

# **Beyond URI: Coping with Infectious Diseases Encountered in Large-Scale Cat Seizures**

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## **Introduction**

Large-scale cat seizures - whether from hoarding situations or failed animal sanctuaries - present complex infectious disease challenges. Shelters and veterinarians must be prepared to recognize, treat, and prevent further spread of disease. This handout summarizes key insights from a series of Florida cases involving more than 2,000 cats.

## **Audience Poll: Roles in Animal Welfare**

This presentation was developed for professionals and volunteers across animal welfare roles, including:

- Staff employed at animal shelters
  - Staff employed at rescue groups
  - Staff employed in spay/neuter programs
  - Veterinarians
  - Veterinary staff
  - Volunteers
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## **More and Bigger Responses**

- Infectious diseases often affect a majority of cats in large-scale seizures
- Some cats may be critically ill on arrival
- Historical large-scale euthanasia is being replaced with rehabilitation efforts
- Testing every cat is impractical, but disease prevalence can be estimated from population samples
- Infectious disease management is needed at critical intervals:
  - Cat intake examinations
  - Care and treatment

- Adoption and transfer
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## Common Conditions Observed at Intake

Cats from large-scale seizures commonly present with one or more of the following conditions:

### Nutritional and Skin Conditions

- Thin and emaciated body condition
- Feces-matted fur
- Fleas, lice, and skin disease
- Ringworm (dermatophytosis)

### Wounds and External Parasites

- Wounds from trauma or fighting
- Ear mites, ear infections, and ear canal tumors

### Oral and Ocular Disease

- Severe dental disease and abscessed teeth
- Stomatitis and oral tumors
- Oral ulcers
- Eye infections
- Ruptured globes (eyes)

### Respiratory Disease

- Severe upper respiratory infection (URI)
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## Respiratory Pathogens in Large-Scale Cat Seizures

The table below shows the prevalence of respiratory pathogens detected across different population sources:

Source	No. Cats	FHV	FCV	C. felis	Bordetella	M. felis	S. zoo
Seizure	68	28%	76%	31%	25%	75%	56%
Shelter	140	49%	23%	5%	28%	34%	--
TNR	124	10%	45%	14%	2%	52%	--

FHV = Feline Herpesvirus; FCV = Feline Calicivirus; C. felis = Chlamydomphila felis; M. felis = Mycoplasma felis; S. zoo = Streptococcus zooepidemicus; TNR = Trap-Neuter-Return population

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## Newly Emerging Disease: Streptococcus zooepidemicus

### In Shelter Dogs

- Causes sudden death with respiratory hemorrhage
- Often mistaken for kennel cough
- Frequently co-occurs with distemper or canine influenza
- Outbreaks controlled by treating all dogs in the shelter with antibiotics

### In Shelter Cats

- Causes outbreaks of fatal upper respiratory infection
    - Signs include nasal discharge, cough, and death
    - Organism found in nasal passages, lungs, and brain
  - May explain why URI turns fatal in crowded shelters and hoarding cases
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## Intestinal Pathogens in Large-Scale Cat Seizures

Diarrhea is common and caused by a wide range of intestinal pathogens. The table below shows prevalence across population sources:

Source	No. Samples	T. foetus	Crypto	Giardia	FPV	FCoV	Cocc	Rnds	Hooks
Seizure	70	38%	11%	56%	0%	86%	8%	16%	11%
Shelter	112	0%	7%	6%	15%	46%	28%	6%	6%
TNR	127	1%	11%	9%	0%	30%	13%	13%	70%

*T. foetus* = *Tritrichomonas foetus*; *Crypto* = *Cryptosporidium*; *FPV* = Feline Parvovirus (panleukopenia); *FCoV* = Feline Coronavirus; *Cocc* = *Coccidia*; *Rnds* = Roundworms; *Hooks* = Hookworms

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## Large-Scale Responses to Animal Cruelty

### Groups with Sheltering Expertise

- Set up a temporary shelter for seized animals
- Provide care of sheltered animals

## **Veterinary Responders**

- Medical evaluation of animals after seizure
- Oversee medical care of animals while in shelter
- Prepare animals for permanent placement

## **Groups with Adoption Expertise**

- Arrange for adoptions
  - Transfer animals to rescue groups
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## **Incident Command System (ICS)**

### **Framework for Organizational Efficiency**

- Allows management of multiple organizations simultaneously
- Essential for a well-coordinated response

### **Unified Command Structure**

- Incident Commander oversees all responders
- Section Chiefs oversee Operations, Planning, Logistics, and Finance - each reports to the Incident Commander
- Responders in each section report to their designated supervisor
- The veterinary medical team falls under the Operations section

### **ICS Organizational Structure**

Incident Commander -> Operations, Planning, Logistics, Finance. Under Operations: Shelter Teams and Veterinary Teams.

