Antimicrobial Resistance: A global public health threat

Dr Mark Schipp
Australian Chief Veterinary Officer

Rotary – WA
May 2019
A very quick introduction

What is AMR?
- When micro-organisms evolve resistance to antimicrobial substances, like antibiotics.

Why is AMR important?
- AMR threatens the effective prevention and treatment of an ever-increasing range of infections.
- An increasingly serious threat to global public health that requires action across all government sectors and society.
AMR is an increasing health concern in Australia and around the world.
If not addressed, simple infections could cause significant harm.
It is estimated that by 2050, ten million people will die every year as a result of AMR.
Even today, 700,000 people die of resistant infections every year.
Why do we have a problem?
Why is a vet speaking to us?

- Most antibiotics are used in animal industries
- AMR may be transmitted through food
- A One Health issue
  - One Health recognises the interconnectedness of human, animal and environmental health.

Antimicrobial use in Australia

Reference adapted from:

Reference:
Antibiotic use in Australia

- Australians are over-using antibiotics in human health.
- Australia is the 11th highest user of antibiotics out of 31 OECD countries.
- In 2015, more than 30 million antibiotic scripts were provided through the Pharmaceutical Benefits Scheme.
What is being done?

National AMR Strategy

Key objectives:
1. Communication, education and training
2. Antimicrobial Stewardship
3. Surveillance
4. Infection prevention and control
5. Research and development
6. International engagement
7. Governance
Animal health key initiatives

- Best practice antibiotic prescribing guidelines – **pigs**
- Veterinary antimicrobial stewardship online training program
- Antimicrobial growth promotants (AGPs) – **no label claims**
- OIE antimicrobial usage (AMU) annual questionnaire
- Antibiotic Awareness Week
- ASTAG Antibacterial list working group
- Compendium report on antimicrobial stewardship efforts – **livestock industries**
- Antimicrobial Stewardship Guidelines for the Australian Cattle Feedlot Industry
- Factsheets on responsible antibiotic use – **companion animals, livestock and horses**
- There are currently only three antibiotics registered with growth promotant claims, none of which are currently important for human medicine
How are things in Australia?

✓ An excellent animal health status
✓ A best practice animal identification and traceability system
✓ We have good partnerships between industry and government
✓ Our systems are flexible and responsive
✓ We have good agricultural practices including on-farm hygiene and biosecurity
✓ Many of our industries implement biosecurity manuals and QA systems
✓ Australian veterinarians have been proactively mitigating AMR for some time.
✓ Australia already has a regulatory system working to minimise AMR
  ✓ Australia has been very conservative in registering antibiotics for use in food animals.
  ✓ Nearly all antimicrobials used in animals are Schedule 4 medicines.
✓ Our feedlot industry are the first anywhere in the world to implement a stewardship program, and how to use antimicrobials appropriately.
✓ Opportunities for Australia
Is food a risk?

In Australia we have surveyed animals:

- Cattle (2013) – (Note: beef cattle, dairy cattle and veal calf)
- Pigs (2018)
- Chicken meat (2018)
- Chicken Eggs (2018)
  - Salmon
  - Barramundi
  - Chicken Egg – further work
- Others
  (Note: This relates to samples from healthy animals.)
What about imported food?

Sourcing
Certification
Testing
Disease status
Cooked
Processed
Genetic material
Residue testing

Reference:
Future Vision

- **Coordination** – government/industry, One Health, internationally
- **Surveillance** – human/animal/food/environment, use, resistance
- **Key data systems** – Antimicrobials used, laboratory results, standardised, integrated
- **Resourced** – community awareness, research, preventive
Summary

• A time for action
• Opportunities for the future
• More work needed

Reference: