



Best Friends National Shelter Medicine

LEARNING OPPORTUNITIES AT SHELTER MEDICINE BOOTH
IN THE EXHIBIT HALL

FRIDAY February 21, 2025 from 1 to 2 pm

FIP Q&A

SATURDAY February 22, 2025 from 1 to 2 pm

CPR Training for HQHVSAN Settings



Scan the QR code for our contact form or email us at:
sheltermedicine@bestfriends.org





 **Best Friends**
National Conference

Stop the Sniffles! Feline Upper Respiratory Disease Management

Erin Katribe, DVM, MS, DABVP (Shelter Medicine)

Director, National Veterinary Programs
Best Friends Animal Society

**Let's make history for homeless pets.
#Bring2025Home**

OVERVIEW

- Clinical signs
- Pathogens
- Transmission
- Risk factors
- Diagnosis and testing
- Treatment
- Prevention



FELINE URTD IN SHELTERS

- Variable rates across shelters
- Numerous possible pathogens
- Most is due to **viruses**



CAUSES OF URTD

- **Feline herpesvirus (FHV-1)**
- **Feline calicivirus (FCV)**
- *Mycoplasma* species
- *Chlamydia felis*
- *Bordetella bronchiseptica*
- Other bacteria

~80-90% of
shelter URTD



FELINE HERPESVIRUS (FHV-1)

- Latency in ~80% of cats
- Stress → reactivation
- Will shed virus



FELINE CALICIVIRUS (FCV)

- Multiple strains, rapidly mutating
- Oral/lingual ulcers
- Limping kitten syndrome +/- fever
- Carrier state with shedding
- Virulent systemic FCV
 - High mortality
 - **Factors: crowding, stress**
 - **RARE!**



CLINICAL SIGNS

- Depend on pathogen(s), strain and cat
- Asymptomatic
- Eye/nasal discharge
- Eye ulcers
- Conjunctivitis
- Oral/facial ulcers
- Lameness (FCV)



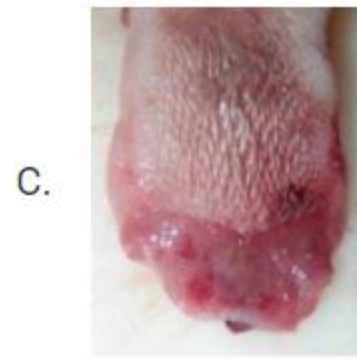
WE CAN'T DIAGNOSE THE SPECIFIC PATHOGEN BASED ON CLINICAL SIGNS ALONE!



FCV

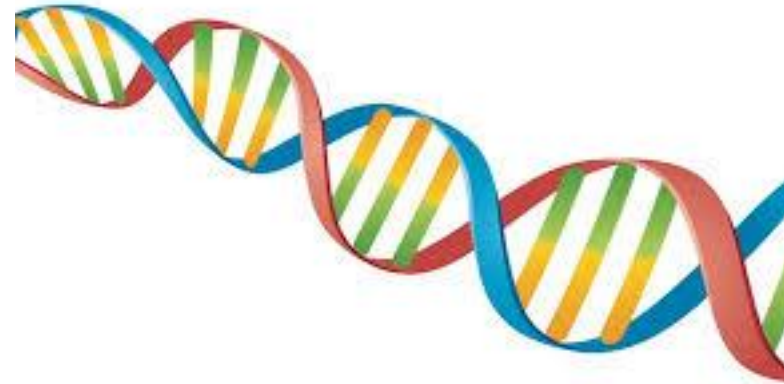


Disinfectant
toxicity



FHV-1

DIAGNOSIS



- PCR testing
 - Must send out to reference lab
 - **Can find pathogens in healthy cats!**
 - False negative results

Will this test change what we do?