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## **Veterinary Response Teams**

The veterinary team structure under the Operations Section Chief:

- Lead Triage Veterinarian
  - Vet Team 1: Veterinarian, Vet Assistant, Medical Scribe
  - Vet Team 2: Veterinarian, Vet Assistant, Medical Scribe
  - Vet Team 3: Veterinarian, Vet Assistant, Medical Scribe
  - Photographer
  - Lab Tech

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## Medical Triage and Examination

- Establish veterinary teams, protocols, supplies, and equipment before deployment
  - Solid record and census management is critical
  - Documentation supports both the legal case and the animals' care
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## Veterinary Team Station Supplies

### Equipment

- Digital camera
- Dry erase board
- Microchip scanners
- Stethoscopes
- Thermometers
- Syringes and needles
- Vaccines
- Parasite treatments
- Medications
- EDTA blood collection tubes

### Consumables

- Black pens
  - Sharpies
  - Paper towels
  - Spray bottle with disinfectant (Trifectant)
  - Exam gloves
  - Garbage bags
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## Sample Supply Calculator for Large-Scale Cat Response

Estimated quantities per cat, with 10% overage, and totals for 100 cats:

Item	Per Cat	10% Overage	Total	x100 Cats
3 ml x 22g syringe for vaccines	2	0.2	2.2	220

Item	Per Cat	10% Overage	Total	x100 Cats
3 ml x 22g syringe for medications (2%)	0.2	0.02	0.22	22
1 ml x 25g syringe for FeLV/FIV test	1	0.1	1.1	110
1 ml x 22g syringe for sedation	0	0	0	0
1 ml x 25g for reversal	0	0	0	0
1 ml x 22g for ivermectin	0	0	0	0
IDEXX SNAP tests	1	0.1	1.1	110
Ponazuril (ml)	1	0.1	1.1	110
Strongid (ml)	1	0.1	1.1	110
Ivermectin (ml)	0	0	0	0
Revolution	1	0.1	1.1	110
Baytril 22.7 mg tabs (7/cat x 5%)	0.35	0.035	0.385	38.5
Baytril 22.7 mg/ml inj (7/cat x 5%)	0.05	0.005	0.055	5.5
Doxycycline 50 mg/ml (7/cat x 5%)	0.05	0.005	0.055	5.5
Convenia ml (1 ml/cat x 10%)	0.1	0.01	0.11	11
Penicillin BP inj ml (1 ml/cat x 10%)	0.1	0.01	0.11	11
BNP ointment (1/cat x 5%)	0.05	0.005	0.055	5.5
Terramycin ointment (1/cat x 5%)	0.05	0.005	0.055	5.5

## Biosecurity

- Goal: reduce contamination between animals and protect personnel from zoonotic pathogens
- Reality: extensive cross-contamination between animals is likely already present
- Practical compromise:
  - Wear disposable exam gloves and change between each cat
  - Clean exam table with disinfectant between each cat

## Safety First

- Secure the examination area to prevent cat escapes
- Keep safe handling equipment on hand: towels, nets, cat bags
- Fractious cats may require sedation for safe handling:

- TTD cocktail IM (Telazol, Torbutrol, Dexdomitor)
  - Partial reversal with Atipamezole (Antisedan)
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## Medication Dosing Reference Table

A weight-based dosing chart is used to guide treatment. The table covers cats from 0.3 kg to 5.0 kg (0.8 to 11.0 lbs) and includes the following medications:

- Baytril 22.7 mg tablet
- Baytril 22.7 mg/ml injection (subcutaneous)
- Convenia (ml)
- Strongid (ml, oral)
- Ponazuril 75 mg/ml (ml, oral)
- Praziquantal 1.5 mg/ml (ml, oral)
- Meloxicam 1.5 mg/ml (ml, oral)
- Tramadol 10 mg/ml (ml, oral)

*Note: Consult the original dosing chart or a veterinarian for exact weight-based dosing volumes.*

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## Forensic Medical Evaluation

### Cat Identification

- Cats are brought in carriers to examination areas
- Verify each cat has a collar with a unique ID number
- Record the ID number on the medical evaluation form

