

# FELINE health topics

for veterinarians

July–September 2003

Vol. 18, No. 3

**VIRULENT SYSTEMIC  
FELINE CALICIVIRUS:  
An Emerging Concern\***  
Page 1

**FELINE POPULATION  
MEDICINE: A Herd  
Health Approach**  
PART I\*

Page 4

**AAFP WINTER  
CONFERENCE  
ANNOUNCEMENT**  
Page 8

*\*Adapted with permission from the proceedings of the 15th Annual Fred Scott Feline Symposium held at Cornell on July 25-27, 2003*

## Virulent Systemic Feline Calicivirus: an Emerging Concern

Kate F. Hurley, DVM

University of California, Davis, School of Veterinary Medicine

### Feline Calicivirus Review

Like other members of the family caliciviridae, feline calicivirus (FCV) is an unenveloped, positive strand RNA virus. As such, these viruses tend to be environmentally resistant and prone to mutation, two characteristics which make them good candidates to cause significant outbreaks of disease. Other members of the family include rabbit hemorrhagic disease and vesicular stomatitis virus of swine, both of which have historically been associated with widespread epidemics.

Infection with FCV is very common, and virus can be isolated even from clinically normal cats. Many cats continue shedding virus for weeks or months after recovery from clinical disease, and some go on to be lifelong carriers. Although vaccination is widely practiced, it is only partially effective. FCV vaccine does not prevent infection, and although vaccination mitigates severity of disease in some cases, vaccine resistant strains are known to occur.

Signs of FCV infection are variable, and include fever, rhinitis, conjunctivitis, oral ulcerations and/or chronic stomatitis, and lameness. Although morbidity is high, mortality due to uncomplicated FCV infection is usually low, and when death occurs it is typically due to pneumonia in very young or debilitated kittens.

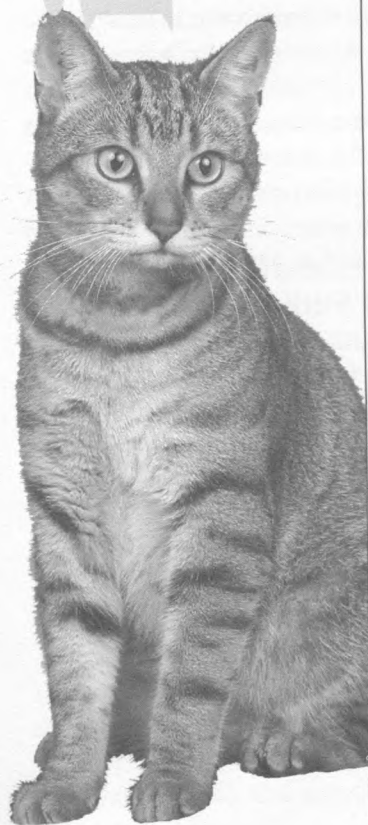
### Virulent Systemic Feline Calicivirus

In 1998, an outbreak of unusually virulent feline calicivirus was recognized in north-

ern California. In addition to signs more commonly seen with FCV, infection with this viral strain (FCV-Ari) was associated with signs of edema, skin crusting and ulceration, multiple organ involvement and death even in otherwise healthy, vaccinated adult cats. Since the northern California outbreak, at least 6 similar focal outbreaks of virulent, systemic FCV (VS-FCV) disease have been reported throughout the United States. In addition to similarity in clinical signs, common features of outbreaks include:

- In every outbreak where a suspect index case was identified (5/6 outbreaks), a cat from an animal shelter or rescue group appeared to be the source of infection
- Otherwise healthy, adult, vaccinated cats were prominently affected
- Spread occurred very readily, including via fomites to cats belonging to hospital employees and clients
- Spread of disease was limited to the affected clinic(s) or shelter, with no spread within the community reported
- The outbreak resolved within approximately two months

In addition to known outbreaks, there have been reports of isolated case clusters of VS-FCV. Cats experienced similar clinical signs, but the disease in these clusters did not spread beyond a single affected household, in spite of infected cats being



hospitalized for several days without strict isolation precautions. It appears that a combination of viral, host and environmental factors are required for an outbreak to occur.

