

# New AAFP FeLV/FIV Guidelines: 5 critical takeaways for your shelter

Julie Levy, DVM, PhD, DACVIM, DABVP

Fran Marino Endowed Professor of Shelter Medicine Education

Maddie's Shelter Medicine Program



## 2020 AAEP Feline Retrovirus Testing and Management Guidelines



**Clinical importance:** Feline leukemia virus (FeLV) and feline immunodeficiency virus (FIV) infections are found in cats worldwide. Both infections are associated with a variety of clinical signs and can impact quality of life and longevity.

**Scope:** This document is an update of the 2008 American Association of Feline Practitioners' feline retrovirus management guidelines and represents current knowledge on pathogenesis, diagnosis, prevention and treatment of retrovirus infections in cats.

**Testing and interpretation:** Although vaccines are available for FeLV in many countries and for FIV in some countries, identification of infected cats remains an important factor for preventing new infections. The retrovirus status of every cat at risk of infection should be known. Cats should be tested as soon as possible after they are acquired, following exposure to an infected cat or a cat of unknown infection status, determine a cat's infection status based on testing at a single point in time; repeat testing using different methods could be required. Although FeLV and FIV infections can be associated with clinical disease, some infected cats, especially those infected with FIV, can live for many years with good quality of life.

**Management of infected cats:** There is a paucity of data evaluating treatments for infected cats, especially antiretroviral and immunomodulatory drugs. Management of infected cats is focused on effective preventive healthcare strategies, and prompt identification and treatment of illness, as well as limiting the spread of infection.

**Keywords:** Feline leukemia virus; feline immunodeficiency virus; FeLV; FIV; polymerase chain reaction; PCR; diagnostics; veterinary sciences

### Introduction

Feline leukemia virus (FeLV) and feline immunodeficiency virus (FIV) are among the most common causes of infectious disease of cats and are found worldwide. A large observational study evaluated FeLV and FIV test results over a 9-year period from 2008 to 2016.<sup>1</sup> The data were collected from a referral laboratory database containing results from cats tested in the field using point-of-care (POC) tests. Almost 3 million test results from 68 countries grouped into seven global regions were analyzed (Table 1).

A 2006 survey of over 18,000 cats in the USA and Canada reported 2.3% of cats positive for FeLV antigen and 2.5% of cats positive for FIV antibody.<sup>2</sup> In 2009, a survey of over 11,000 cats in Canada reported prevalences of 3.4% for FeLV

antigen and 4.3% for FIV antibody.<sup>3</sup> Another large study, in 2010, evaluated test results of over 62,000 cats from veterinary clinics and shelters in the USA and Canada for FeLV antigen and FIV antibody.<sup>4</sup> In that study, prevalence for FeLV antigen and FIV antibody was 3.1% and 3.6%, respectively. A prospective study in Europe that tested cats visiting a veterinary facility for FeLV RNA in saliva as a measure of antigenemia from September 2016 to March 2017 found an overall prevalence of 2.3%.<sup>5</sup> The highest prevalence was in Southern Europe (5.5%) and the lowest in Northern Europe (0.7%).

These studies show that although guidelines for prevention of infection have been available for decades, there remains a need to improve adherence to testing and vaccination recommendations.



Susan Little  
DVM, DABVP (Feline)  
Co-Chair\*  
Bytown Cat Hospital,  
Ottawa, ON, Canada

Julie Levy  
DVM, PhD, DACVIM,  
DABVP (Shelter Medicine)  
Co-Chair  
Maddie's Shelter Medicine  
Program, Department of  
Small Animal Clinical  
Sciences, College of  
Veterinary Medicine,  
University of Florida,  
Gainesville, FL, USA

Katrin Hartmann  
Dr Med Vet, Dr Habil,  
DECVIM-CA  
Clinic of Small Animal  
Medicine, Centre for Clinical  
Veterinary Medicine,  
LMU Munich, Munich,  
Germany

Regina Hofmann-  
Lehmann  
Dr Med Vet, Dr Habil, FVH  
Clinical Laboratory,  
Department of Clinical  
Diagnostics and Services,  
Vetsuisse Faculty,  
University of Zurich,  
Zurich, Switzerland

Margaret Hoyle  
BVM&S, MRCVS, BSc, PhD  
MFC-University of Glasgow  
Centre for Virus Research,  
Glasgow, UK

Glenn Olah  
DVM, PhD, DABVP (Feline)  
Albuquerque Cat Clinic,  
Albuquerque, NM, USA

Kelly St Denis  
MSc, DVM, DABVP (Feline)  
Charing Cross Cat Clinic,  
Branford, ON, Canada

\*Corresponding author:  
susanlittlevm@gmail.com

isfm

The International Society  
of Feline Medicine (ISFM)  
is pleased to endorse these  
practice guidelines  
from the AAEP

fms  
Journal of Feline  
Medicine and Surgery

SAGE

DOI: 10.1177/1098612X19899940  
© ISFM and AAEP 2020

JFMS CLINICAL PRACTICE 5

- 26 pages of fine print . . . everything from virology to testing to vaccination to treatment . . . if you have a question, the answer is here!
- Today we'll focus on the breaking news – 5 key breakthroughs and emerging trends for 2020
- This is the lightning round!

