



Determinants of antibiotic prescription and dispensing behaviour

Prescribing and dispensing



The statutory position varies among countries in sub-Saharan Africa

Ideally, scheduled antimicrobials are registered under a particular Act and require prescriptions

In addition, veterinarians may be authorized through the particular Act to *dispense* antibiotics in the course of their normal professional activities

Antimicrobials available over the counter (OTC) may be registered under a particular Act, but require no prescriptions

Antimicrobial drugs may be freely available on the open market without any restrictions

Discretionary use of veterinary and human medicines by veterinarians



Veterinary discretionary use is a veterinary privilege afforded by a particular Act in some countries and includes:

Extra-label use of registered veterinary medicines

Human medicines

Compounded medicines (mixing, diluting, concentrating, flavouring, or changing a drug's dosage form)

Decision cascade



Registered veterinary medicine: label instructions

Registered veterinary medicine: *extra-label use*

Registered human medicine: *extra-label use*

Compounded product: from registered veterinary drug:
extra-label use

Compounded product: from registered human drug: *extra-label use*

Responsibilities of the veterinarian – *the ideal situation*



Veterinarians should only prescribe antimicrobials to *bone fide* clients for animals under his/her care

For production animals, written protocols or policies should be agreed upon and documented for treatment of all endemic conditions on a farm or other livestock rearing or production premises

Such protocols must be regularly reviewed and updated

Production animal veterinarians practice population medicine



Veterinarians have an obligation, ethically, to control diseases at the earliest possible stage

There are particular circumstances that veterinarians can predict what's going to happen because of previous experience with flocks/herds

- if they are slow in medicating, they end up medicating more than they otherwise would have

RESEARCH ARTICLE

Open Access

Antimicrobial use for selected diseases in cats in Switzerland



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Only a few studies in companion animals evaluated whether prescriptions were in accordance with relevant guidelines

Results indicate that over-prescription of antibiotics in cats in Switzerland is common and compliance with guidelines is poor

Antibiotics prescribed although not indicated:
34% (URTD), 14% (FLUTD) and 29% (abscesses)

The study highlights the need to promote antimicrobial stewardship in small animal medicine



An investigation of antimicrobial usage patterns by small animal veterinarians in South Africa

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South African veterinarians predominantly used antibiotics empirically (91.2%) before resorting to laboratory tests

Antimicrobial compounding and off label use of human registered medication was common practice (86.19% of respondents)

74% of vets did not use guidelines (selection protocols) to assist with antibiotic choices

Antibiotic use behaviour

Case studies

Surgical Antimicrobial Prophylaxis Among Pediatric Patients in South Africa Comparing Two Healthcare Settings

Nicolene van der Sandt, MPharm, Natalie Schellack, PhD,* Lindi A. Mabope, MSc, Med,†
Mothahadini P.B. Mawela, MMed,‡ Danie Kruger, MSc,*§ and Brian Godman, PhD¶||**

(Pediatr Infect Dis J 2019; 38:122–126)

Five criteria had to be met for SAP to be deemed compliant in this study, that is:

- SAP selected based on recommendations
- Appropriate doses based on body weight
- SAP administered 60 minutes before incision
- Potential re-dosing
- SAP administered within 24 hours post-surgery

Noncompliance was largely attributed to inappropriate selection and dosing

Indications for presurgical antibiotics in companion animals

Surgical sites with expected contamination

- Surgery entering the gastrointestinal tract

- Surgery entering the urogenital tract

Surgical procedures of prolonged duration

Pre-existing infection at the surgical site

Devitalized or desiccated tissue

Implantation of a foreign body

Immunocompromised animals

Timing of surgical antibiotic prophylaxis

Parenteral antimicrobials within one hour before incision

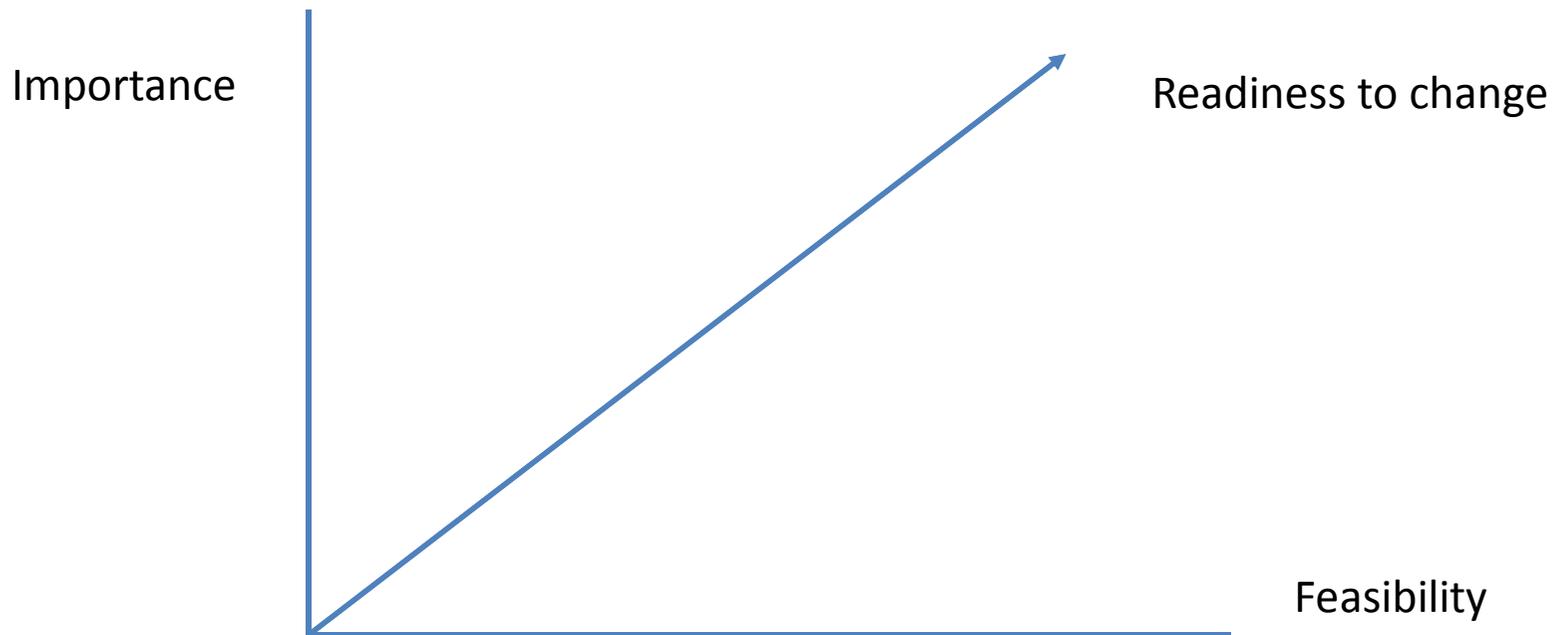
Re-dosing every 1–2 elimination half-lives during prolonged procedures

Discontinuation of prophylactic antimicrobials after wound closure

Behaviour change

People change if they think:

- it is important to change
- change is feasible
- they have the confidence to implement change



The challenges to behaviour change



“Mr Worry” (uncertainty avoidance)

Fear of what might happen should antibiotics be withheld

“The lone wolf”

Client demands

Profit motive and/or perverse incentives

Tragedy of the Commons (the cultural and natural resources accessible to all)