

# Optimising the use of diagnostics for AMR in animal health

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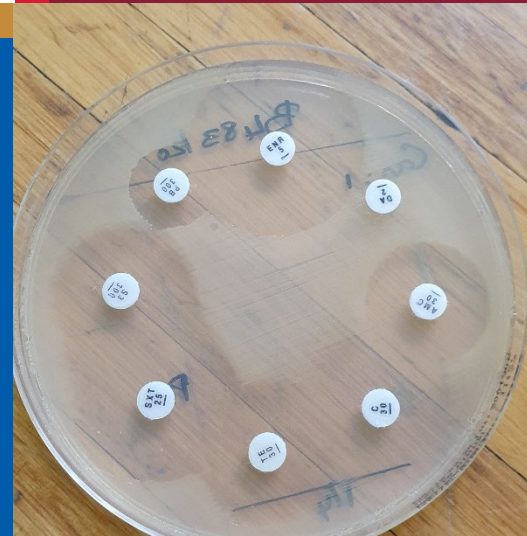
Make today matter



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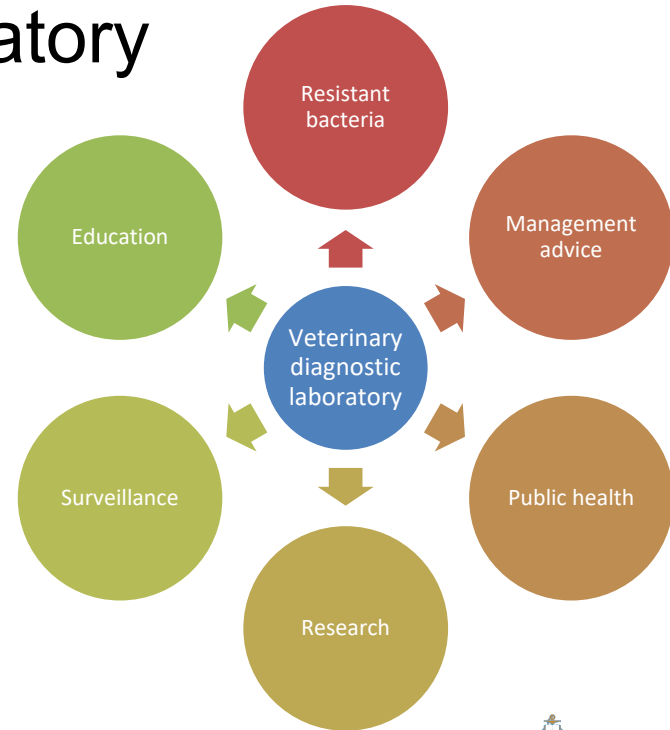
Faculty of  
Veterinary Science

Fakulteit Veeartsenykunde  
Lefapha la Diseanse tša Bongakadiruiwa



# Introduction

- **Veterinary diagnostic laboratory**
  - Detection resistant bacteria
  - Management advice
  - Public health considerations
  - Research
  - Surveillance
  - Education

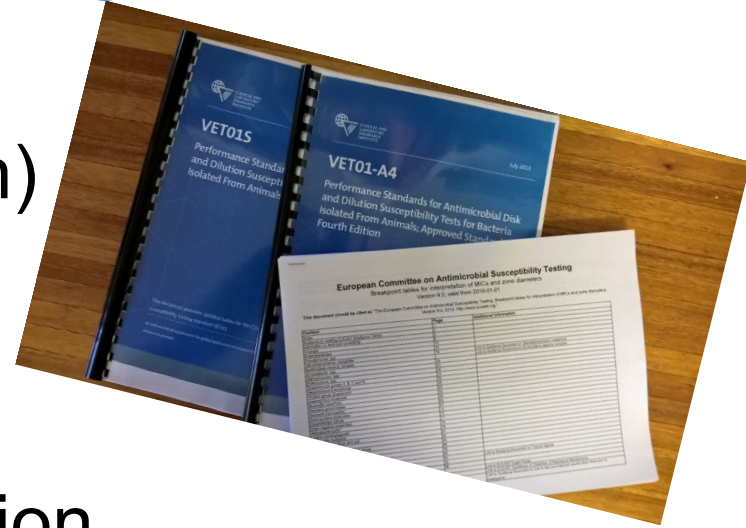


# Optimizing the use of diagnostics

- Optimizing
  - Analyses
  - Data
- Active and passive surveillance-animal health
  - Active-data from abattoir samples (healthy animals)
  - Passive-data from diagnostic laboratories (sick animals)
- Relevance-animal & human health