1. Routine testing protocols

2. New FeLV staging plan

3. FIV+ cats can mingle

4. Paradigm shift for mass screening

5. Adoption is better

# But first: A recap about feline retroviruses

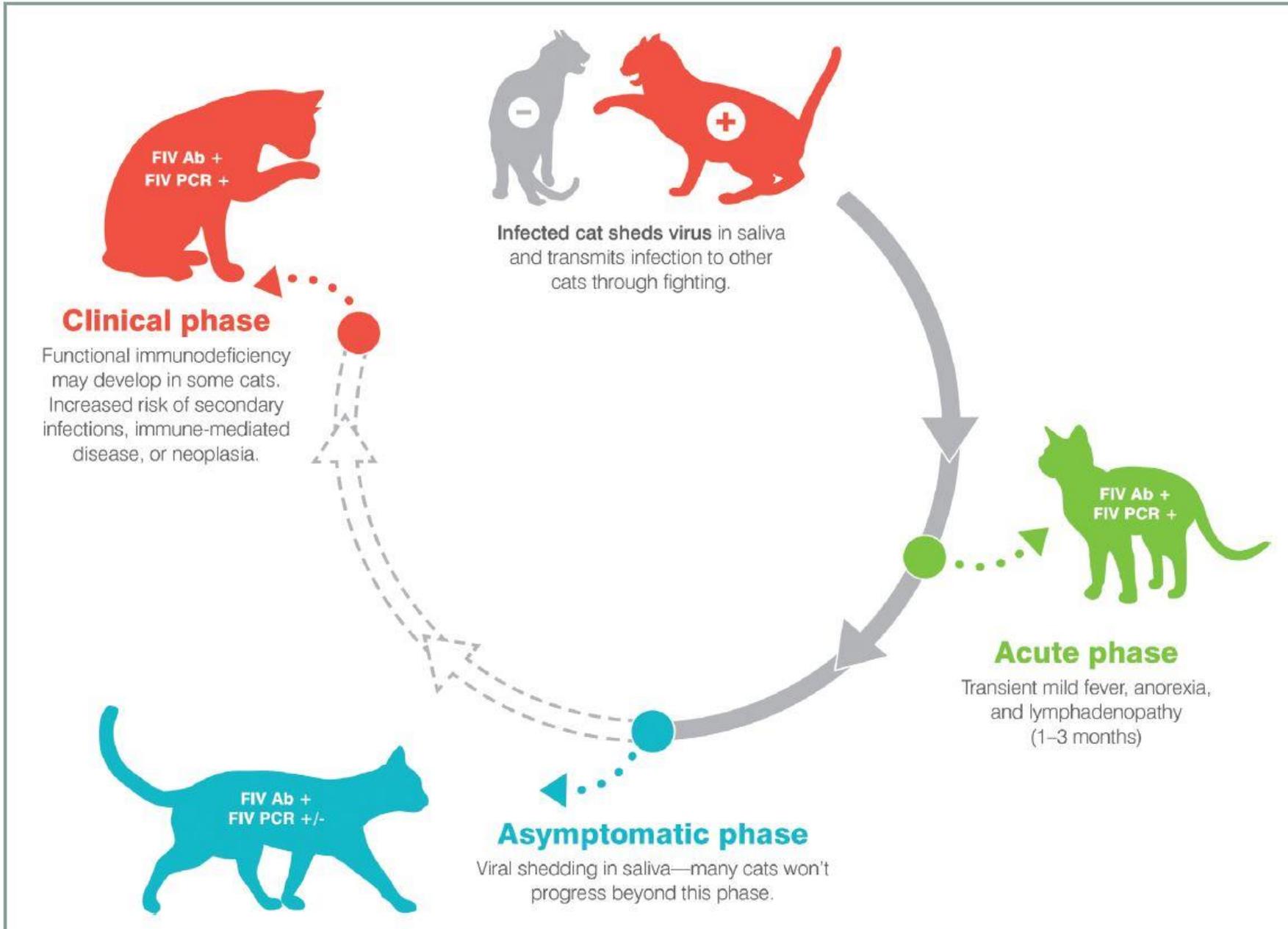
## FeLV

- Spread by close contact and body fluids
  - Kittens of infected queens
  - Housemates
  - Fights
- Most common outcomes
  - Progressive
    - Increased risk of illness
    - Contagious
    - Most test positive
  - Regressive
    - Normal lifespan
    - Not contagious
    - May test negative

