

TREATING DOG & CAT UTIs

CLINICAL TIPS FROM FIVE YEARS OF URINE C&S DATA 2014-2019



Open access research article:

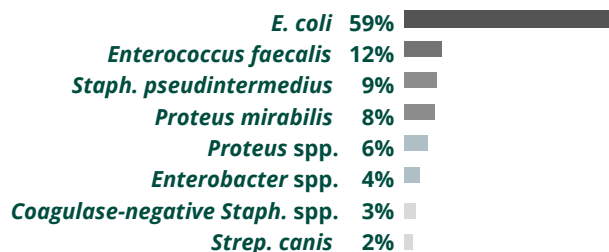
Ri Scarborough, Kirsten Bailey, Brad Galgut, Adam Williamson, Laura Hardefeldt, James Gilkerson, Glenn Browning. [Use of Local Antibiogram Data and Antimicrobial Importance Ratings to Select Optimal Empirical Therapies for Urinary Tract Infections in Dogs and Cats](#). *Antibiotics*. 2020; 9(12):924. <https://doi.org/10.3390/antibiotics9120924>



BACTERIA ISOLATED

E. coli was the most prevalent species, but other species were also important.

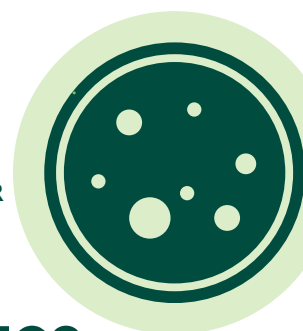
Unsurprisingly, free-catch samples were more likely to result in mixed growths.



LOW RESISTANCE NOW, BUT CAUTION NEEDED

Overall, there was little acquired resistance and very little multi drug resistance (MDR) in dog and cat urinary isolates. This compares favourably with international studies. BUT:

- *Enterococcus faecalis* and *Strep. canis* had *almost universal* resistance to **enrofloxacin** (higher than reported elsewhere)
- Animals that had multiple samples cultured in the study period were **six times more likely** to have an MDR *E. coli* in their fourth sample than their first ($p < 0.001$) suggesting significant selection of resistance through intervening antibiotic therapy.



NO NEED FOR THE 'BIG GUN' ANTIBIOTICS

- **94%** of isolates in the 5614 samples were susceptible to *at least one* of the ASTAG **low-importance antimicrobials tested** (1)
- Only **4%** of isolates justified the use of **medium-importance amoxyclav**
- Only **1%** of isolates were resistant to all **low-** and **medium-importance** antimicrobials tested.
 - Of this 1%, two-thirds were susceptible to enrofloxacin, but *none* was susceptible to cefovecin, i.e.
 - Only **0.6%** of isolates needed **enrofloxacin** (high importance); and
 - **ZERO** isolates submitted in five years justified the use of **cefovecin** (high importance)

USE YOUR MICROSCOPE TO CHOOSE EMPIRICAL RX

C&S is always advisable to guide antibiotic therapy. BUT many laboratory cutoffs (including those in this study) underestimate the in vivo effect of **amoxicillin**, which is *highly* concentrated in the bladder.

If treating empirically, our findings support the **Aus Vet Prescribing Guidelines** (2) and **International Guidelines** (3) recommendations for treatment of sporadic UTI: amoxicillin or TMS. Our analysis of this large sample of local isolates adds practical guidance for choosing between the two.

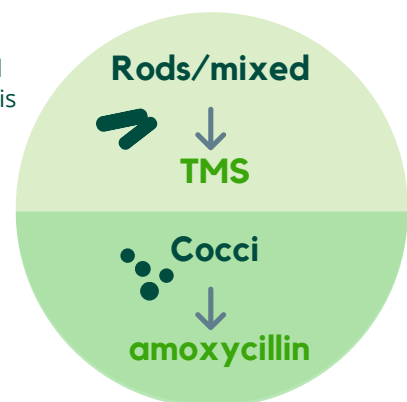
Where bacterial morphology can be determined via in-clinic microscopy:

- Treat **rods** with **TMS**
- Treat **cocci** with **amoxicillin**

Where morphology is mixed or unknown:

- Use **TMS** as **first-line** treatment
- Use **amoxicillin** as **second-line** treatment

CLINICAL PEARL
Selectively treating **rods with TMS** and **cocci with amoxicillin** achieves an equivalent cure rate to using medium-importance **amoxicillin-clavulanate**



Guideline-recommended duration is **3-5 days** only.

Treatment goal is **resolution of clinical signs**, not elimination of bacteriuria (3).

Short course <5d *much* less likely to cause serious adverse effects occasionally seen with TMS.



1. Australian Strategic and Technical Advisory Group on AMR (2018) [Importance Ratings and Summary of Antibacterial Uses in Human and Animal Health in Australia](#)

2. University of Melbourne (2019) [Australian Small Animal Prescribing Guidelines](#)

3. Weese et al (2019) [International Society for Companion Animal Infectious Diseases \(ISCAID\) guidelines for the diagnosis and management of bacterial urinary tract infections in dogs and cats](#)