# Antimicrobial sensitivity testing

- Kirby-Bauer test (disk diffusion)
  - CLSI
  - EUCAST → VETCAST
- Minimum inhibitory concentration



# Passive surveillance

## Diagnostic animal health data

- Europe: France, Sweden, Denmark, Norway, Finland
- Americas: Canada (Quebec), USA
- **Passive surveillance-** *S. aureus*, *S. pseudintermedius*, *Salmonella*, *E. coli*, *Pasteurella multocida*, *Mannheimia haemolytica*
- **Active surveillance-** *Salmonella*, *Campylobacter*, *Yersinia enterocolitica*, *E. coli*, Enterococci, *Shigella flexneri*

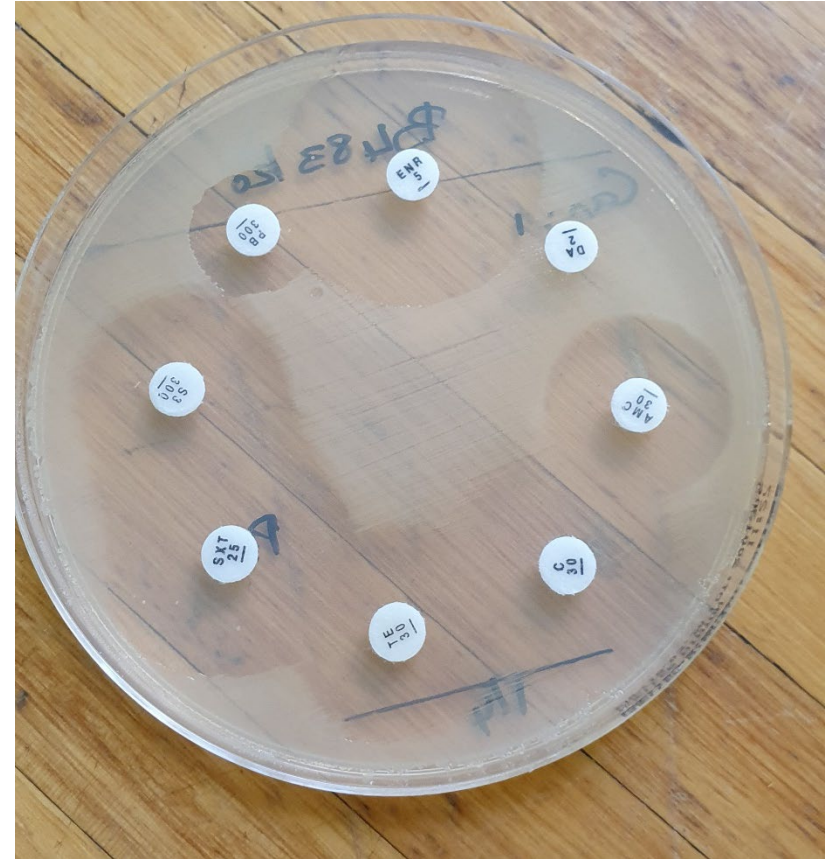
# Advantage

- Low cost
- Trends over time
- Companion animals included.



# Disadvantage

- Data bases
- Time
- Technical challenges
- Qualitative data



# Concern

- Abnormally high AMR – animal health?
- Human health – diagnostic isolates.
- AMR patterns-sick animals vs sick humans.



# Conclusion

- Passive surveillance data
  - Qualitative
  - Low cost
  - Time-retrieve and anonymise

# References

- Burns, T., Radke, B.R., Stitt, T. & Ribble, C. 2018. Developing an evidence based approach for antimicrobial resistance reporting for British Columbia diagnostic animal health laboratory data. *Canadian Veterinary Journal*, 59:480-490.
- Hendrix, K.G. 2018. The role of veterinary diagnostic laboratories in the fight against antimicrobial resistance. *Journal of Veterinary Diagnostic Investigation*, 30 (6): 805-806.
- Schrijver, R., Stijntjes, M., Rodriguez-Baño, J., Tacconelli, E., Babu Rajendran, N. & Vocc, A. 2018. Review of antimicrobial resistance surveillance programmes in livestock and meat in EU with focus on humans. *Clinical microbiology and Infection* 24: 577-590.

# Thank You



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