TRANSMISSION

- Saliva and oculonasal discharge
- Direct contact
- (In droplets up to 4 feet)
- **Fomites!**
- Persistence in environment
 - FHV-1: ~18 hours
 - FCV: **28 days**
- Existing infection recrudesces



**Your face is a
fomite!!**

TRANSMISSION

- Shedding:
 - **Reduced after signs have resolved**
- **Many cats are carriers**
- **This is a disease of STRESS**



URTD PATHOGENS IN SHELTER CATS

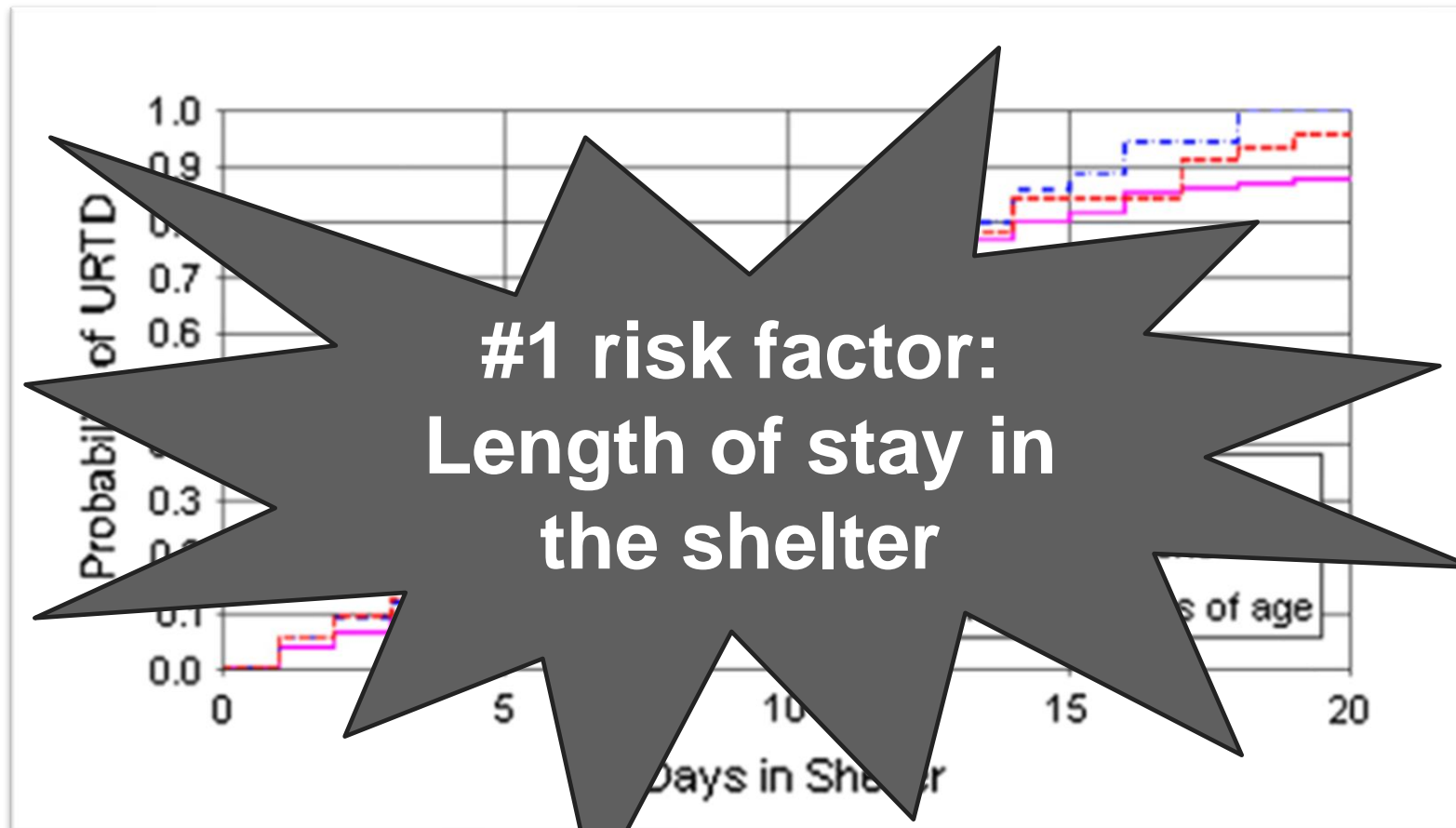
PREVALENCE IN HEALTHY CATS ON INTAKE

Table 4. PCR pathogen prevalence in healthy cats at intake.

