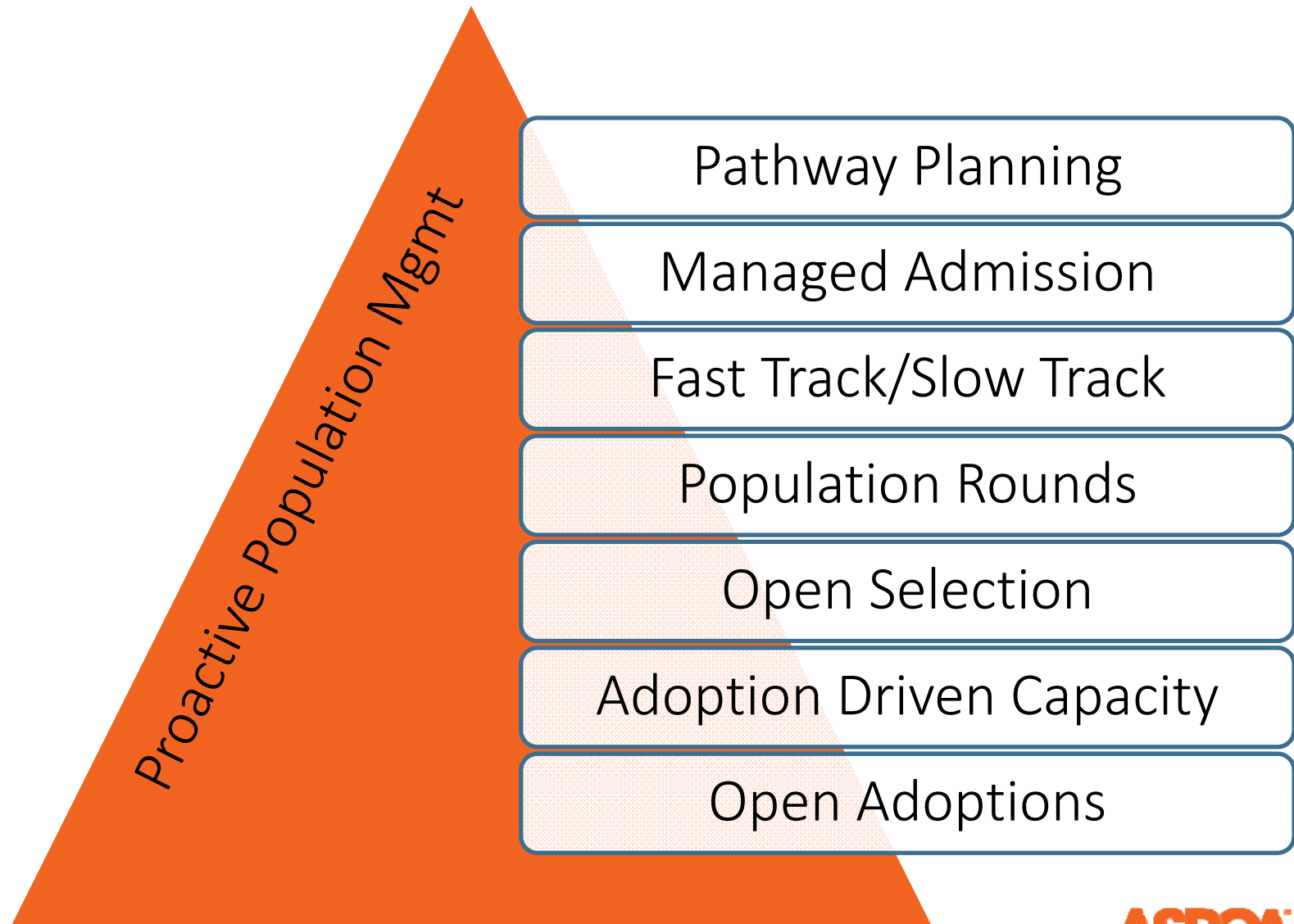
Match the number of animals cared for at any one time with the capacity required to assure the 5 freedoms for every animal