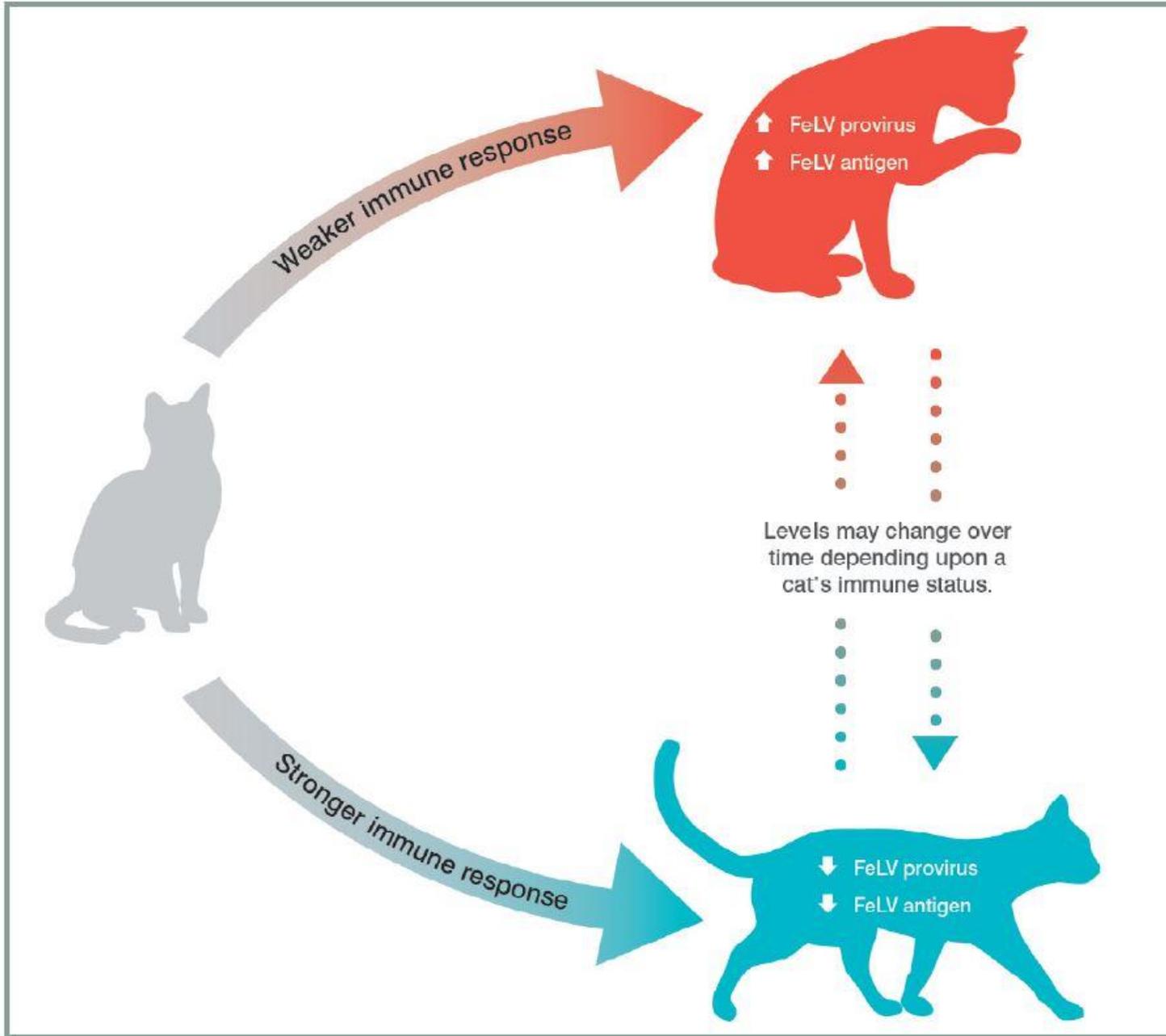
## FIV

- Spread by fighting
  - Adult males most at risk
  - Very unlikely to spread in homes or shelters
- Outcome
  - Lifelong infection
  - Very long asymptomatic period – may never get sick