Shelter	Cats tested	Intake Cat PCR Positives					Yearly URI Rate (URI cases/1000 at risk days)
		<i>Chlamydomphila felis</i>	FCV ^a	FHV-1 ^b	<i>Bordetella bronchiseptica</i>	<i>Mycoplasma felis</i>	
A	60	1.6% (1)	15.0% (9)	35.0% (21)	3.3% (2)	28.3% (17)	32.3
B	80	1.2% (1)	15.0% (12)	23.7% (19)	3.8% (3)	28.7% (23)	31.8
C	68	(0)	22.0% (15)	26.5% (18)	2.9% (2)	38.2% (26)	13.3
D	63	1.6% (1)	11.1% (7)	1.6% (1)	(0)	31.7% (20)	5.7
E	58	(0)	6.9% (4)	36.2% (21)	10.3% (6)	6.9% (4)	0.7

Wagner, Kass, Hurley, 2018.

INDIVIDUAL RISK FACTORS



Dinnage, Scarlett, Richards. 2009

POPULATION RISK FACTORS

- Crowding
- Ventilation
- Sanitation
- Floor space per cat
 - >8 feet per cat is protective
- Kennel moves



CASE: FELINE URI OUTBREAK

- Many cats/kittens with URTD
- Oral ulcers
- 5 kittens over a few days → rapidly declined or found dead
- Shelter reaches out for help with “calicivirus outbreak”

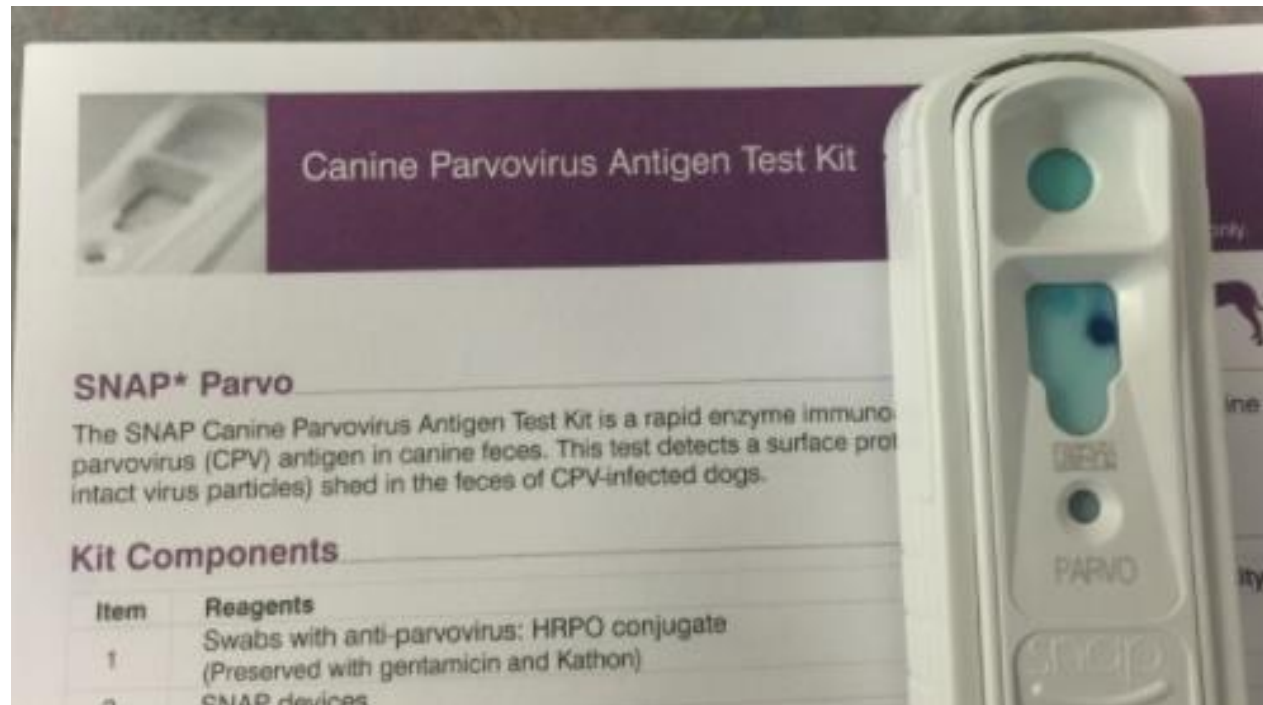
CASE: FELINE URI OUTBREAK

- What next?
- What questions would you ask?
- PCR testing?
- Necropsy



SUDDEN DEATH IN SHELTER CATS

**Feline
panleukopenia
(aka feline
parvovirus)**



TELL US ABOUT YOUR CAT HOUSING



WHAT'S YOUR AVERAGE LOS FOR CATS?