Photo:
FactRetriever.com

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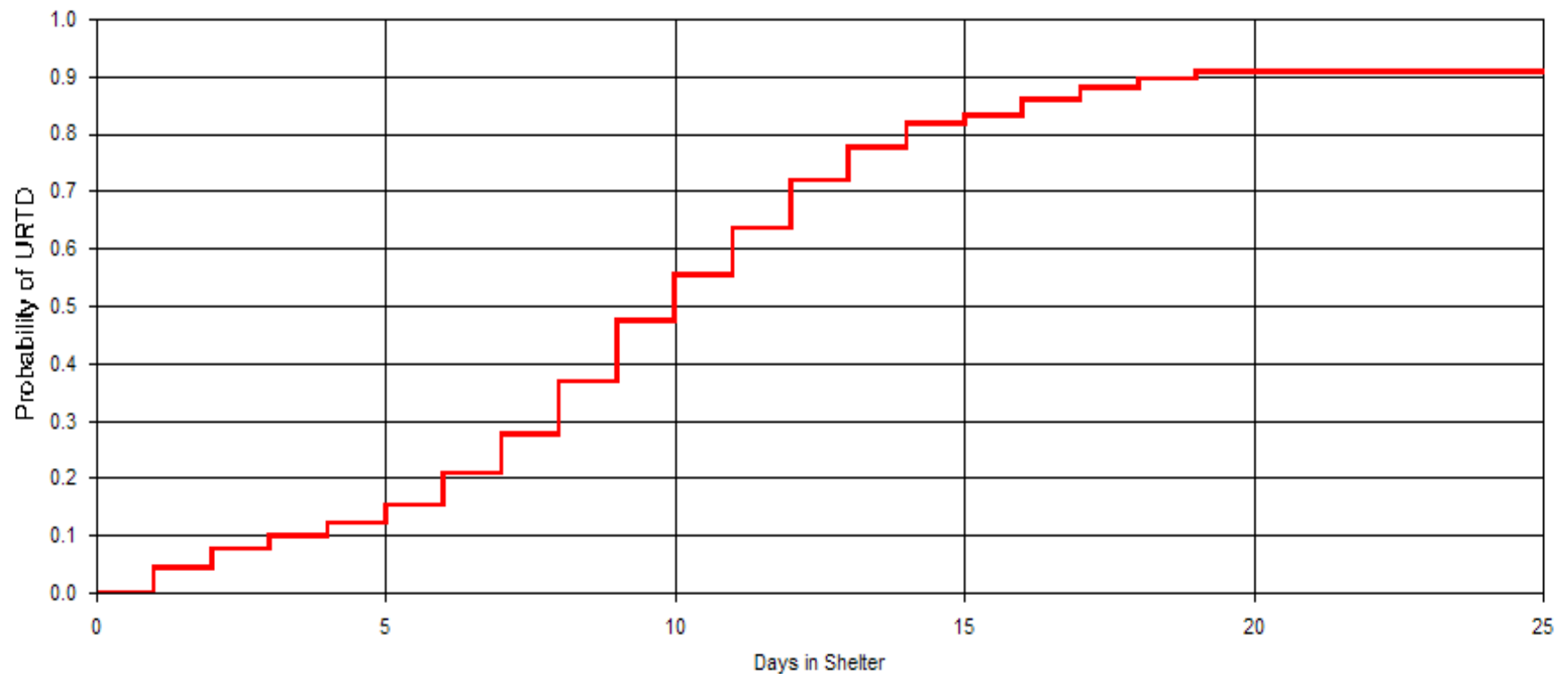
Stay within capacity to provide 5 Freedoms



URI & Length of Stay

Probability of URTD by Time in Shelter

All Cats



Dinnage, J. D., J. M. Scarlett, et al. (2009). "Descriptive epidemiology of feline upper respiratory tract disease in an animal shelter." J Feline Med Surg.