### Outbreak Investigation: FCV-Kaos

The outbreak described here occurred in southern California in the summer of 2002, and was the largest outbreak of virulent systemic FCV yet reported, with 54 cases recognized at 3 private practices and a rescue group. The virus was named FCV-Kaos after an early case. The size of the outbreak and the fact that it was recognized relatively early afforded an opportunity

to document the range of clinical signs, identify risk factors for disease, and characterize viral isolates from a relatively large number of cases.

### Transmission

FCV-Kaos spread very easily. In addition to direct cat-to-cat transmission, disease spread between clinics and to homes via movement of infected cats and via fomites carried by owners and technicians. Subclinically as well as clinically infected cats were documented to transmit fatal disease, and continued spread of disease occurred in one clinic via a hospitalized cat with unrecognized infection. The outbreak was believed to start with a rescue group kitten who initially showed only mild upper respiratory signs. The median incubation period was 5 days, with a range of 1-12 days. Peracute disease and death occurred in some cases within 24 hours of infection. Incubation periods of greater than 5 days were seen only in cats exposed by another cat in the household; for hospital acquired infections, incubation was between 1-5 days.

As with field strains of feline caliciviruses, continued shedding may occur following recovery. One cat was documented to shed FCV-Kaos at least 16 weeks after recovery from disease. In some cases, shedding was intermittent. Therefore, multiple viral cultures (at least 2-3 obtained a week apart) are required to confirm negative viral status. However, no fully recovered cat has been shown to transmit disease, despite exposure in several cases to other naïve cats in the household or during subsequent hospitalization. The risk posed by recovered and chronically shedding cats remains uncertain.

### Risk Factors

Virtually all exposed cats became infected with FCV-Kaos. Unlike the pattern seen with most strains of calicivirus, adult cats were at significantly higher risk than kittens for severe dis-

ease and death. Overall mortality was 40 percent and mortality in cats over 6 months old was 60 percent. Although vaccination could not be specifically assessed as a risk factor (very few cats were known to be unvaccinated) at least 23 cases occurred in cats known to be currently vaccinated for FVRCP. There was no difference in severity of disease in kittens vaccinated intranasally versus parenterally.

### Clinical Signs

In order of frequency, clinical signs in the 54 cases of FCV-Kaos included:

- Fever (median 104.9F) 87%
- Edema 50%
- Oral ulcers 43%
- Nasal or ocular discharge 26%
- Icterus 19%
- Respiratory distress 17%
- Sores alopecia 15%

Mild or subclinical disease occurred in 21 percent of cases. It is worth noting that, although serious, the prognosis is not hopeless; even in those cases with severe signs of disease, 13 of 35 cats survived.

Although the original reported outbreak of virulent systemic FCV (FCV-Ari) was described as a "hemorrhagic fever like" syndrome and the term has been used to describe such outbreaks subsequently, hemorrhage was reported in only two cases in this outbreak (from the nose in one case, and from the nose and rectum in another).

### Clinical Pathology

Clinical pathology findings were inconsistent and non-specific, and included:

#### Chemistry abnormalities (n=10):

- Hyperbilirubinemia  
(6/10, range 0.6-3.9 mg/dl)
- Hypoalbuminemia  
(5/10, range 1.1-2.1 gm/dl)
- Elevated creatine phosphokinase (5/10, range 639-10930)
- Elevated alanine aminotransferase (2/10, range 102 - 116)



The ultimate purpose of the Cornell Feline Health Center is to improve the health of cats every-

where by developing methods to prevent or cure feline diseases, and by providing continuing education to veterinarians and cat owners. All contributions are tax-deductible.

#### Director:

James R. Richards, D.V.M.

#### Veterinary Consultants:

Christine Bellezza, D.V.M.

Paul Maza, D.V.M.

Carolyn McDaniel, V.M.D.

#### Administrator:

Gwendolyn Frost

#### Administrative Assistants:

Kathleen Mospan

Pamela Sackett

Sheryl Thomas

Shelly VanGorder

Phone: (607) 253-3414

Consultation: 1-800-KITTYDR

Web: [www.vet.cornell.edu/Public/FHC](http://www.vet.cornell.edu/Public/FHC)

©2003 by Cornell University on behalf of the Cornell Feline Health Center, College of Veterinary Medicine, Ithaca, NY 14853.

All rights reserved. Permission to reprint selected portions must be obtained in writing. Cornell University is an equal opportunity, affirmative action educator and employer.

## **Complete blood count abnormalities (n=8)**

Lymphopenia

(5/8, range 180-1188)

Neutrophilia

(3/8, range 8549-11616)

Mild anemia (2/8, HCT 25%)

## **Pathology**

The most common findings on necropsy included:

- Edema and skin ulceration  
More extensive than appreciated clinically.
- Lesions at the junction of the footpad and haired skin
- Peracute hepatic necrosis with hepatocellular individualization  
Not seen in all cases, but distinctive finding also reported in several other outbreaks of VS-FCV.
- Variable involvement of other organs  
Lung, spleen, pancreas and colon.

No consistent cause of death was identified. Because lesions are inconsistent, full necropsies are preferred to specific tissue examination for diagnostic purposes. The junction of footpad and haired skin should be examined, even if lesions are not appreciated grossly.

## **Isolated Case Clusters**

Follow-up surveillance has identified several cases or case clusters that did not appear to spread beyond the affected household, despite extensive exposure to other cats at veterinary hospitals prior to recognition of the infectious nature of the condition. Signs and epidemiology were otherwise similar; in each case cluster, disease was introduced after exposure to an infectious source (recent adoption of a shelter cat, recent hospitalization at a large veterinary hospital); cats developed signs of edema, high fever, and skin crusting and sores; and adult cats (and vaccinated cats in one case

cluster) were severely affected. Cats within a household were variably affected, with 1 or 2 cats developing severe or fatal disease, while other cats from the same household showed mild or no signs. It is unknown what combination of viral, environmental and host characteristics are responsible for the development of major outbreaks versus isolated case clusters.

## **Diagnosis of VS-FCV**

Diagnosis of virulent systemic FCV disease is based on positive viral isolation (culture or PCR) and cDNA sequencing of an identical viral strain from more than one affected cat. Acutely obtained samples are preferred, because sensitivity of viral isolation decreases later in disease. There is no test that can differentiate "every day" field strain calicivirus from more virulent forms based on a sample from a single affected cat. Many clinically normal cats are culture positive for field or vaccine strain calicivirus on oropharyngeal swab. A positive result on tissue or serum (as opposed to oropharyngeal swab) increases the index of suspicion for caliciviral infection causing clinical disease. Virus has been demonstrated in cases of VS-FCV disease in foot pads and other lesions via immunohistochemistry. Visualization of virus in tissue outside the oral cavity may assist in diagnosis of VS-FCV.

## **Diagnostic Summary**

Suspicion of virulent systemic feline caliciviral disease increases when:

- Cat has a history of recent infectious disease exposure (shelter, cat show, boarding, veterinary hospital)
- More than one cat is affected
- General signs of feline calicivirus infection (upper respiratory infection, fever, oral ulceration, limping) precede characteristic signs of VS-FCV
- Characteristic signs of VS-

FCV (as listed above)

- Other causes of systemic vascular damage (e.g., sepsis) ruled out
- Peracute hepatic necrosis with hepatocellular individualization in conjunction with consistent signs and history
- Positive viral isolation from serum or tissue
- Isolation and sequencing of identical viral strains from more than one cat

## **Treatment**

As for any virus, treatment is primarily supportive care. Treatment with steroids and interferon have been reported. The efficacy of these treatments is unknown.

## **Prevention and Control**

We are still learning about the biology and epidemiology of virulent systemic feline calicivirus disease. These recommendations are suggested based on what has been observed so far, and may not be all-inclusive:

### **At all times:**

- Handle cats with upper respiratory infection, high risk history or suspicious signs with careful infectious disease precautions, including use of a disinfectant proven against unenveloped viruses

### **In an outbreak:**

- Thoroughly clean and disinfect entire premise with a disinfectant proven effective against unenveloped viruses (e.g., sodium hypochlorite, 5 percent diluted at 1:32)
- In areas that can't be effectively disinfected, clean as well as possible and close area to cat access for 2-4 weeks
- Strictly isolate ALL exposed cats  
Gowns, gloves, shoe covers, separate instruments and

*Continued on page 8*



# Feline Population Medicine: a Herd Health Approach — Part I

Kate F. Hurley, DVM

University of California, Davis, School of Veterinary Medicine

## Introduction

### Herd Health Versus Individual Animal Medicine

The purpose of this presentation is to suggest a format for a herd health approach to a feline population, following the components that are usually included in a typical patient encounter: history, physical exam, diagnostics, treatment, and recheck.

Caring for a population of animals requires the same familiar steps that are taken in caring for an individual patient, but applied in a different way. We would not think of initiating treatment without first taking a history and performing a physical exam and appropriate diagnostic tests. Similarly, interventions to promote herd health should be built on a foundation of understanding the goals and problems specific to that population. Once a problem is identified, individual animal medicine tends to focus more on treatment, while herd health focuses on prevention. Written policies and protocols are developed, similar to the prescription that details treatment for an individual patient. Finally, the herd health veterinarian monitors data that reflect disease and performance levels, just as the veterinarian treating an individual performs rechecks to ensure efficacy of treatment.

Of course, assessing a whole population is a complex and time-consuming process. Although the following outline is presented following the model of a single office visit, in reality these steps would more likely be accomplished over a series of herd health visits, tackling just one or two areas at a time.

## History

### Establishing Production Goals and Baseline Performance Measures

Taking a careful history is an important part of an exam. One component

of the history is establishing the purpose for which the animal is kept, whether as a companion, show animal, breeding animal, etc. This may in turn determine the recommendations made for prevention and treatment of various conditions. However, the majority of cats are kept purely for the pleasure of their company, and our job is to make recommendations to optimize the cat's health and well-being. The owner decides how much they are willing and able to spend, and which recommendations they will implement.

In herd health, the "purpose" of the population receives more consideration. Few herds are kept exclusively for the simple pleasures of having the animals around. The herd medical program is designed not only to keep the animals healthy, but to help the herd perform optimally. Resources are limited: veterinarian and herd manager work together to ensure that resources are being divided among competing programs for optimal return on expenditures. A dairy herd that had perfectly healthy cows but lost money due to excessive medical costs would not be pleased with their medical program. Similarly, an animal shelter that had perfectly healthy cats but could not afford to hire staff to perform adoptions might not meet the goal of saving many lives.

### Performance goal examples

#### Dairy herd:

- Milk production that maximizes economic return for the farmer
- Provision of care commensurate with reasonable animal welfare in compliance with applicable laws
- Minimization of pollution by animal wastes
- Prevention of zoonoses
- Avoidance of contamination

and residues in animal products

#### Animal shelter:

- Ending euthanasia of adoptable animals
- Ensuring health and comfort of animals in the shelter
- Protecting public health and safety
- Providing adopters with appropriate, healthy pets and a positive adoption experience.
- Educating the public and modeling good animal care practices

### Performance targets

When treating an individual patient, we look for abatement of signs or changes in lab values towards normal as an indication that treatment is working. In herd health, we identify performance targets: measurable factors we can track to see if we are making progress towards our goals. These will be revisited later in the section on data collection.

#### Dairy cow performance target example:

- Reproductive performance
- Incidence and prevalence of mastitis
- Calf health and survival
- Milk production score

#### Shelter performance target example:

- Percentage and number of animals leaving shelter alive
- Incidence and prevalence of important diseases
- Number and reasons for animal surrender
- Frequency and reason for returns after adoption
- Frequency of disease immediately after adoption

## Herd Physical Exam

### Major Components of a Preventive Medicine Program

When performing a physical exam, we are careful to observe all major body

systems which, functioning together, make up a healthy organism. Similarly, major components of a preventive medicine program must be functioning adequately in order to maintain a healthy population. Components of the herd health "physical" include:

- Population management and crowd control
- Cleaning/disinfection
- Vaccination
- Nutrition
- Parasite control
- Screening/diagnostic testing
- Population segregation
- Behavioral health/environmental enrichment
- Facility health
- Specific disease considerations

A more detailed description of each of these elements of a herd health exam follows. This is primarily based on an assessment of an animal shelter; slightly different questions may pertain to other cat populations, but the general categories remain the same.