CASE: FELINE URI OUTBREAK

- Average LOS for cats: 30 days
- Housing
- Quat disinfectant



Quaternary ammonium compounds



ACTIVE INGREDIENTS

n-Alkyl (60% C ₁₂ , 30% C ₁₄ , 5% C ₁₆ , 5% C ₁₈)	
dimethyl benzyl ammonium chlorides	0.105%
n-Alkyl (68% C ₁₂ , 32% C ₁₄)	
dimethyl ethylbenzyl ammonium chlorides	0.105%

INERT INGREDIENTS

Total	99.782%
	100.000%

WHAT'S REALLY GOING ON?

Ineffective sanitation

- Panleuk
- Quat toxicity

URTD due to...

- Long LOS
- Suboptimal housing
- **STRESS!**



CASE: FELINE URI AND PANLEUK OUTBREAK



CASE: “POTASSIUM”

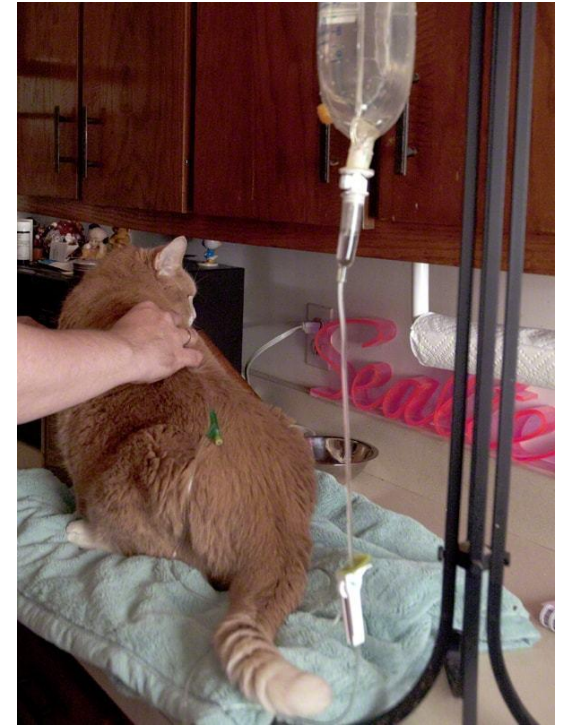
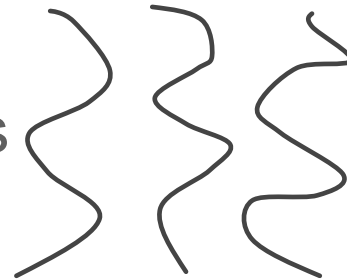
- 4-month-old male neutered DSH
- Healthy upon intake to shelter
- Developed clear nasal and ocular discharge at 7 days



TREATMENT

What common therapy is NOT on this list?

- Topical eye medication: erythromycin
- Fluids
- Nutrition (stinky food!), appetite stimulants
- Nebulization/humidifier
- Pain medication for ulcers
- Anti-inflammatories for fever, limping
- Cleaning crusts away



CASE: “POTASSIUM”

- Progressed to mucopurulent discharge



TREATMENT

- Antibiotics
 - Indications
 - Purulent discharge
 - Lower respiratory signs
 - Systemic illness
 - **Doxycycline**



CASE: “POTASSIUM”

- Doxycycline 10mg/kg once daily
 - 2 rounds
 - Improvement during treatment
 - Signs recurred, lingering congestion
- Compounded: replace after 7 days

> J Am Vet Med Assoc. 2013 Jun 15;242(12):1674-8. doi: 10.2460/javma.242.12.1674.