Macro-environment

Separation of species

Noise control

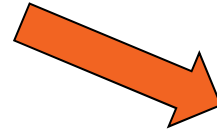
Lighting

Air Quality/Odors

Routine care/caregivers

Prevent unnecessary handling

Macro-environment



Micro-environment

Sufficient Space

Hiding Spots

Interior Décor for Comfort

Enrichment

Micro-environment

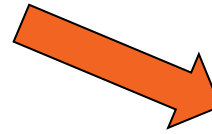


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Sufficient Space

- 11 ft²/cat - single
- 18 ft²/cat - communal
- Allow for stretching & posturing



AT LEAST TWO FEET DISTANCE BETWEEN CATS' FOOD/WATER, BEDDING AND LITTER*

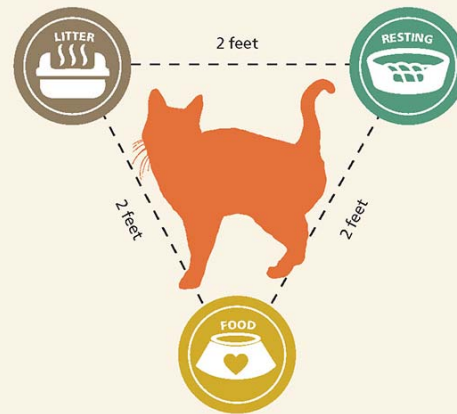
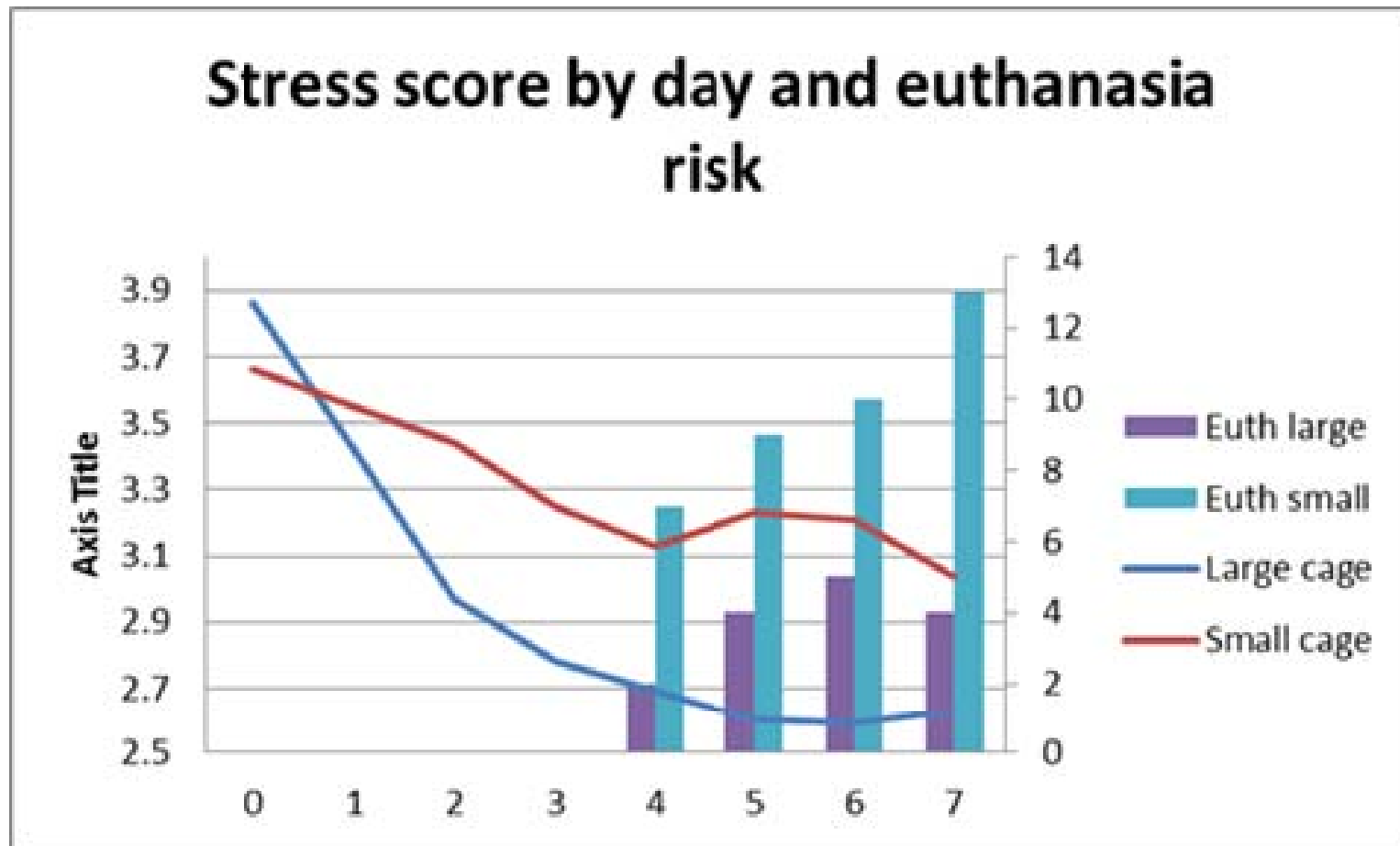