# FIV



# FeLV

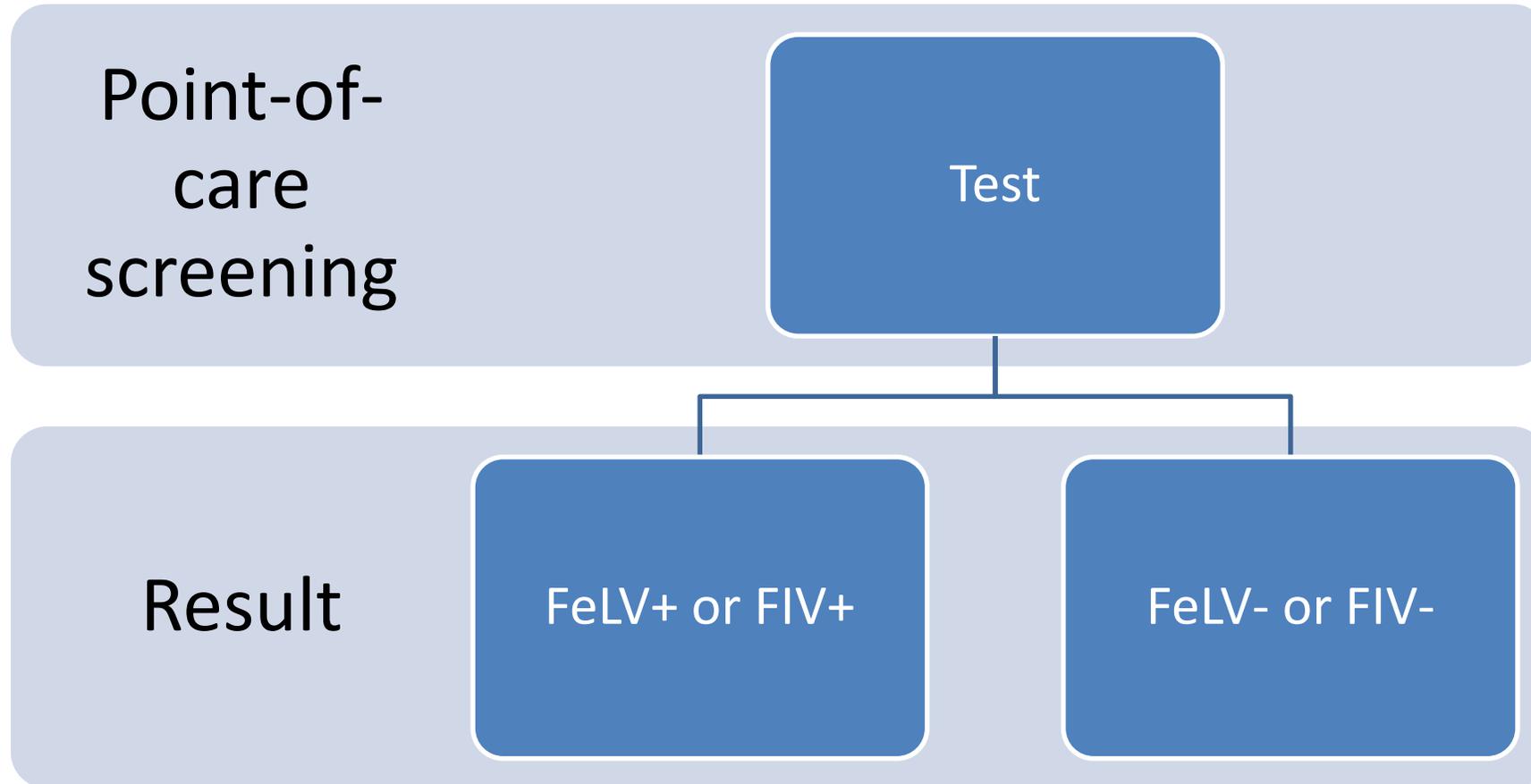


1.  
Routine  
testing  
protocols



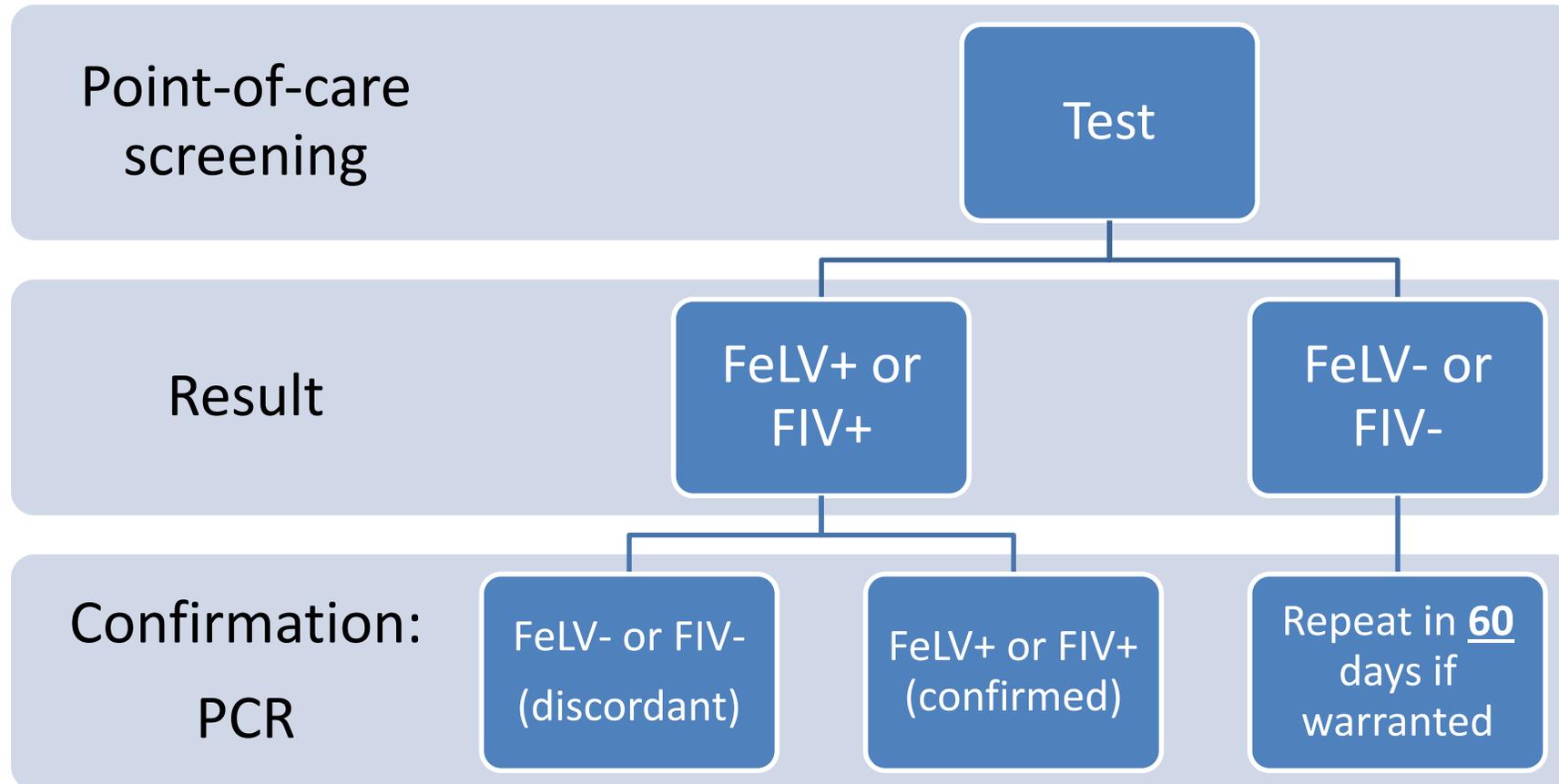
# FeLV/FIV testing option 1: one and done

---



PCR required for critical FeLV testing, such as pre-screening blood donors

# FeLV/FIV testing option 2: confirmation



# Avoid pitfalls in testing

- Select a good test
- Use the test the way it was intended
- Not all cats in a group are the same
  - Don't combine multiple samples for one test
  - Moms, litters, feral colonies, housemates can all have a different status
  - One cat = one test