Doxycycline concentration over time after storage in a compounded veterinary preparation

Mark G Papich¹, Gigi S Davidson, Lisa A Fortier

Affiliations + expand

PMID: 23725430 DOI: 10.2460/javma.242.12.1674

[Free article](#)

Abstract

Objective: To determine the concentration of doxycycline compounded from doxycycline hyclate



	Amoxicillin/ clavulanic acid	Cefovecin	Doxycycline	Clarithromycin	Fluoroquinolones
<i>Bordetella bronchiseptica</i>	✓	✗	✗	?	✓
<i>Chlamydia felis</i>	✗	✗	✓	✗	✓
<i>Mycoplasma</i> spp.	✗	✗	✓	?	✓
Secondary bacterial pathogens	✓	✓	?	?	✓

Why don't we start with this one?

Lappin et al. 2017

TREATMENT

- Antivirals
 - **No clear evidence-based recommendations**
 - **NOT as part of protocols**
 - Maybe for individual cats
 - Famciclovir 40-**90** mg/kg q**8-12**h
 - Topical ophthalmic: cidofovir q12h, idoxuridine q4-6h

- L-lysine **not** recommended



TREATMENT GUIDELINES

- Goal of treatment
- Duration based on response
 - **Until after clinical signs resolve**
 - If no improvement, reassess
- Monitoring

Animal ID _____												Case # _____				DAILY OBSERVATION SHEET				Note your observations by writing your initials in the appropriate boxes below.			
Date	AM		PM		AM		PM		AM		PM		AM		PM		AM		PM				
APPETITE DRY																							
Normal																							
Nibbling																							
Not eating																							
APPETITE WET																							
Normal																							
Nibbling																							
Not eating																							
STOOLS																							
Formed																							
Diarrhea																							
Bloody																							
None																							
URINE																							
Normal																							
Excessive																							
Bloody																							
Straining																							
None																							
VOMITING																							
None																							
Food																							
Bile																							
Hairball																							
Other:																							
COUGHING																							
Yes																							
No																							
SNEEZING																							
Yes																							
No																							
NASAL DISCHARGE																							
None																							
Clear																							
Cloudy/Opaque/Green/Yellow																							
Blood																							
EYES																							
Clear																							
Pus/mucus																							
Red/irritated																							
Swollen																							
BEHAVIOR																							
Friendly																							
Scared/shy																							
Listless/depressed																							
Aggressive or Feral																							
Urine outside litterbox																							
Stool outside litterbox																							
Notes:																							

ISOLATION?

- Moving causes more stress
- Common strategy in shelters:
 - Treat in place (in-kennel isolation) for mild cases
 - More severe cases to medical ward



FOSTER CARE

- Closer monitoring
- Reduced stress
- Socialization (especially for kittens!)
- Risk to other cats in the home?



Spay or neuter surgery?

- **Get them out of the shelter!**
- Intubation
- Adopter/foster counseling – may get worse



CASE: “POTASSIUM”

- Plan for neuter during treatment
- Adoption promotion



AVAILABLE AND
VISIBLE TO
ADOPTERS!

It's time for the

SPRING SNEEZIN' CHALLENGE!



SUNDAY, APRIL 13
10 a.m. - 5 p.m.

Cats with a kitty
cold are **FREE!**
You'll also get free
medication, cat
food & a blanket.

All other cats have 1/2
price adoption fees.

**Come adopt,
rescue or foster a
sneezy cat in need!**

111 W. Hunting Park Ave.
Philadelphia, PA 19140
267-385-3800 acctphilly.org



REFRACTORY CASES

- Other differentials
 - Polyp
 - Chronic, from nasal turbinate destruction
 - Retroviral disease (FeLV, FIV)
 - Dental disease
 - Neoplasia, fungal
 - Other airway abnormalities
- Consider polyp exam, +/- therapeutic flush



Potassium's
polyp



PREVENTION



- Vaccination – but does **not** prevent infection
- Strategies for prevention:
 - Vaccination
 - Biosecurity and sanitation
 - **Improved housing**
 - **Population management to reduce stress and length of stay**

