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# MORTALITY IN NEONATAL AND PEDIATRIC KITTENS: DIAGNOSTIC STRATEGIES OF PRACTITIONERS

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## CONTEXT

Kitten mortality is frequent  $\approx 8\%$  in the feline species over the 2 first months of age [1].  
Identification of the cause is challenging (weak clinical expression + paucity of macroscopical lesions)  
→ vets ask for PCR analysis

## QUESTIONS

In case of a kitten death over the first 4 months of life, what do French vet practitioners perform: how many samples?  
How many and which pathogens? Does their diagnostic strategy depend on the symptoms observed before death?  
On the kitten age?

## MATERIAL AND METHOD

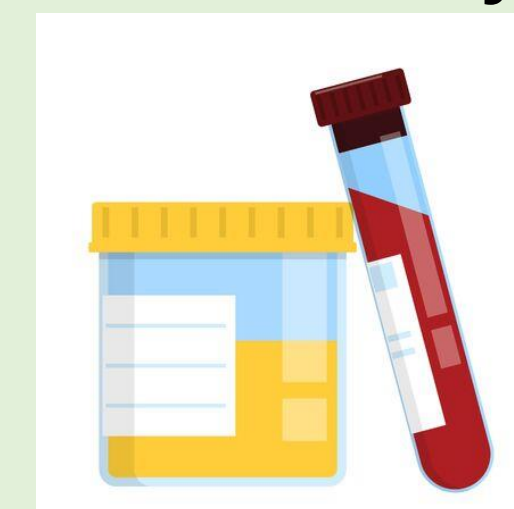
**272** dead kittens  
born alive  
**died before**  
**4 months of age**  
in France  
2010-2016