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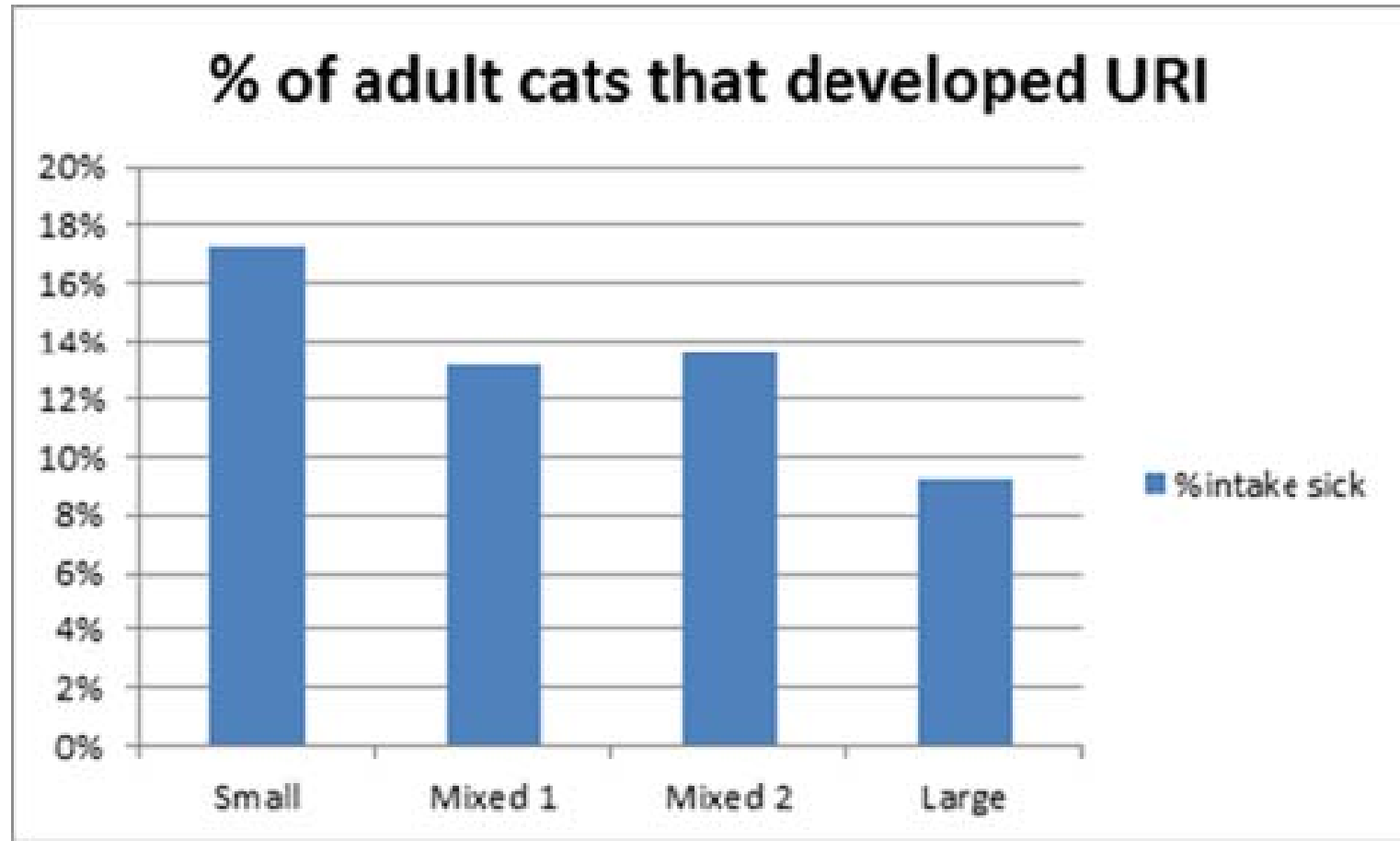
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Feline Housing Study - pending from UC-Davis