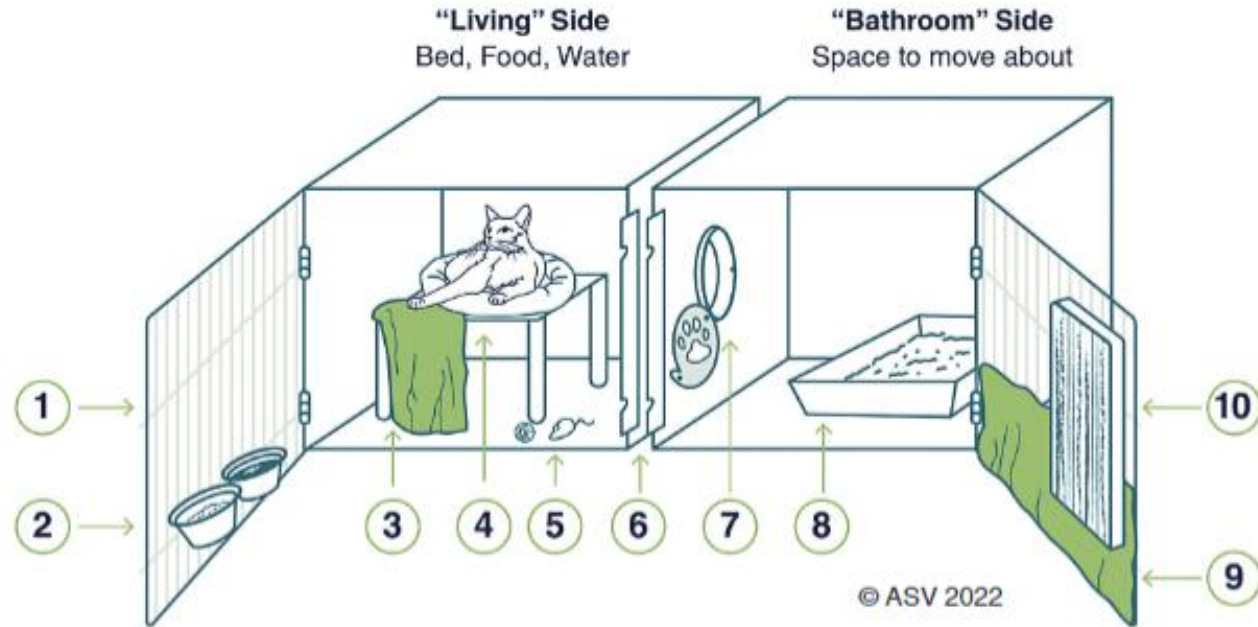


STRESS REDUCTION

- Reduce length of stay
- Minimize movement
 - Including for cleaning
 - **Spot clean**
- Separate from dogs



**Hiding spaces
are not
optional for
cats!**



- | | | | |
|--|---|---|--|
| 1. Open Bars <ul style="list-style-type: none">• Interaction• Ventilation | 3. Draped Towel <ul style="list-style-type: none">• Hiding place• Interaction choice | 6. Quiet latches and hinges | 8. Litter box <ul style="list-style-type: none">• Full size• No shelf above |
| 2. Food and water | 4. Raised Bed <ul style="list-style-type: none">• Soft resting place• Retreat space | 7. Portal <ul style="list-style-type: none">• Ease of daily care• Separation of spaces• Open except during cleaning | 9. Partial Cage Cover <ul style="list-style-type: none">• Retreat space• Interaction choice |
| | 5. Toys | | 10. Scratching Material |



LOW STRESS HOUSING



- Double-compartment
- > 8 sq. ft. of floor space
- Separate areas for eating and litterbox
- **Hiding space**
- Perch
- Enrichment



BUT WE'RE REDUCING THE NUMBER OF KENNELS BY HALF!