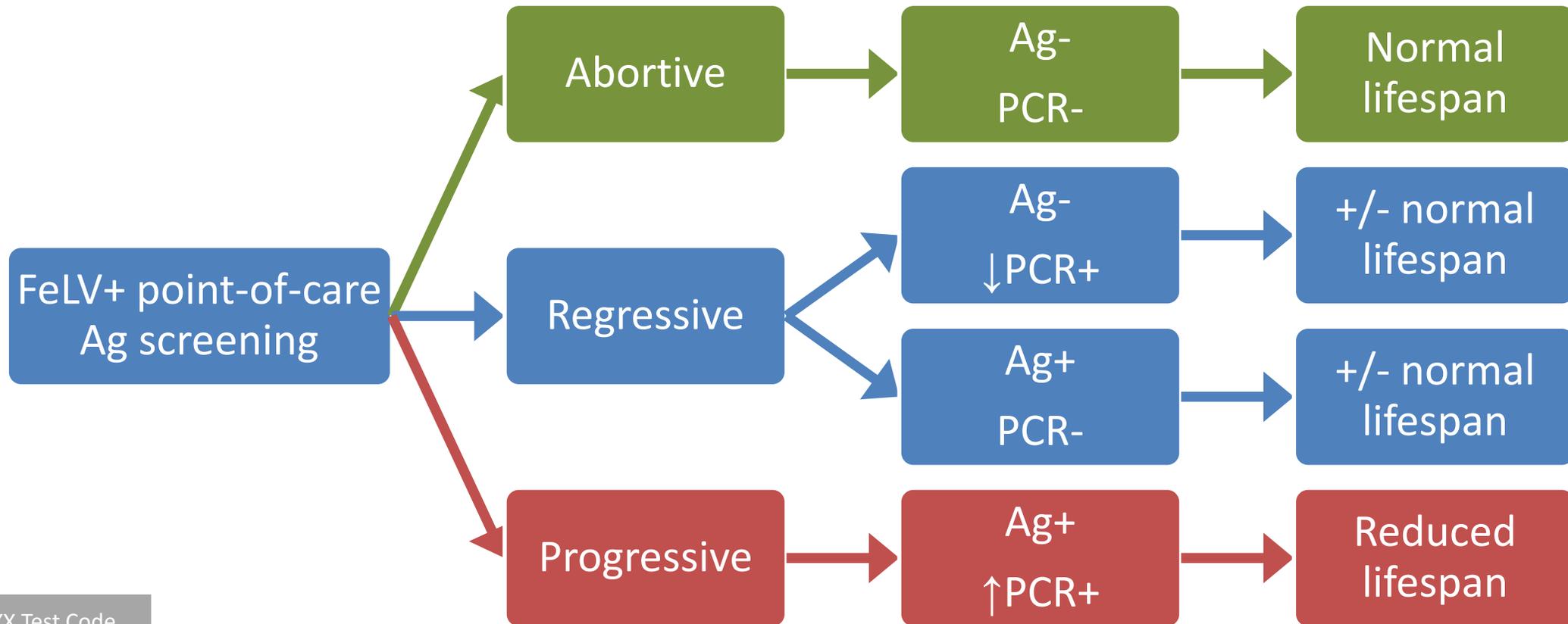


2.

