Antimicrobial Stewardship in Companion Animals: Be Aware of the Dog

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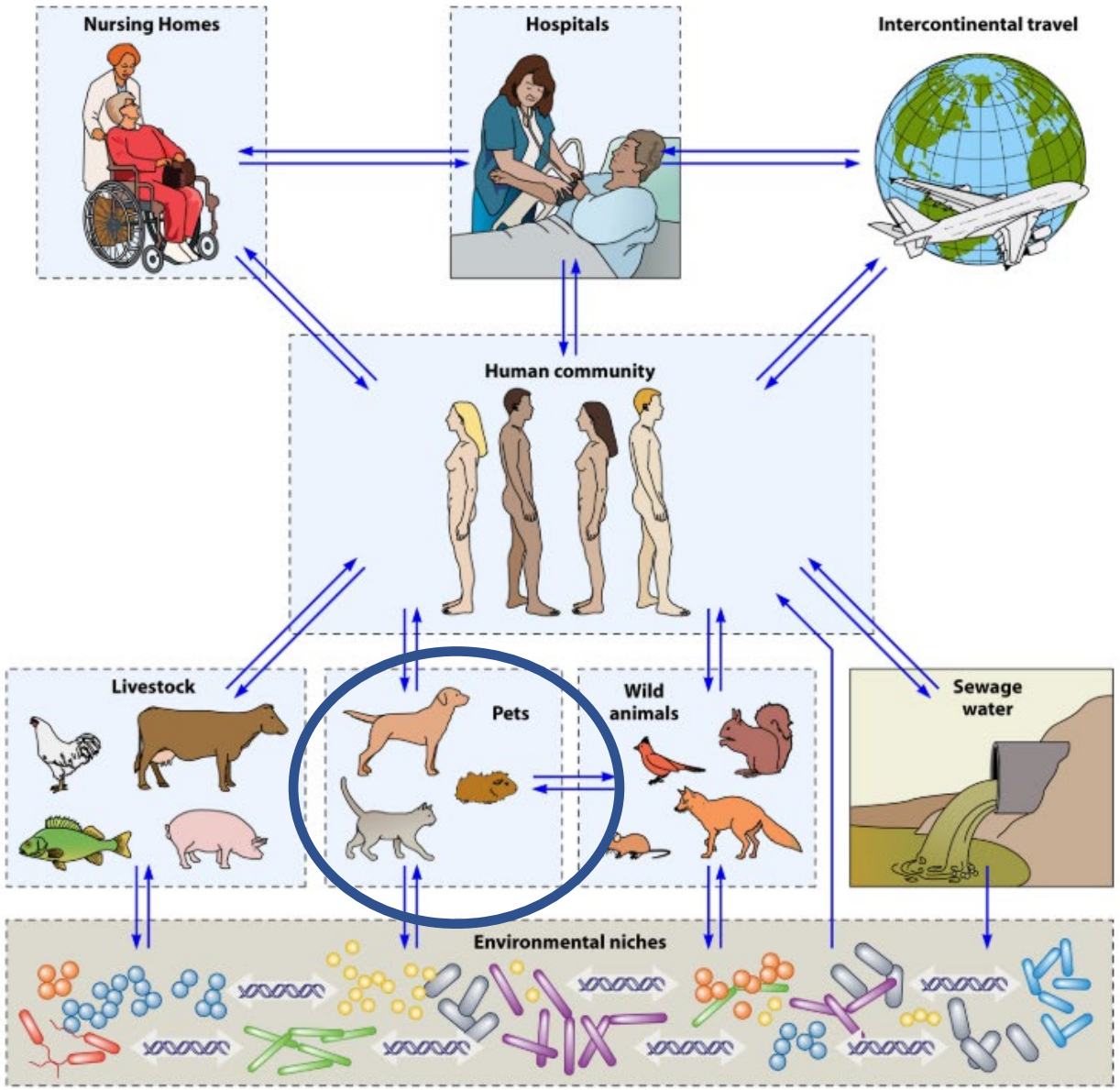
PREVENTING ANTIMICROBIAL RESISTANCE TOGETHER



Woerther et al. 2013
doi:10.1128/cmr.00023-13

Companion animal practice

- Primary care, out-patient procedures, small hospitals
- Dominated by private sector
- Single to a few vets
- Owned by vets
- More akin to establishing AMS in human-health community-setting

AMS in companion animals

- Patient outcomes

VS

- Human health
  - Close-contact
  - Often exposed to HPCIAs

- Environmental contamination

What is the burden of AMR in companion animals?

Isgren *et al. BMC Veterinary Research* (2019) 15:268
https://doi.org/10.1186/s12917-019-2011-9

BMC Veterinary Research

RESEARCH ARTICLE Open Access

Emergence of carriage of CTX-M-15 in faecal *Escherichia coli* in horses at an equine hospital in the UK; increasing prevalence over a decade (2008–2017)

C. M. Isgren[1*], T. Edwards[2], G. L. Pinchbeck[1], E. Winward[2], E. R. Adams[2], P. Norton[2], D. Timofte[1,3], T. W. Maddox[4], P. D. Clegg[4] and N. J. Williams[1]

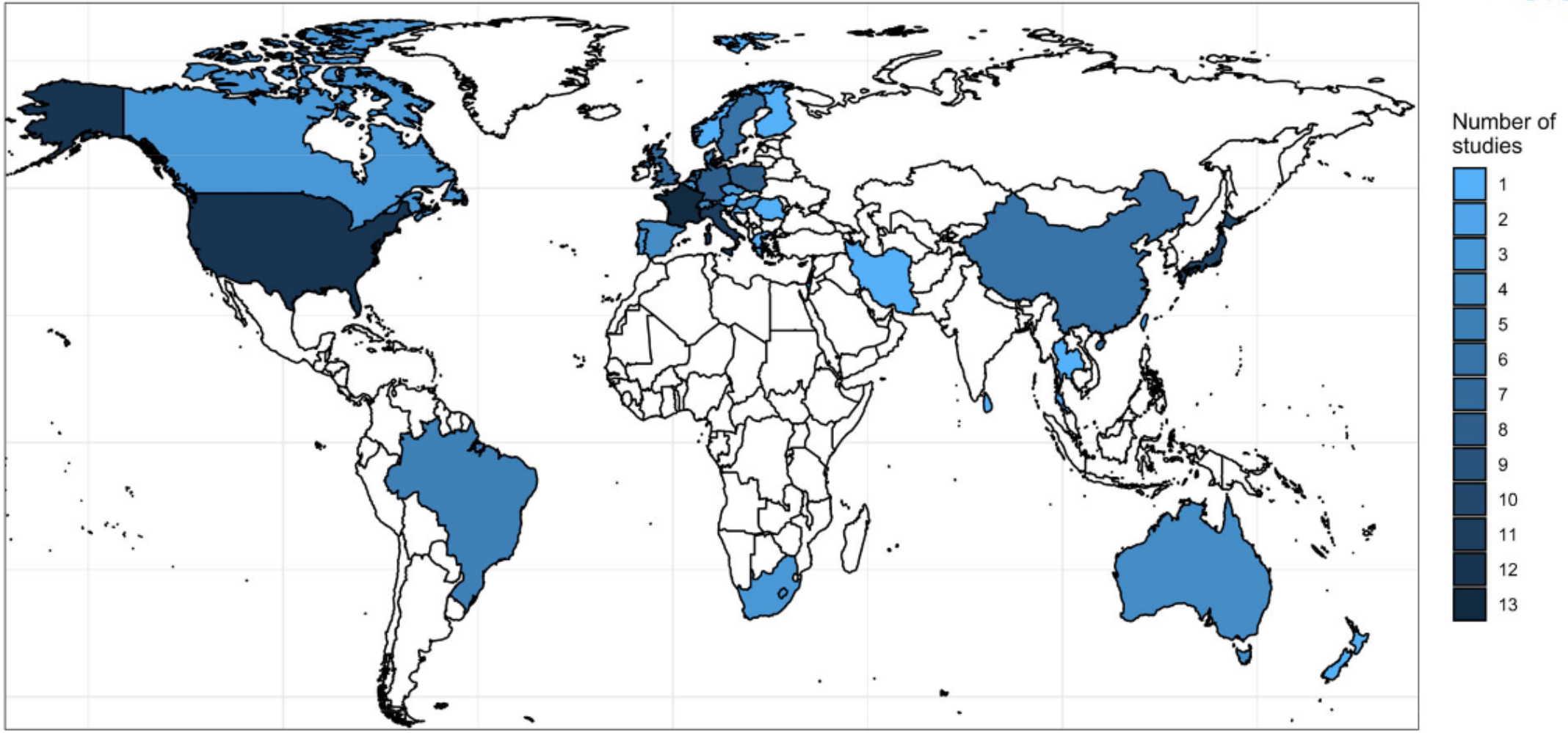
J Antimicrob Chemother 2014; **69**: 2676–2680
doi:10.1093/jac/dku217 Advance Access publication 27 June 2014

Journal of Antimicrobial Chemotherapy

Clonal spread of highly successful ST15-CTX-M-15 *Klebsiella pneumoniae* in companion animals and horses

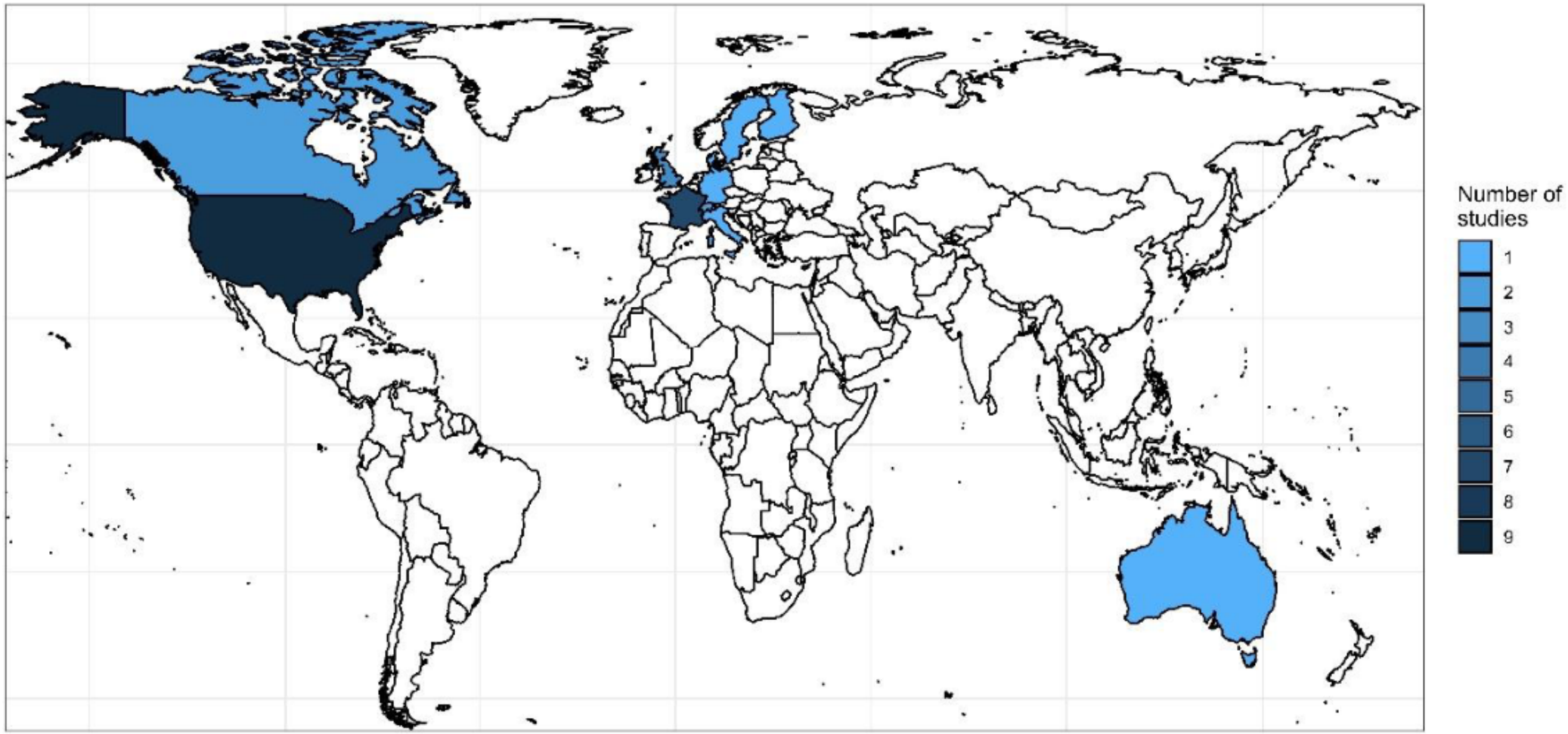
Christa Ewers[1*], Ivonne Stamm[2], Yvonne Pfeifer[3], Lothar H. Wieler[4], Peter A. Kopp[2], K. Schønning[5,6], Ellen Prenger-Berninghoff[1], Sandra Scheufen[1], Inka Stolle[1], Sebastian Günther[4] and Astrid Bethe[4]

Assessment of animal diseases caused by bacteria resistant to antimicrobials: Dogs and Cats



Nielsen et al.
doi: 10.2903/j.efsa.2021.6680

Assessment of animal diseases caused by bacteria resistant to antimicrobials: Horses



Nielsen et al.
doi: 10.2903/j.efsa.2021.7112

Biggest threats

Dogs and cats

- *Staphylococcus pseudintermedius*
- *Escherichia coli*
- *Pseudomonas aeruginosa*

Horses

- *Staphylococcus aureus*
- *Escherichia coli*
- *Rhodococcus equi*

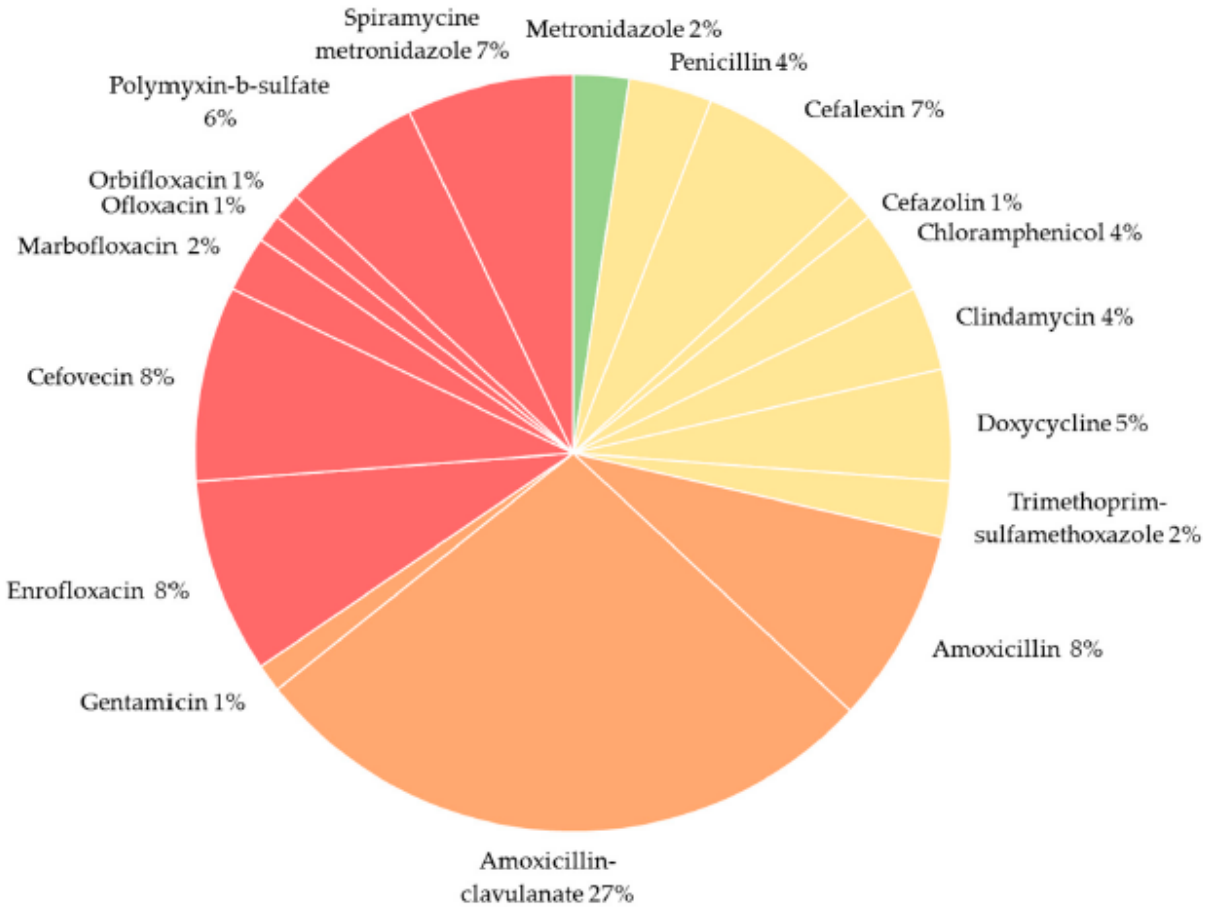
antibiotics

MDPI

Article

Antimicrobial Usage and Resistance in Companion Animals: A Cross-Sectional Study in Three European Countries

n =303
19% (58) received antibiotics
Treatment incidence (per 100 animal days at risk):
0.9 (dogs), 0.5 (cats)
c.f. +/- 9 for broilers and pigs



Green – Important antimicrobial
Yellow – Highly important antimicrobial
Orange – Critically important antimicrobial
Red - Critically important antimicrobial of highest priority

Joosten et al. 2020
doi:10.3390/antibiotics9020087

JAC Antimicrob Resist
https://doi.org/10.1093/jacamr/dlab194

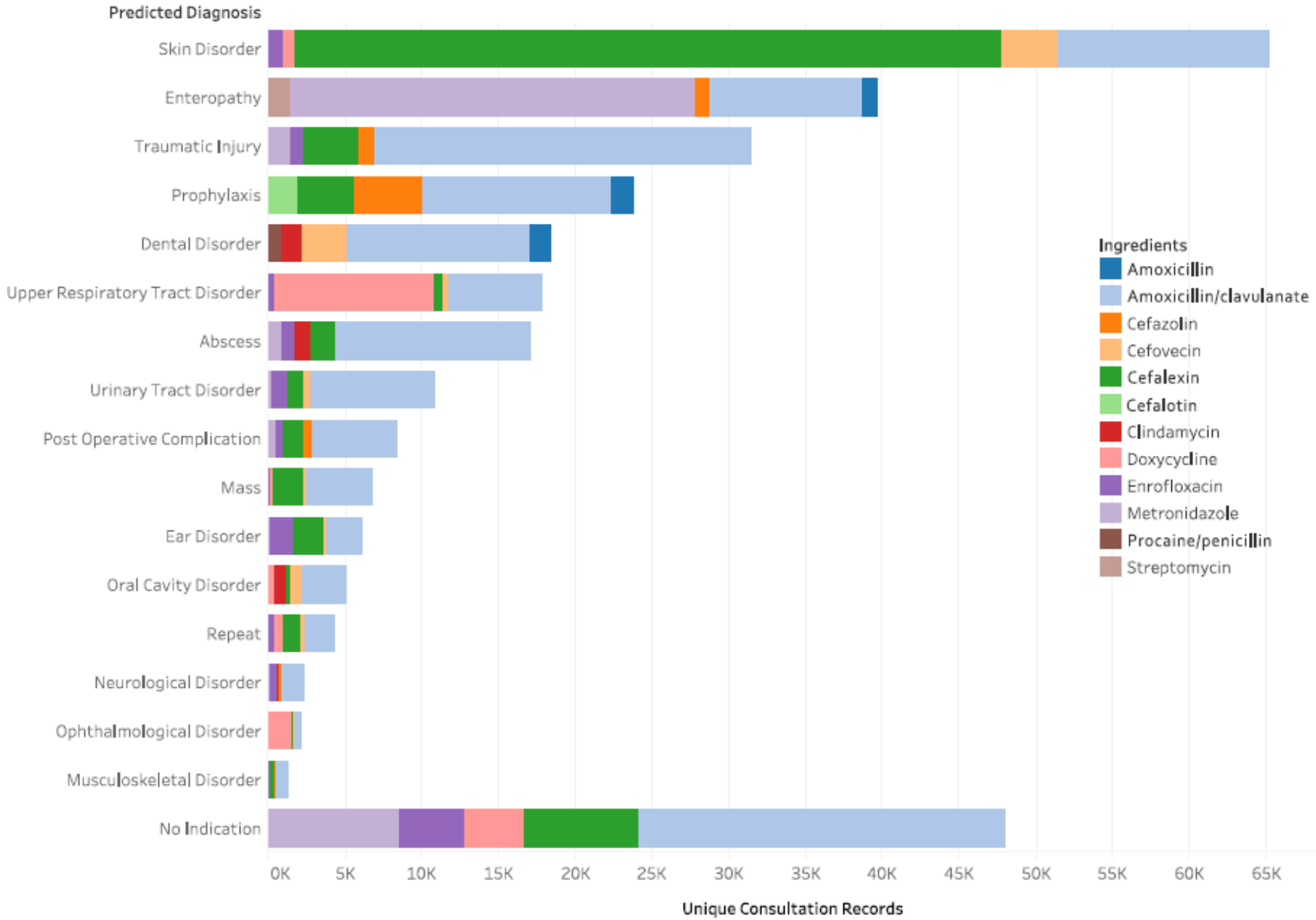
JAC-Antimicrobial Resistance

Evaluating the dose, indication and agreement with guidelines of antimicrobial use in companion animal practice with natural language processing