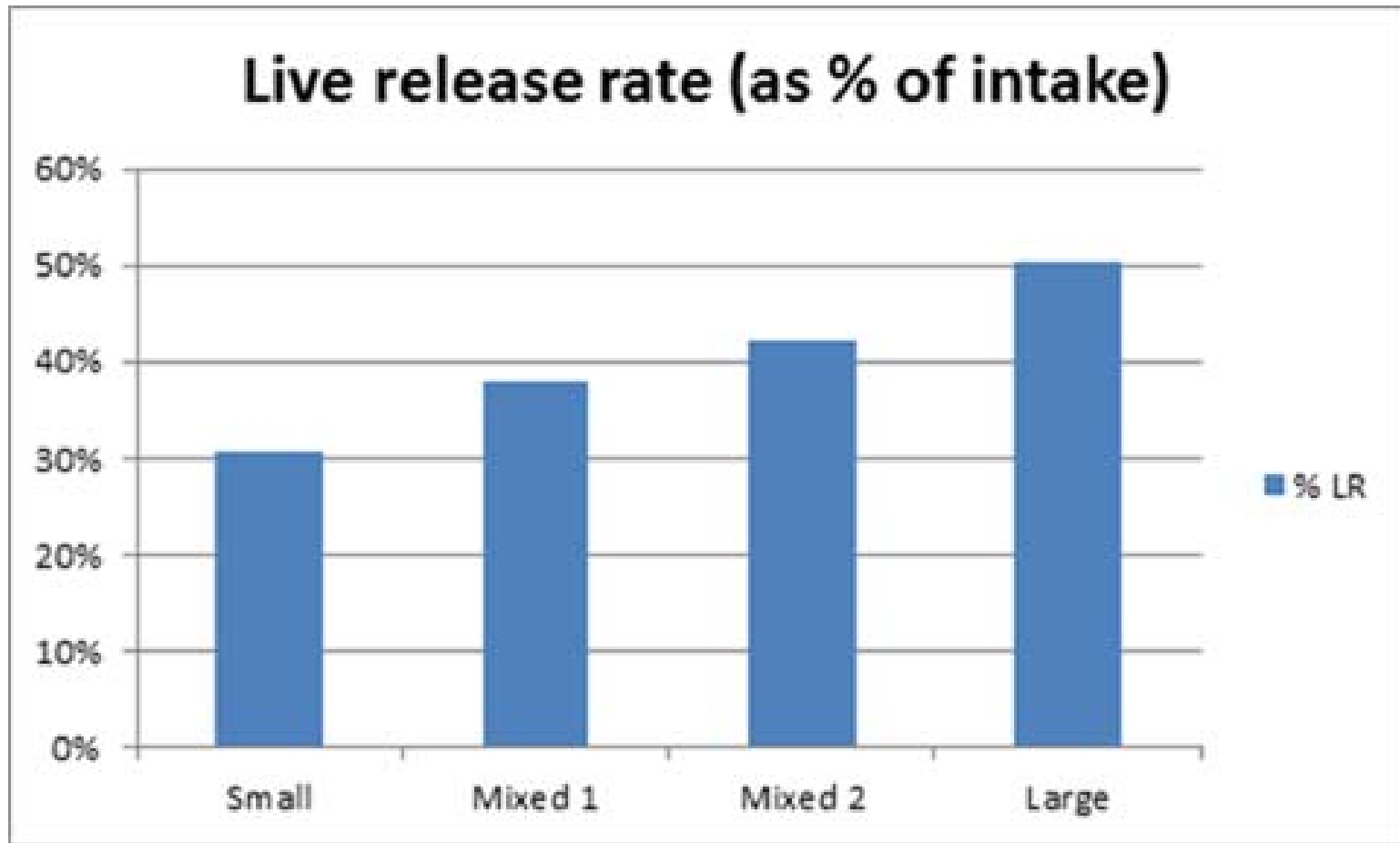
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Hiding Places