New FeLV  
staging  
plan

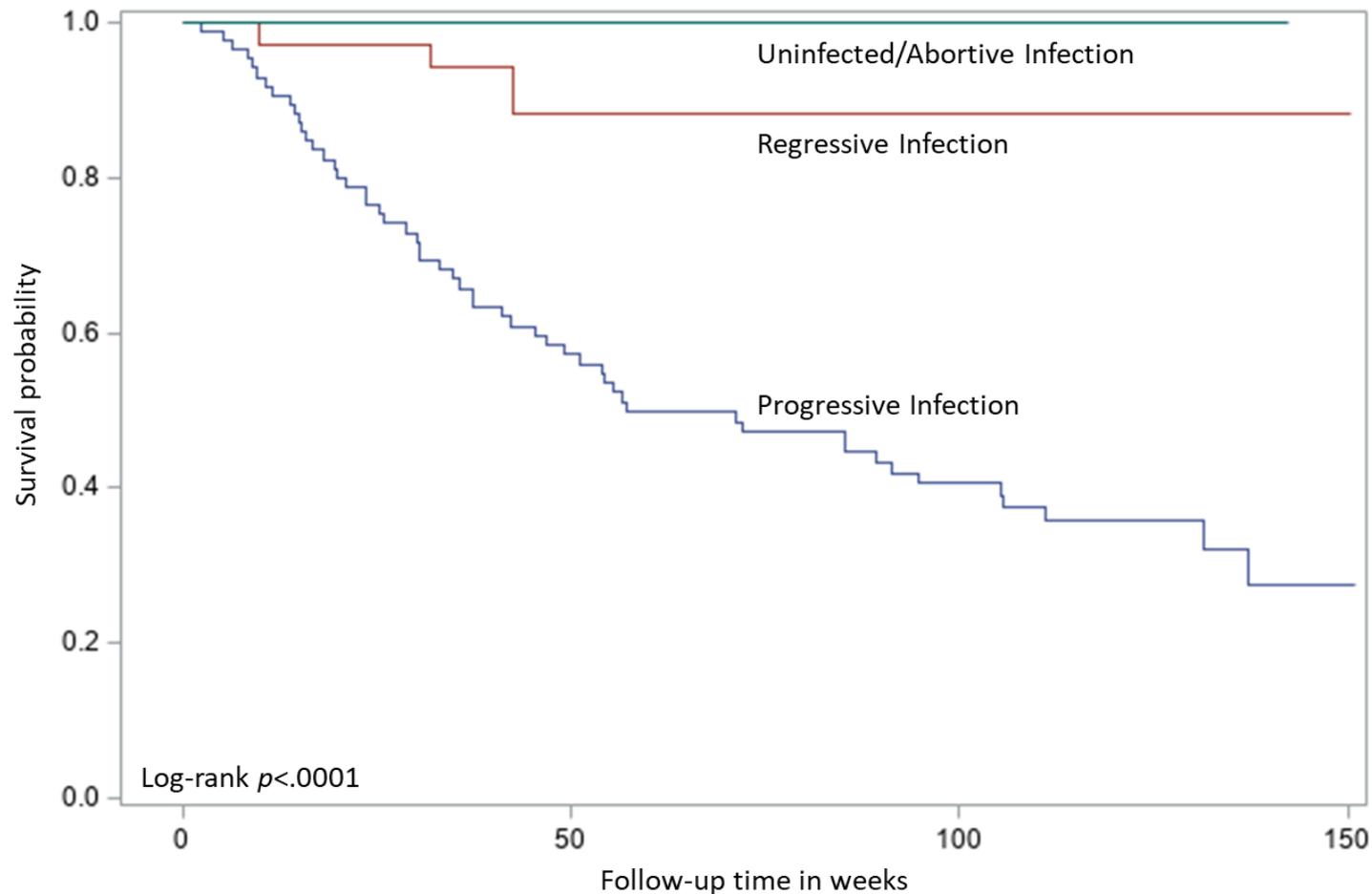


# New FeLV clinical staging



IDEXX Test Code  
26355 FeLV Antigen  
by ELISA with FeLV  
Quant RealPCR™ Test

# Can FeLV test panels predict outcomes?



Ag-/PCR-

Ag-/↓PCR+

Ag+/PCR-

Ag+

↑PCR+

# JASPER: 4-year-old MC



Month	SNAP WB	SNAP Plasma	SNAP Serum	PetChek Plasma	PetChek Serum	PCR	PCR Quant	IFA	Stage
0	Pos	Pos	Pos	Neg	Neg	Pos	Low	IND	Regressive
1	Pos	Pos	Neg	Pos	Neg	Pos	Low	Neg	Regressive
2	Pos	Pos	Neg	Pos	Neg	Pos	Low	Neg	Regressive
3	Neg	Neg	Neg	Neg	Neg	Pos	Low	Neg	Regressive
4	Neg	Neg	Neg	Neg	Neg	Pos	Low	Neg	Regressive
5	Neg	Neg	Neg	Neg	Neg	Pos	Low	Neg	Regressive
6	Pos	Pos	Pos	Neg	Neg	Pos	Low	Neg	Regressive
24	Neg	Neg		Neg		Pos	Low		Regressive
33	Neg			Neg		Pos	Low		Regressive

Jasper is regressive and more likely to have a good long-term outcome

# BASIL: 2-YEAR-OLD FS



Month	SNAP WB	SNAP Plasma	SNAP Serum	PetChek Plasma	PetChek Serum	PCR	PCR Quant	IFA	Stage
0	Pos	Pos	Pos	Pos	Pos	Pos	High	Pos	Progressive
1	Pos	Pos	Pos	Pos	Pos	Pos	High	Pos	Progressive
2	Pos	Pos	Pos	Pos	Pos	Pos	High	Pos	Progressive
3	Pos	Pos	Pos	Pos	Pos	Pos	High	Pos	Progressive
4	Pos	Pos	Pos	Pos	Pos	Pos	High	Pos	Progressive
5	Pos	Pos	Pos	Pos	Pos	Pos	High	Pos	Progressive
6	Pos	Pos	Pos	Pos	Pos	Pos	High	Pos	Progressive
14	Pos	Pos		Pos	Pos	Pos	High		Progressive
23	Pos			Pos	Pos	Pos	High		Progressive

Basil is progressive and more likely to develop disease sooner

# CRAYOLA: 3-MONTH-OLD MC



Month	SNAP WB	SNAP Plasma	SNAP Serum	PetChek Plasma	PetChek Serum	PCR	PCR Quant	IFA	Stage
0	Neg	Neg	Neg	Neg	Neg	Pos	Low	Neg	Regressive
1	Pos	Pos	Pos	Pos	Pos	Pos	High	1% Pos	Progressive
2	Pos	Neg	Neg	Neg	Neg	Pos	Low	Neg	Regressive
3	Pos	Neg	Neg	Neg	Neg	Pos	Low	Neg	Regressive
4	Pos	Neg	Neg	Neg	Neg	Pos	Low	Neg	Regressive
5	Neg	Neg	Neg	Neg	Neg	Neg		Neg	Abortive
6	Neg	Neg	Neg	Neg	Neg	Neg		Neg	Abortive
24	Pos			Pos		Pos	Low		Regressive
32	Pos			Neg		Neg			Discordant

Crayola defies the conventional staging expectations

3.  
FIV+ cats  
can mingle



# Transmission very unlikely in group-housed FIV+ cats

Spayed & neutered

Low stress

No fighting

Survival is longer in homes than in shelters or sanctuaries



The Veterinary Journal  
Volume 201, Issue 2, August 2014, Pages 184-188



## Transmission of feline immunodeficiency virus (FIV) among cohabiting cats in two cat rescue shelters

Annette L. Litster  

*“These results show a lack of evidence of FIV transmission, despite years of exposure to naturally-infected, FIV-positive cats in a mixed household.”*

4.  
Paradigm  
shift for  
mass  
screening



# FeLV and FIV



The 2020 guidelines address an emerging trend in which screening for FeLV and FIV is increasingly shifting from animal shelters, where cats are adopted, to veterinary practices, where animals receive comprehensive care.



Sponsored by **IDEXX**  
LABORATORIES

**UF** | Maddie's® Shelter  
Medicine Program

# Still needed in shelters



## Test high-risk cats

- Symptomatic
- History of exposure

## Test to avoid in-shelter risk

- Group housing
- Prior to significant medical intervention
- Legal cases

## Outstanding communication

- Adopters understand need for early veterinary visit/segregation
- Assure smooth hand-off of care from shelter to veterinarian
- Veterinarians empowered to support adopters and FeLV+ cats



780.471.1774  
ehs@edmontonhumanesociety.com  
edmontonhumanesociety.com  
13620 - 163 Street NW, Edmonton AB T5V 0B2

### FeLV/FIV testing

The Edmonton Humane Society has recently **changed its protocol regarding FeLV/FIV testing**. The following information addresses the rationale behind this decision.