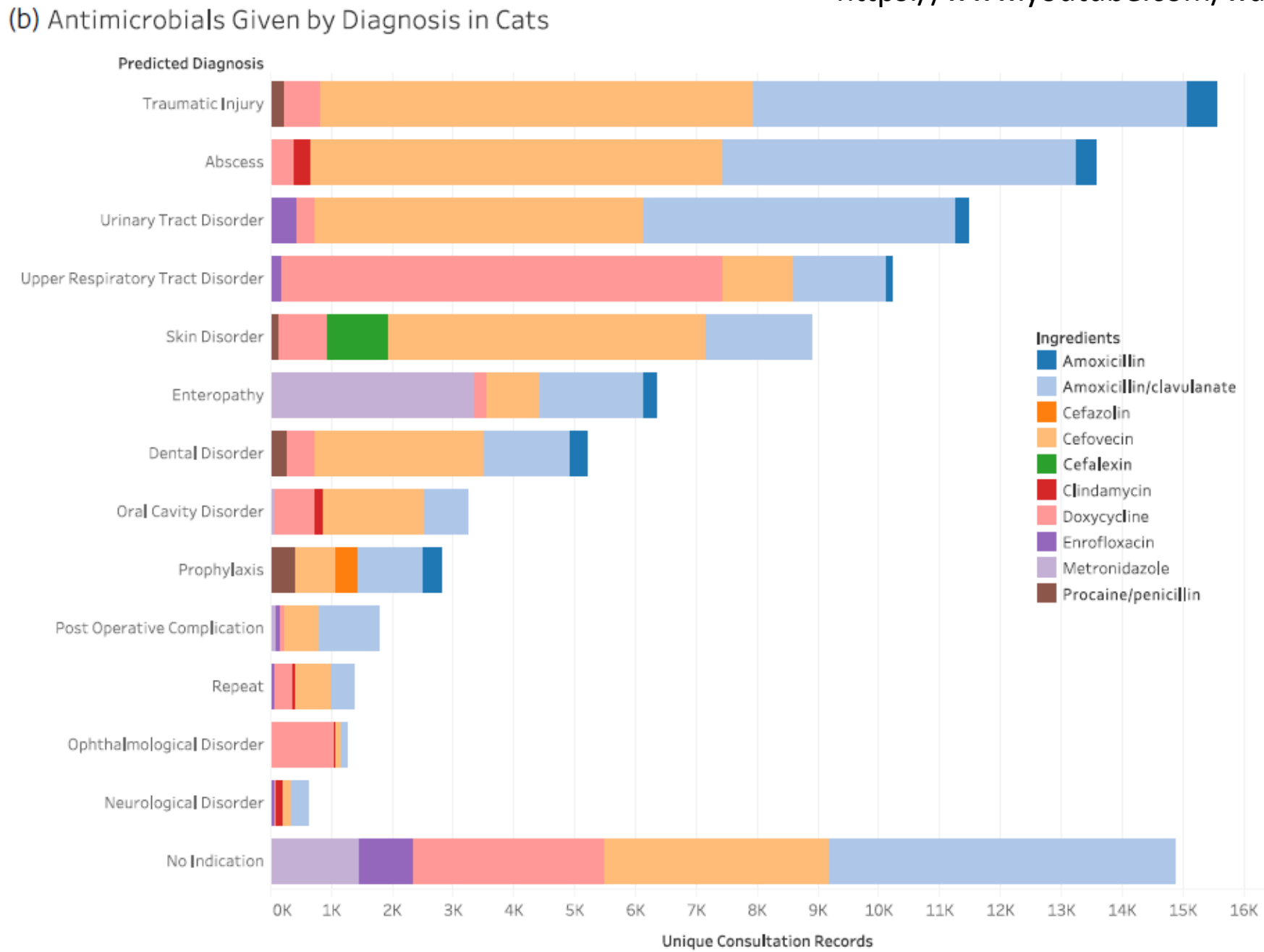
Brian Hur [1,2]*, Laura Y. Hardefeldt [1], Karin M. Verspoor [2,3], Timothy Baldwin[2] and James R. Gilkerson[1]

- 5 year period, 137 practices
- Dose, duration and diagnosis
  - Dogs - 133046 consultations
  - Cats - 40841 consultations
- Consistent with treatment guidelines in 73% cases