### **Crowd control**

Overcrowding is the single biggest contributor to poor health in many feline populations. This is particularly common in shelters, where it often seems that more lives could be saved if only a few more cats could be squeezed in. In fact, overcrowding has the potential to cost many lives through increased disease and stress-induced behavioral disorders, compromise of staff's ability to care for animals and provide good customer service, and the subsequent loss of community support and trust. Crowding is not simply a matter of cage space; overcrowding occurs whenever the animal population outstrips staff's ability to provide appropriate care.

### **Population and crowding questions include:**

- What is the annual population served?
- What is the average daily population?
- What is the ideal capacity of the facility? What is the actual population today?
- If there is group and individual housing, what is the capacity of each? What is the

size of group housing areas, and the maximum number of cats housed there?

- Maximum group size of 10 cats, no more than .6 cats per m<sup>2</sup> (3.2 ft<sup>2</sup>) recommended [1-3].
- What is the average length of stay ("turnover time")? (This question is specifically important in shelters that perform cat adoptions.)
  - Estimated by: daily capacity x 365/annual population (gives maximum turnover time - most accurate in a facility that's usually close to full) For example, shelter with a daily capacity of 50 cats, took in 300 cats last year: 50 cat/day x 365 days/300 cats = average stay of 60 days per cat.

-Decreasing turnover time increases the number of animals served with the same space, staff, and cost.

-Turnover time is decreased by speeding adoption, reclaim, rescue, and eliminating unnecessary delays in making cats available.

-Turnover time should be considered when building in programs that delay availability for adoption, such as lengthy quarantine or extensive pre-adoption workups. Not to say that such programs are wrong, just that the effects on turnover time should be considered.

### **Cleaning and disinfection**

Products used, cleaning schedule, techniques and "cleanability" of the environment should be assessed. Questions include:

#### **Areas to be cleaned/frequency:**

- How often are cat holding areas cleaned?
  - For facilities with multiple sub-populations of cats, in what order are cat holding areas cleaned?
  - Ideally, cleaning proceeds

from healthiest/most vulnerable to least healthy, (e.g., proceed from kittens to owned/adoptable adults to strays/recent admissions to quarantine to isolation.)

- How often are common areas (lobbies, hallways, visiting rooms, etc.) cleaned?
- How often are air vents, furnace filters, drains, and other easily overlooked areas cleaned?
- Is deep cleaning of all areas performed on a regular basis?
- Are there areas of particular concern for cleaning? Carpet, furniture, unfinished wood, grassy outdoor areas, etc.? What is the plan for preventing contamination and/or for cleaning these areas?

### **Cleaning products and methods:**

- What products are being used for cleaning?
  - Detergent? A detergent (or a disinfectant with detergent properties) is required for effective cleaning.
  - Disinfectant? A product proven effective against unenveloped viruses [4-6] (e.g., feline panleukopenia and feline calicivirus) should be used on a daily basis in facilities with moderate to high population turnover, and at regular intervals (e.g., weekly) in other cat facilities.
  - Degreaser/deep cleaner? A degreaser should be used at regular intervals (depending on degree of soiling).
  - Special cleaning products for hard-to-kill agents (e.g., ringworm) or hard-to-clean areas?
- At what concentration is the disinfectant used? Is it measured or just eye-balled?
- What is the method of application (spray, rags, paper towels, etc.)?
- How long is the disinfectant left in contact with the sur-

face? Consistent with manufacturers recommendations? (Most disinfectants require a ten minute minimum.)