Historically, all kittens and cats in our care were tested for FeLV/FIV using an in-house ELISA test. However, research has shown that less than 2.5% of the North American feline population test positive for either FeLV or FIV. Considering the low prevalence of these diseases, we considered whether routine testing for all cats was the best use of our resources. **Every month, thousands of dollars are spent on testing**, and this does not account for the time and staffing it takes to perform these tests. In addition, the **results of these tests are often misunderstood**.

### Still Testing

- High-risk cats
- Sick cats
- Group-housed cats

### No Longer Testing

- Single-housed cats
- Cats < 6 months

## 2020 AAFP Feline Retrovirus Testing and Management Guidelines

**Table 3** Feline leukemia virus (FeLV) and feline immunodeficiency virus (FIV) testing and vaccination recommendations for screening healthy cats in animal shelters and free-roaming populations in North America

	<b>FeLV/FIV testing</b>	<b>FeLV vaccination</b>	<b>FIV vaccination</b>
<b>Individually housed cats</b>	Optional	Not recommended	Not recommended
<b>Short-term group-housed cats</b>	Recommended	Not recommended	Not recommended
<b>Foster cats</b>	Recommended	Optional	Not recommended
<b>Long-term group housing and sanctuaries</b>	Recommended	Recommended	Not recommended
<b>Trap–neuter–return cats</b>	Not recommended	Not recommended	Not recommended