Antemortem  
clinical data



Samples  
for PCR analysis



Molecular biology lab

## RESULTS

**2.0±1.3 samples**  
collected per kitten  
(range 1-8)  
(only 1 sample in 47% of kittens)

No variation  
with the age of the kitten

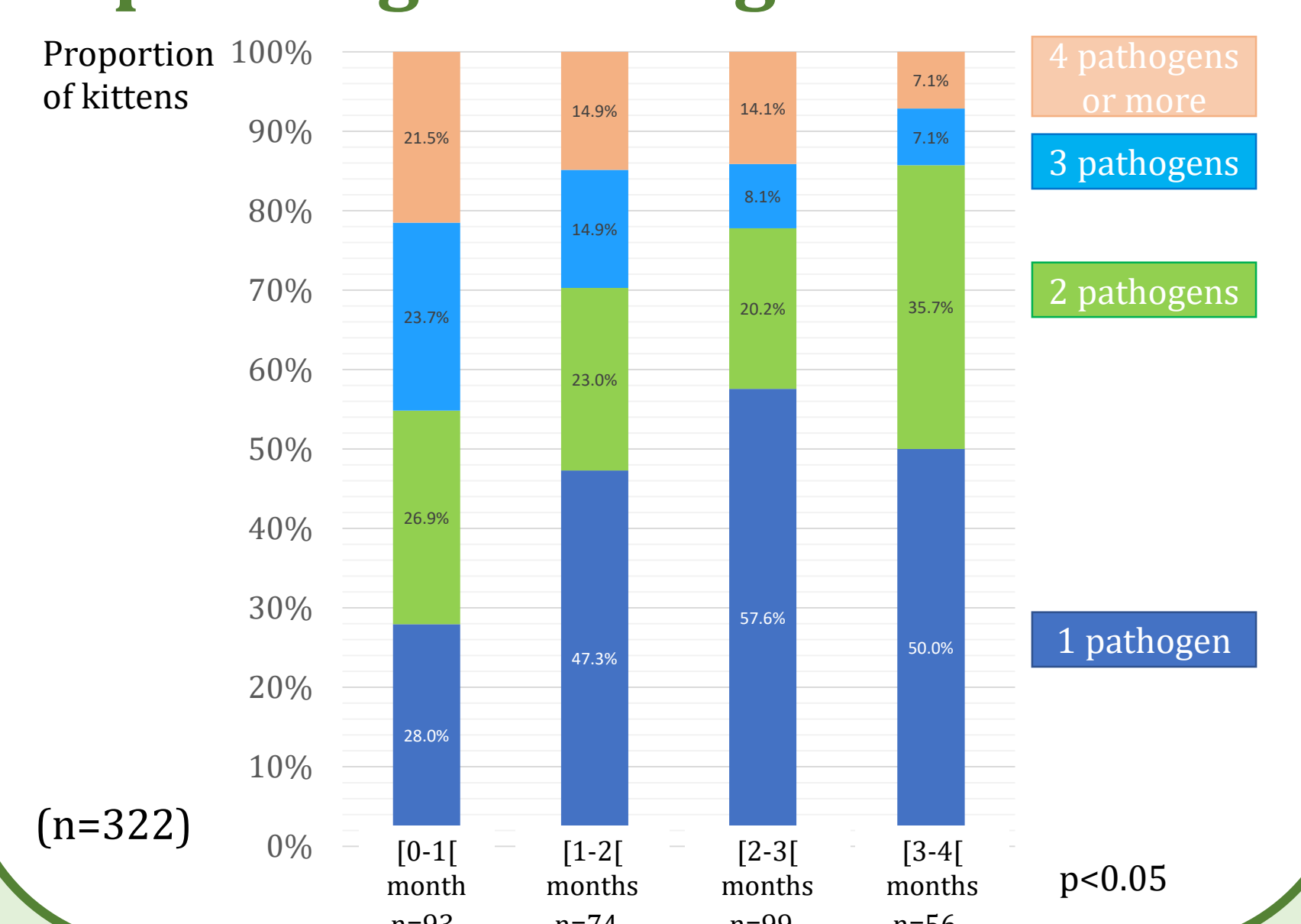
## Diagnostic strategy depending on the ante mortem clinical expression

Pathogen (the 7 most frequently targeted out of 14 possible)		Digestive signs only	Respiratory signs only	Effusion only	Absence of clinical signs or only non specific signs
Number of kittens		66	47	30	72
		% of kittens for which the pathogen has been targeted			
Feline parvovirus	FPV	79	10	10	46
Feline coronavirus	FCoV	35	17	77	53
Feline calicivirus	FCV	26	68	20	36
Feline herpesvirus	FHV	11	62	7	39
<i>Chlamydia psittaci</i>		4	34	7	25
<i>Bordetella bronchiseptica</i>		4	43	10	7
<i>Mycoplasma felis</i>		1	19	3	4