Photo: KSMP

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Hiding Places

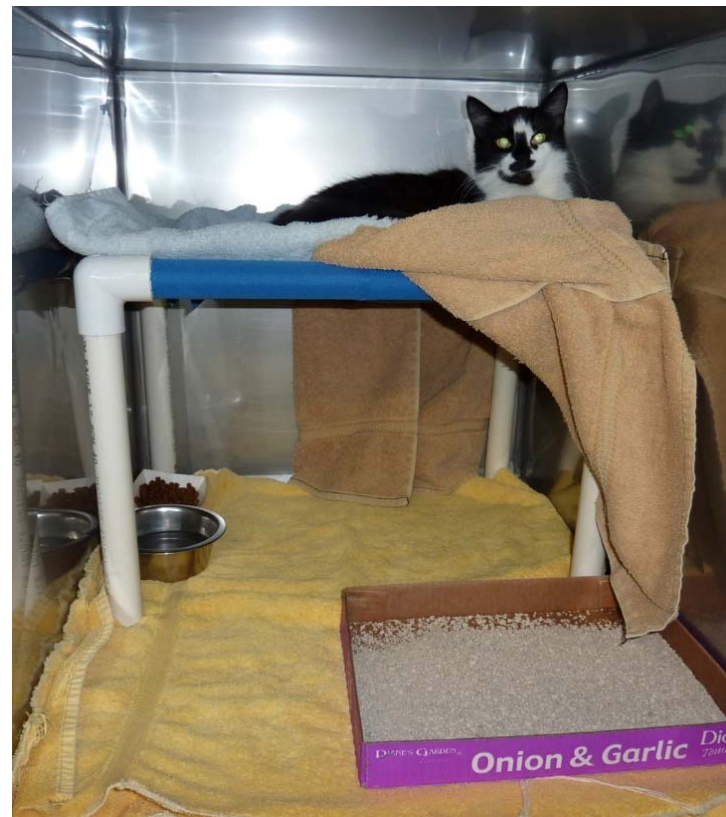


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Interior Decor for Comfort

Deeper & longer sleep → 3" soft bedding

Provide both firm/soft

Don't wash bedding daily unless needed



Enrichment

- Toys
- Rewards-based training/interactions
- Scratch pads
- Sensory stimulation
- Out of cage time