5.  
Adoption is  
better



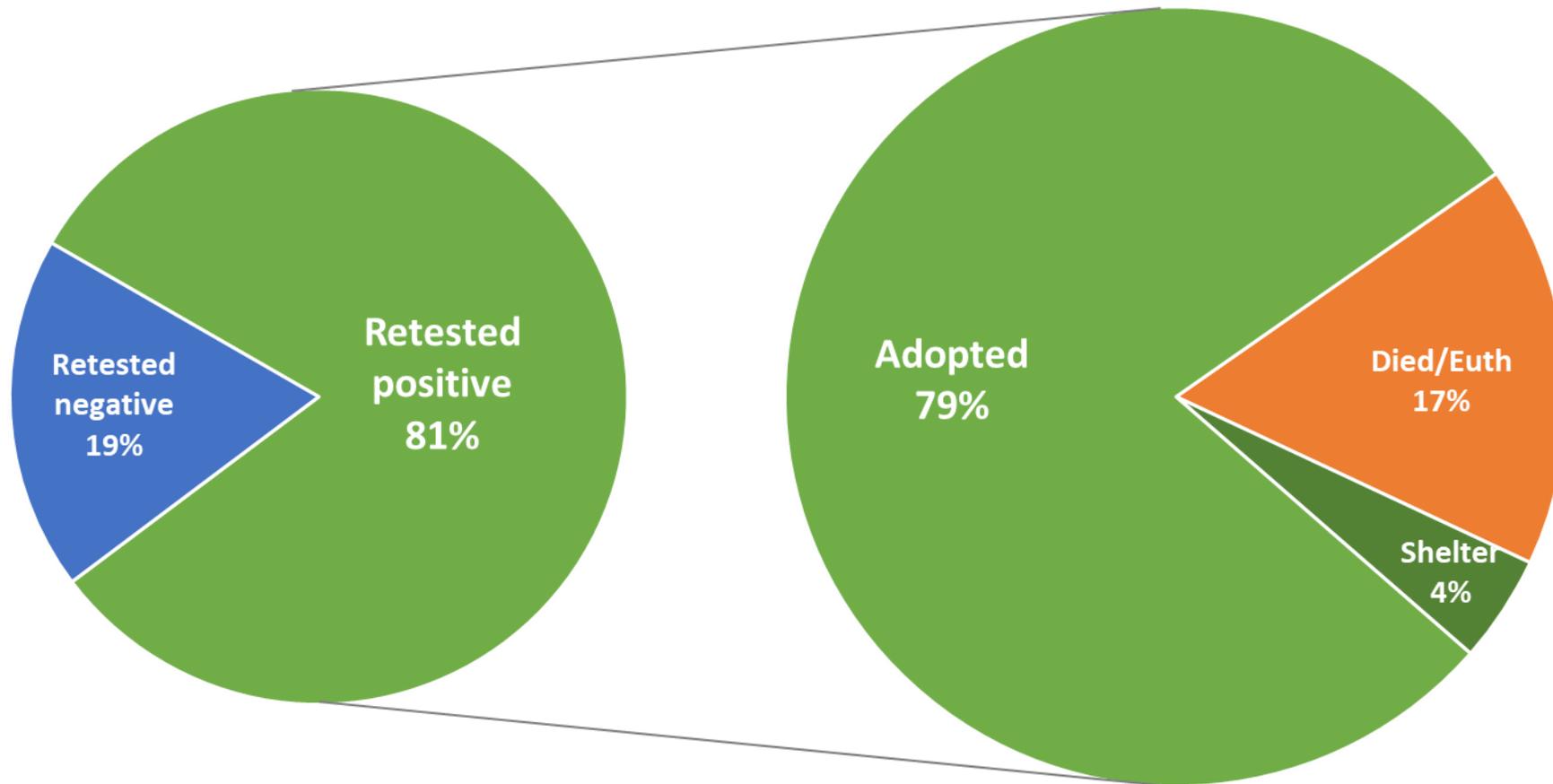


# austin pets alive!

Helping People Help Pets

# 801 cats referred to FeLV adoption program

---

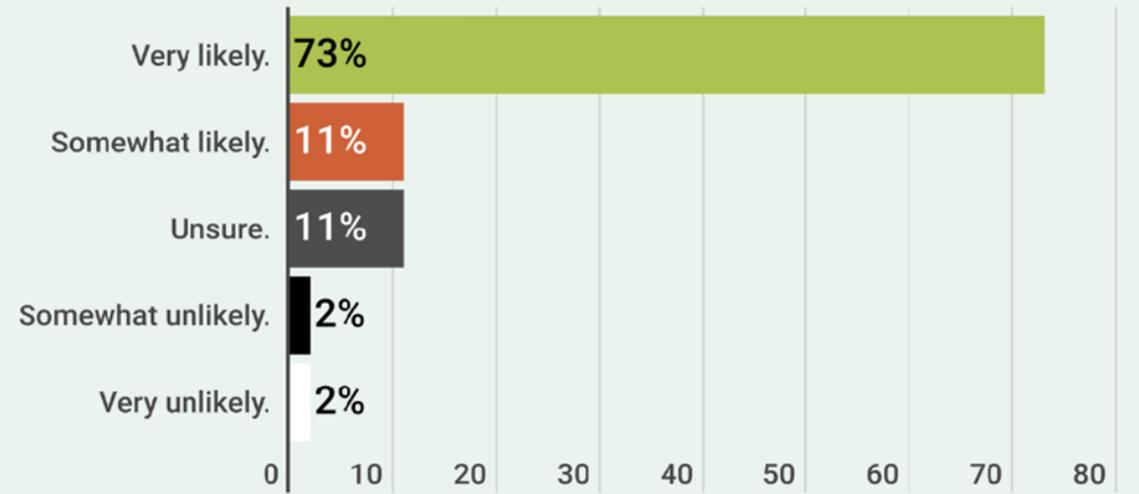


# Adopter satisfaction

Overall how would you rate your experience living with this cat?



How likely would you be to adopt a FeLV cat again, if you were in the same situation but knowing what you know now about FeLV?







## Shelter launches adoption program for FeLV-positive cats – and they all go home!

October 25, 2016

Can animal shelters find homes for cats who test positive for feline leukemia (FeLV)? That was the question at Chicago's Tree House Humane Society. Here's what happened when they decided to try, told by their director of veterinary services, Dr. Emily Swiniarski. Our adoptions department has never considered FeLV-positive cats for adoption before. They were [...]



**felypositive**



## Tree House Humane Society

Uptown - 1212 West Carmen, Chicago, IL 60640  
Bucktown - 1629 North Ashland, Chicago, IL 60622  
TreeHouseAnimals.org | email - info@treehouseanimals.org  
phone - 773-784-5488

### FACT SHEET:

#### FELINE LEUKEMIA VIRUS (FeLV)

##### ***What is Feline Leukemia Virus?***

Feline leukemia virus, also known as "FeLV," is the cause of a variety of diseases. As a retrovirus, it replicates itself inside living cells, making it impossible to cure. Specifically, FeLV invades and replicates in cells of the cat's immune system and tissues that create blood cells. FeLV is specific to cats and does not pose a risk to other animals or people.

##### ***What diseases does the virus cause?***

In many cats, FeLV infection results in suppression of the immune system. This means that the cat is less able to defend him/her-self against a wide range of infections that would not normally cause a problem in healthy cats. A variety of symptoms could develop, and there is a progressive deterioration in their health over time. However, a FeLV cat can live for many years without illness.

FeLV can cause diseases such as enteritis (chronic diarrhea), eye disease or stomatitis (painful inflammation of the mouth). Occasionally the virus can cause cancer, but this is uncommon. Cancers can occur in a variety of tissues, organs and body sites, depending on the type and location of cells that have been infected with FeLV. The most common tumor associated with FeLV is that of lymphoid (immune) cells known as lymphoma. These tumors may occur at single or multiple sites in the body.

##### ***How common is FeLV?***

# They Did It: Featuring FeLV Cats in a Shelter Cafe

## Who

Tree House Humane Society of Chicago, IL

## Did What

Tree House Humane Society created the first cat café located within a shelter in the city of Chicago. What makes this cafe even more unique? It features FeLV positive cats only!



WE'RE HERE TO MAKE A DIFFERENCE.

WE ARE HERE TO PUT A SMILE  
ON YOUR FACE AND A CAT ON  
YOUR LAP ALL WHILE HELPING  
OUT CATS THAT NEED US MOST.

MEET OUR CATS



BOOK A TABLE

PRIVATE EVENTS

ABOUT

OUR CATS

LOCATIONS

PRESS

BLOG





*“People are adopting these cats, loving them, and not regretting it.”*      **–Dr. Sheila Segurson, Maddie’s Fund**

---

## Helena and Jacki





A partnership of Maddie's Fund® UC Davis Koret Shelter Medicine Program, and Maddie's Shelter Medicine Program at the University of Florida

[ABOUT](#)

[BLOG](#)

[WHO'S INVOLVED](#)

[RESOURCES](#)

[GET INVOLVED](#)

# BECAUSE EVERY CAT COUNTS.

MILLION CAT CHALLENGE IS A JOINT PROJECT OF:  
MADDIE'S SHELTER MEDICINE PROGRAM AT THE UNIVERSITY OF FLORIDA &  
UC DAVIS KORET SHELTER MEDICINE PROGRAM, SPONSORED BY MADDIE'S FUND



“ The Million Cat Challenge thanks Maddie's Fund for their generous sponsorship and their dedication to saving the lives of our nation's cats ”

Lives Saved\*  
**2,227,528**

Thanks to Maddie!

FeLV research breakthroughs made possible by a collaboration with Maddie's Fund, University of Florida, Austin Pets Alive!, IDEXX, & the Winn Feline Foundation