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On behalf of the EFFORT consortium

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CONTEXT



RESEARCH GOAL

Description of AMU and AMR in dogs and cats in three European countries

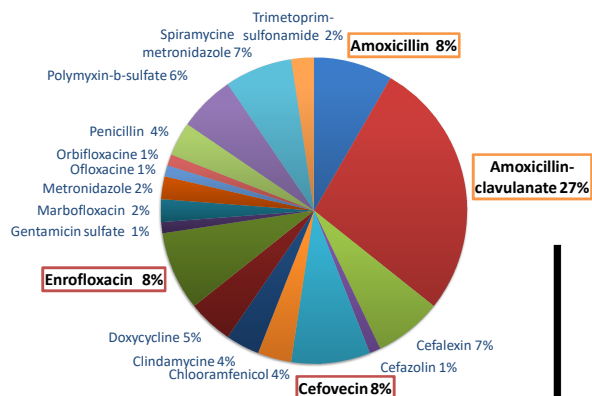
RESULTS on AMU

Percentage treated

Country	Dogs	Cats	Dogs	Cats
A	49-48	22%	25%	18%
D	50-50	16%	6%	26%
F	52-54	20%	9%	31%

- 19% of the animals received at least one AM treatment
- Average TI of the treated animals = 4% → treated animals were on average treated with a DDD_{ca} for 15 days per year

Prescription frequency of active compounds



Treatment characteristics

Number of treatments	Min	Max	Average
55 (Oral)	1 d	10 d	10 d
18 (Injectable)	1 d	14 d	6 d
11 (Topical)	1 d	42 d	9 d

- Critically important AM were amongst the most frequently prescribed AM in the sampled cats and dogs!
- High priority
- Highest priority

METHODOLOGY

Antimicrobial Usage

- Data collection on AMU over 1 year in 303 cats and dogs from
- Quantification of AMU using treatment incidence (TI) based on:
 - Defined Daily Dose_{CompanionAnimals} (DDD_{ca}) → values derived from SPC

$$TI = \frac{DDD_{ca} \text{ (from SPC)} \times \text{Treatment duration} \times \text{Standard weight}}{DDD_{ca} \text{ (from SPC)} \times 365 \text{ days} \times \text{Standard weight}} \times LA \text{ factor} \times 100$$

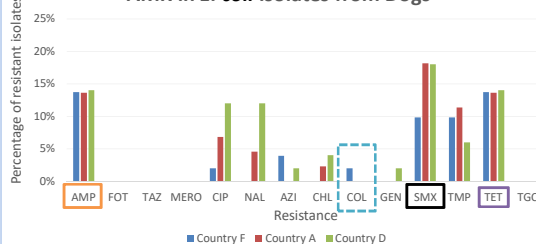
- Qualitative analysis of AMU [administration route, active compounds,...]

Antimicrobial Resistance

- Faecal samples of all 303 cats and dogs
- Isolation of *E. coli*
- Determination of MIC values of 14 different AMs (antimicrobial(s))

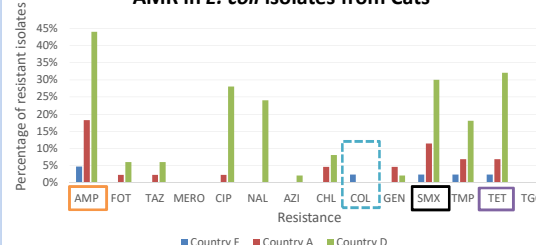
RESULTS on AMR

AMR in *E. coli* isolates from Dogs



- 282 *E. coli* isolates
 - 145 Dogs
 - 137 Cats
- Colistin resistance was found in 2 isolates

AMR in *E. coli* isolates from Cats



- Most frequently found resistance
 - Ampicillin 18%
 - Sulfamethoxazole 15%
 - Tetracycline 14%
- 27% resistant to at least one AM
 - Of which 66% resistant to 2 or more unrelated AM

- Broad-spectrum and critically important AM were frequently used in cats & dogs
- Prevalence of resistance against colistin, a last-resort antimicrobial in human medicine, is worrisome
- Companion animals should be considered as a potential source of AMR for humans