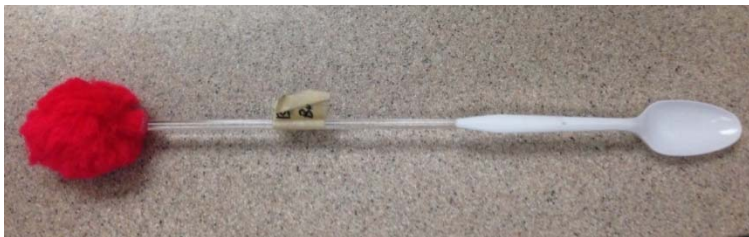
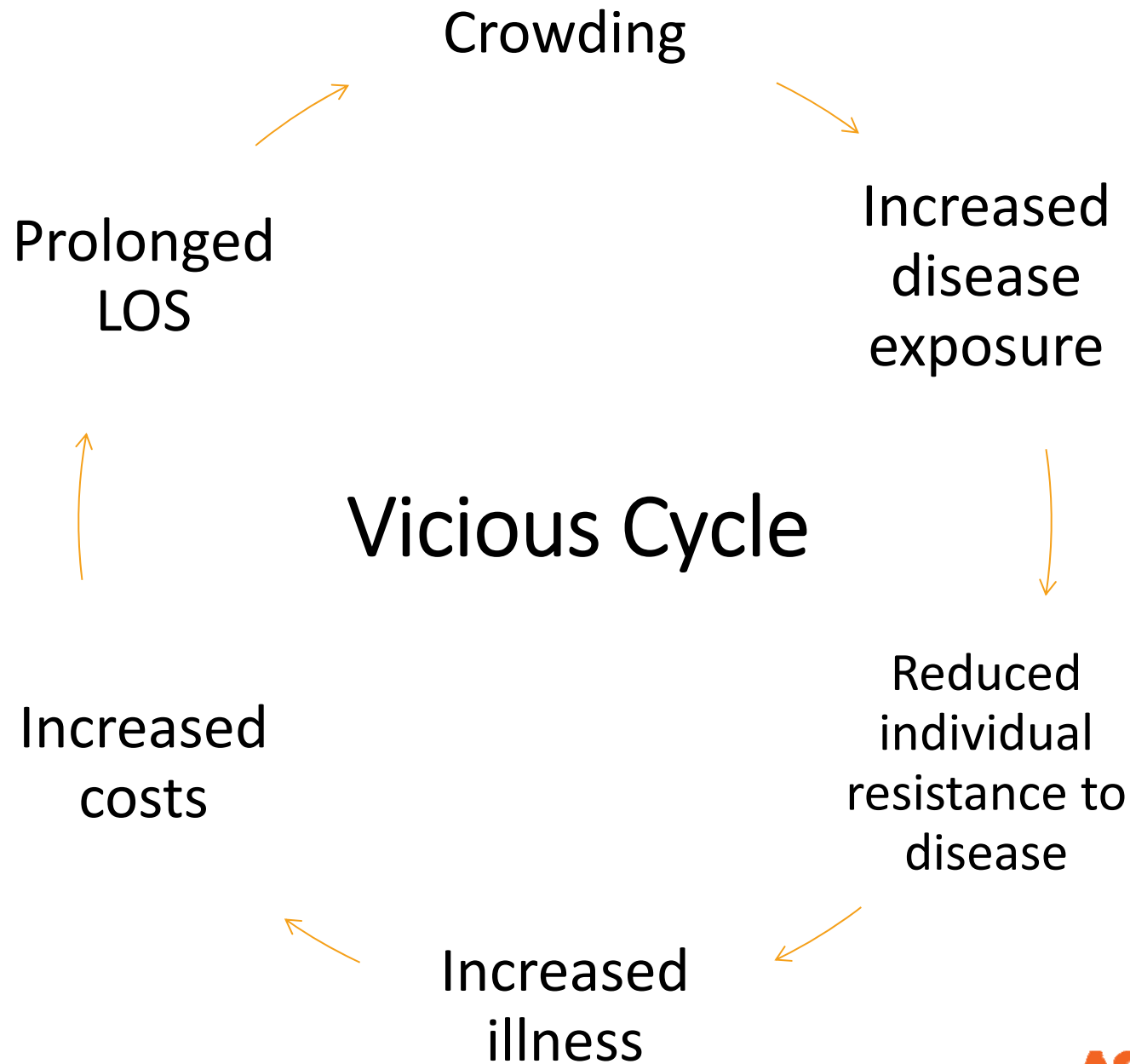


Photo: Jackson Galaxy Foundation **ASPCA**pro

Group Housing

- 18ft² floor space/cat
- Smaller groups
- Healthy, social adults
- Resources widely distributed
- Must monitor individual and group dynamics





THANK YOU!