### Digital Photographs

- Use a dry erase board showing: case number, cat ID, date, and veterinarian name
- Take 4 views: front, right side, left side, and top
- Close-up photos of any lesions
- Camera card is provided to the lead investigation agency

### Microchip Scan

- Use a global microchip scanner
- Implant a new chip if no pre-existing chip is found
- Record chip number on the medical evaluation form

### Body Weight and Condition Score

- Weigh using a baby scale
- Assign body condition score using the Purina 1-9 scale

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### **Complete Physical Exam**

- Temperament: friendly, shy, or fractious
- Age estimated from dentition
- Sex and reproductive status (intact vs. neutered)
- Body temperature
- Evaluation of all body systems

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### **Photographic Documentation**

- Document poor body condition, wounds, and diseases with photographs
- Photos serve as forensic evidence and support ongoing medical care

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### **Vaccination**

- FVRCP + FeLV (administered in the distal left hindleg): cats 1 month of age or older
- Rabies (administered in the distal right hindleg): cats 3 months of age or older
- Attach peelable vaccine vial labels to the medical evaluation form

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### **Parasite Treatment**

- Pyrantel pamoate (oral) for roundworms and hookworms
- Ponazuril (oral) for coccidia
- Ivermectin injection if oral administration is not possible
- Praziquantal / Droncit (subcutaneous) for tapeworms
- Revolution or Advantage Multi (topical) for fleas, ear mites, intestinal parasites, and heartworms

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### **Retroviral Testing**

- Collect blood in an EDTA tube (retained for potential recheck)
- IDEXX SNAP Combo test performed on-site for FeLV and FIV

Retroviral test results from 1,940 cats tested across large-scale seizures:

No. Cats Tested	FeLV Positive	FIV Positive
1,940	8%	8%

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## Completing the Evaluation

- Return cat to carrier for transport to the shelter
  - Place medical evaluation form and treatment sheet in a large zip-lock bag attached to the carrier
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## Diagnostic Testing

- All cats tested for FeLV/FIV
  - Individually severely ill cats tested to guide specific treatment decisions
  - All cats examined for ringworm using a Wood's lamp; toothbrush culture performed if lesions are present
  - A sample of cats with diarrhea and URI tested with PCR panels to determine population-level disease prevalence
  - Forensic pathology results must be transmitted to the treatment team
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## Management: Segregation

- Many populations are already highly cross-contaminated on arrival

### Short-Term Cases

- Individual housing for each cat
- Segregate cats with URI, ringworm, juveniles, and ferals into separate areas

### Long-Term Cases

- Group housing organized by sex, age, and health status
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## Management: Treatment

### Standardized Intake Treatments

- Cover common infectious diseases with:
  - Strongid, ponazuril, praziquantal, selamectin

- Antibiotics for all cats if *Streptococcus zooepidemicus* is suspected
- Lime dip plus itraconazole or terbinafine for ringworm

## **Standardized Protocols for Common Conditions**

- Develop and apply protocols for: diarrhea, URI, conjunctivitis, wounds, and hair loss
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## **Treatment Initiation**

- URI: doxycycline or Baytril (enrofloxacin)
  - Wounds: Convenia (cefovecin)
  - Pain management: Meloxicam and Tramadol
  - Complete a treatment sheet with orders for continuation of care in the shelter
  - Use daily monitoring cards to track health and behavior status
  - Veterinary rounds conducted twice daily
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## **Management: Adoption and Transfer**

### **Lead Agency Responsibilities**

- Begin treating infectious diseases early in preparation for adoption
- Inform adopters, transfer partners, and receiving veterinarians about diseases present and required precautions

### **Transfer Partner Responsibilities**

- Segregate cats transferred from cruelty cases
  - Consider retesting with PCR and FeLV/FIV in case of status changes
  - Consider intake lime sulfur dip as a ringworm preventive measure
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## **Management: Resources**

### **Scale of Large Cases**

- Can cost more than \$1 million
- May require dozens of personnel daily for several months
- Significant space needed for humane housing of cats
- Adoption and transfer capacity may be strained

### **National Organizations That Can Help**

- ASPCA and HSUS have field response teams to assist local authorities
  - Other national agencies can assist with temporary sheltering
  - PetSmart Charities can provide a shelter-in-a-box kit
  - PetSmart Charities offers emergency response grants
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## **Additional Resource**

A video resource related to this presentation is available at:

[www.youtube.com/watch?v=1VzcDg9tKtE](http://www.youtube.com/watch?v=1VzcDg9tKtE)