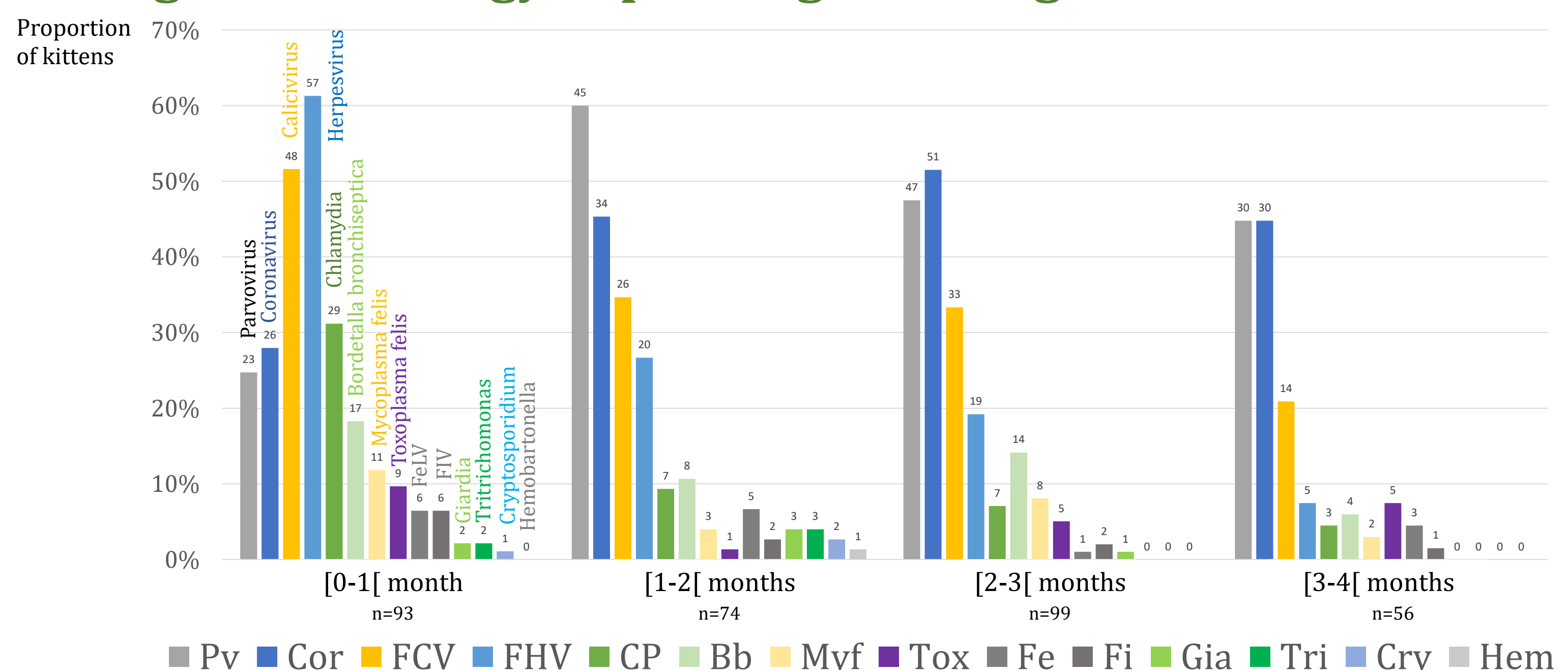
Frequencies of testing differ significantly depending on the symptoms developed ante mortem (p<0.05)

**2.1±1.4**  
infectious agents  
targeted  
per kitten  
(range 1-7)

## Number of pathogens targeted depending on the age of the kitten



## Diagnostic strategy depending on the age of the kitten at death



## DISCUSSION

- Largest cohort of dead kittens ever published [2] but representing less than 1% of the estimated number of kittens died in France over the same period.
- Number of samples per kitten did not vary with age.
- There is a discrepancy between the nature of samples and the clinical signs exhibited ante mortem.
- The number of targeted pathogens decreased with age and their nature varied depending with age.
- Only the pathogens targeted by the vet were analysed, making impossible the determination of the prevalence of each pathogen. A systematic analysis of a selection of pathogens (depending on the age of the kitten and/or the symptoms observed *ante mortem*) would be the only way to identify most frequent pathogens and determine the actual prevalence of each. Such a study would be of major interest to increase elucidation rate in case of the death of a kitten.

[1] FOURNIER A, MASSON M, CORBIERE F, MILA H, MARIANI C, GRELLET A, CHASTANT S. Epidemiological analysis of reproductive performances and kitten mortality rates in 5,303 purebred queens of 45 different breeds and 28,065 kittens in France. *Reproduction in Domestic Animals*, 2017, vol 52(2). Pages 153-157.

[2] CAVE TA, THOMPSON H, REID SWJ, HODGSON DR, ADDIE DD. Kitten mortality in the United Kingdom: a retrospective analysis of 274 histopathological examinations (1986 to 2000). *Veterinary Record* 2002, vol. 151, n° 17, p. 497-501



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