- Are there any factors, such as hard water, excessive organic matter, or exposure to light that may render the chosen disinfectant ineffective?
- Are special provisions made for cleaning up after an exposure to an unusually durable agent such as panleukopenia or ringworm?
- How are dishes, litter boxes, bedding, carriers, toys etc. cleaned?
- How often are litter boxes scooped, emptied, and thoroughly scrubbed?
- If cats do not remain in the same cage during cleaning, where are they held (carrier, temporary cage, etc.)? Is the holding area sufficiently cleaned between cats?

If infectious disease spread continues in the face of a seemingly adequate cleaning program, it is worth actually watching cleaning from start to finish. Sometimes the cleaning protocol actually in use is quite different from the one the manager believes is being followed. Also consider fomites such as exam surfaces, carriers, vehicles, door knobs and other areas that may escape daily attention.

### **Vaccination**

If vaccines are given in-house by shelter or cattery staff (as is often the case), the herd health vet should ensure that vaccines are being chosen, stored, and administered for maximum efficacy and safety. Questions include:

- What vaccines are used routinely?
- For each vaccine:
  - Route? (intranasal versus parenteral)
  - Location? (for parenteral vaccines - are AAEP guidelines followed?)

-Killed versus live?

-Manufacturer?

- How often/at what age are vaccines administered? At intake? Are boosters given?
- How and where are vaccines stored?
- Are vaccines recorded in a permanent record?
- Are written instructions provided for recognition and response to adverse vaccine reactions? If in-house treatment is provided for emergency response to vaccine reactions, are all necessary drugs available and current?

### **Nutrition**

A well-thought-out feeding program is an important part of a comprehensive herd health plan. The diet should be consistent and of good quality, with a system in place to ensure adequate food and water intake. Both overfeeding and anorexia (due to stress, unfamiliar diet, competition for food in group housing, or concurrent upper respiratory or GI disease) are common in many cat populations. Questions to ask include:

- What diet is routinely fed? Is it always the same brand?
- Are different diets fed for different life stages?
- Are special diets used for cats with GI disease, skin disease, etc.?

-Some shelters have a wide variety of donated special diets hanging around; it is important to ensure these are used appropriately.

- Is food measured out or are animals free-fed? If measured, how much per cat?
- In group housing, how many feeding stations are there?
- Is appetite and water consumption/urine output monitored on a formal basis?
- Are cats weighed (and/or body condition score assessed) on

intake and on a regular basis?

-This is especially important in shelters and boarding catteries which house cats for longer than a week or two.

### **Parasite control**

In addition to improving the health and comfort of the feline herd, internal and external parasite control is important to reduce spread of vector borne disease (e.g., tapeworm, bartonellosis), prevent environmental contamination with durable agents (e.g., roundworm), and control zoonotic diseases carried by ticks and fleas or caused by internal parasites. In addition, animals free of parasites make more appealing pets for adopters. Parasite control questions include:

- What products are routinely used for external parasite control?
  - Which animals are treated? All or as needed?
- What products are routinely used for internal parasite control?
  - Which cats are treated? All, kittens only, or as needed?
  - Are repeat treatments given, or just a single dose at intake? (i.e., follow up 2 weeks later?)
- Are fecal floats or other diagnostics routinely performed?

Even if extensive diagnostics cannot be performed routinely, it is worth periodically working up multiple fecal samples (at least five) to get a feel for prevailing pathogens in that population.

### **Screening and diagnostic testing**

Some shelters and catteries perform in-house diagnostic testing such as FeLV/FIV ELISA, woods lamp screening and/or ringworm culture, fecal floats and others. In shelters, life and death decisions may be made on the basis of test results. Determining what tests are being used is important in order to provide appropriate counseling about test administration, interpretation and sources of false results.



Diagnostic testing questions include:

- What tests are used routinely? (record type and brand)
- For each test, are all animals tested, animals of a certain age, or only certain animals at higher risk?
- When are animals tested?
  - Intake, prior to moving into a group housing area, prior to adoption?
- Is confirmatory testing done? (e.g., IFA to confirm positive ELISA for FeLV?)
- How are test results recorded?
  - In addition to recording test results in the cat's record, it is helpful to keep a log for each test documenting the number of positive and negative results.
- Where are tests stored?
  - Are tests stored and used according to manufacturer instructions? The importance of this should be emphasized.