CAPACITY FOR CARE

The Veterinary Journal 227 (2017) 15–22



ELSEVIER

Contents lists available at ScienceDirect

The Veterinary Journal

journal homepage: www.elsevier.com/locate/tvj

Original Article

An observational study of the relationship between Capacity for Care as an animal shelter management model and cat health, adoption and death in three animal shelters

C.L. Karsten^{a,*}, D.C. Wagner^a, P.H. Kass^b, K.F. Hurley^a

^a Koret Shelter Medicine Program, School of Veterinary Medicine, University of California – Davis, One Shields Ave, VM: CCAH Room 214, Davis, CA 95616, USA

^b Department of Population Health & Reproduction, School of Veterinary Medicine, University of California – Davis, 4005 VM3B, Davis, CA 95616, USA

ARTICLE INFO

Article history:
Accepted 4 August 2017

ABSTRACT

Animal shelters struggle to function at their 'right size' in terms of physical staff

Capacity for Care



Less URTD



Decreased length of stay

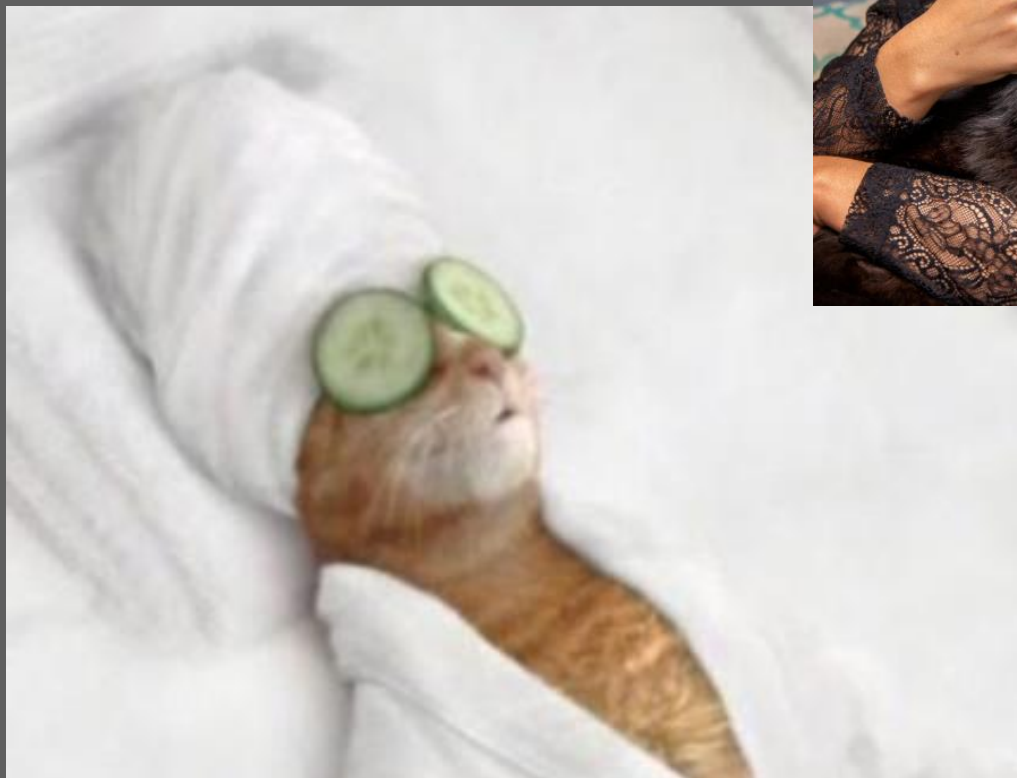


Less euthanasia



MORE LIFESAVING!!

KEY POINTS



Want to learn more? Need staff trainings?



Healthy from Intake to Outcome: Managing Infectious Disease in Shelters



Erin Katrube, DVM, MS, DABVP (Shelter Medicine)
Director, National Veterinary Programs
Best Friends Animal Society



Preventing Infectious Disease in Shelters

Erin Katrube, DVM, MS, DABVP (Shelter Medicine)
Best Friends Animal Society

How are diseases transmitted in shelters?

Erin Katrube, DVM, MS, DABVP (Shelter Medicine)
Best Friends Animal Society



NEED MEDICAL SUPPORT?

Contact us! We're here to help!



Request Medical
Assistance



Example Medical
Protocols and Job Aids



Thank you for attending

**Stop the Sniffles! Feline Upper
Respiratory Disease Management**

sheltermedicine@bestfriends.org

erink@bestfriends.org





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