(a) Antimicrobials Given by Diagnosis in Dogs



https://www.youtube.com/watch?v=yTFfsRtHgCE



Hur et al. 2022
doi.org/10.1093/jacamr/dlab194

DOI: 10.1111/jvim.15083

STANDARD ARTICLE

Journal of Veterinary Internal Medicine Open Access

ACVIM American College of Veterinary Internal Medicine

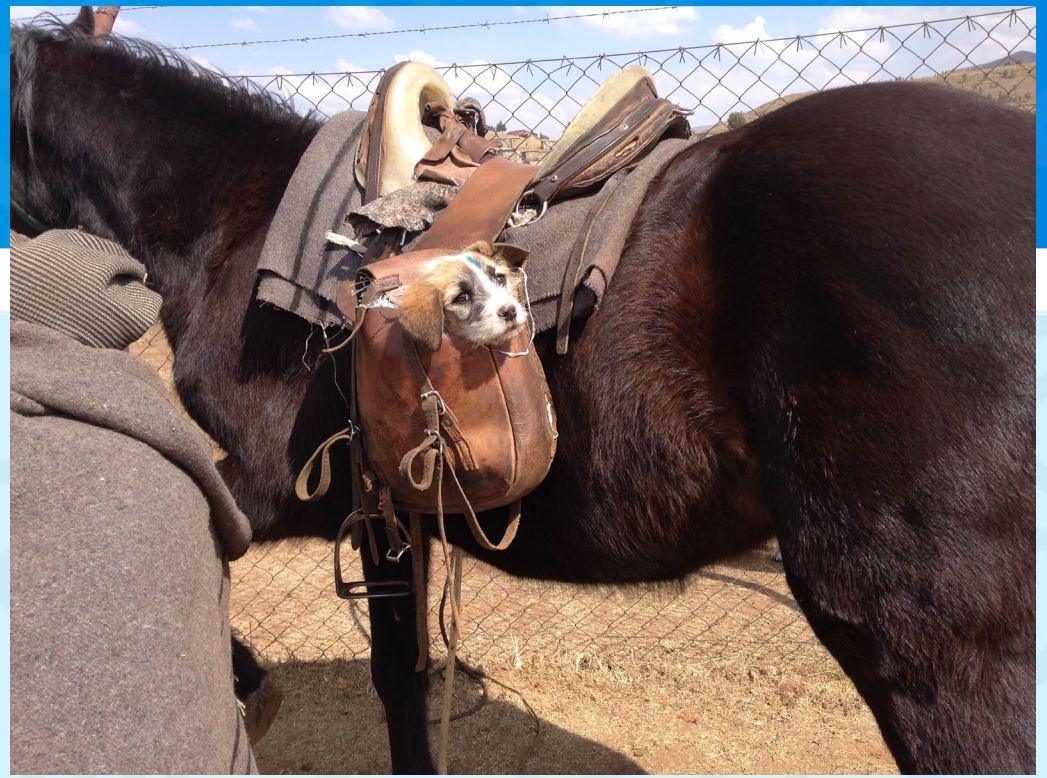
Barriers to and enablers of implementing antimicrobial stewardship programs in veterinary practices

Laura Y. Hardefeldt[1,2] | J. R. Gilkerson[1] | H. Billman-Jacobe[1,2] | M. A. Stevenson[1] | K. Thursky[2] | K. E. Bailey[1,2] | G. F. Browning[1,2]

Major barriers	Major enablers
Client expectations and competition between practices	Concern for human health
Cost of microbiological testing	Pride in service provided
Lack of access to education and training	Low level of resistance encountered
Lack of AMS governance structures	Preparedness to change prescribing practices
Lack of independent guidelines for antimicrobial use	Frequent use of low cost diagnostic tests
Hierarchical structure of many practices	Low use of most critically important antimicrobial agents

Summary of recommendations to facilitate the establishment of AMS programs in veterinary practices

Observed gap	Recommendations
Veterinary AMS legislation	Require veterinary practices to have AMS policies
	Restrict antimicrobial sales that occur without formal consultation
Education & training	Develop online courses and training on AMS targeted at veterinary practitioners (may contribute to continuing education requirements)
	Provide courses and training on AMS processes to specialists
Resources	Develop a means of easily monitoring antimicrobial use and resistance in veterinary practice
	Develop therapeutic guidelines for antimicrobial use in animals
	Make available examples and templates for AMS policies and procedures, including templates for on-farm use of antimicrobials



Thank you for listening.

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