### Monitoring and documentation

In order to facilitate communication between multiple caretakers and ensure that each cat in a population is being checked regularly, a formal system of monitoring is helpful. Basic indicators of the cat's physical and behavioral well-being should be noted on a regular basis (daily in a population with high turnover, perhaps less often in a more stable population). This also provides the veterinarian a record of the cat's past health and behavioral status in the event of a problem, in lieu of a doting owner available to speak on the cat's behalf. Monitoring questions include:

- Is a written record maintained of:
  - Appetite
  - Water intake
  - Urination
  - Defecation
  - Physical signs (e.g., upper

respiratory signs)

- Behavior (e.g., hiding, hissing at other cats, withdrawn, friendly, etc.)
- Are all cats specifically observed on a daily basis ("daily rounds")?
  - Who is responsible for this?

### Population segregation

Segregation of population sub-groups is an important tool in maintaining herd health. Populations can be isolated by age, health status, temperament, date of intake (e.g., cohort admission) or simply divided into smaller groups to reduce overall disease transmission. However, quarantine and isolation can increase the time and expense of caring for a cat in a shelter or introducing a new cat into a cattery. In order to make it worthwhile, population segregation must be practiced effectively: quarantine of adequate length for the purpose, control of fomites in addition to physical separation of cats, etc. Segregation questions include:

### Sub-populations and group housing:

- What sub-populations are housed separately?
  - Cats versus kittens?
  - Stray versus adoptable/ownable?
  - Sick versus healthy?
  - Where are non-infectious cats requiring medical treatment housed?
- What screening is done prior to introducing cats into group housing?
  - Are cats held for a certain length of time, either in quarantine or individual housing, before being moved into a group area?
  - What testing, vaccination, and other prophylactic measures are required prior to introduction to group housing?

- Are group housed cats all-in all-out or is there a constant flux in and out?

### Quarantine:

- Why quarantine?
  - Quarantine may serve multiple purposes.
    - Identify cats that may be incubating disease.
    - Complete vaccination and parasite control before general exposure.
    - Perform screening tests (e.g., ringworm culture) before introduction into general population or hard to clean areas.
- What is the quarantine time?
  - Greater than the incubation period for the disease being screened for?

### Isolation:

- Under what circumstances are cats placed in isolation?
  - For example, every cat that sneezes versus only severely ill cats.
- Are there separate isolation areas for infectious conditions besides URI (i.e., diarrhea or ringworm) or are all infectious cats housed together?
- For both quarantine and isolation, which of the following are in place:
  - Protective garments worn only in that area (gloves, lab coats/jumpsuits/old surgery gowns).
  - Foot baths and/or disposable/dedicated boots.
  - Dedicated cleaning and animal care supplies used only in that area.
  - Minimal traffic in and out.
  - Ventilation and drainage separate from rest of building (ideal, but uncommon!).

Continued from page 3

supplies, minimal staff entry  
Isolate asymptomatic/exposed separately from clinically ill cats

- Repeat viral culture at 1-2 week intervals on recovering cats until 2-3 negative cultures in order to confirm a cat is no longer shedding

- Contact owners of recently exposed cats, advise to monitor closely

Signs most likely to develop within 1-5 days.

- If spread within hospital has occurred, close to cat admissions until above measures have been taken and outbreak is controlled
- Promptly communicate with area hospitals, shelters and

public health officials when an outbreak is suspected

### Summary

Outbreaks of virulent systemic feline calicivirus are recognized with increas-

ing frequency. Although no specific treatment exists, spread of disease can be minimized by prompt recognition, clear communication, and implementation of effective control measures. 🐱

### Upcoming AAFP Meeting

## American Association of Feline Practitioners

Winter Conference - February 8-10, 2004

### *Feline Cardiology*

Westin Resort and Spa  
Whistler, British Columbia, Canada

See [www.aafponline.org](http://www.aafponline.org) for developing details



### Cornell Feline Health Center

Cornell University  
College of Veterinary Medicine  
Ithaca, New York 14853