Why is Responsible Use so important from a One Health perspective?

Professor Dame Sally C Davies, FRS
Chief Medical Officer for England
It is not difficult to make microbes resistant to penicillin in the laboratory, and the same has occasionally happened in the body.

Alexander Fleming, 1945
Nobel Prize Acceptance Speech
Epidemiology of AMR

Diagram based on Linton (1977), as adapted by Rebecca Irwin, Health Canada (Prescott 2000) and IFT
No new class of antibiotics has been discovered for 26 years.
Global Antibiotic Consumption in Livestock
Positive associations for consumption of **fluoroquinolones** in food-producing animals and occurrence of resistance in *E. coli* from humans.

Positive associations for consumption of **macrolides** in food-producing animals and occurrence of resistance in *Campylobacter* spp. from humans.

Positive associations for consumption of **tetracyclines** in food-producing animals and occurrence of resistance in *Salmonella* spp. and *Campylobacter* spp. in humans.

Source: ECDC/EFSA/EMA first joint report on the integrated analysis of the consumption of antimicrobial agents and occurrence of antimicrobial resistance in bacteria from humans and food-producing animals.
Challenges

• Sanitation and hygiene
• Clinician knowledge + Patient/public demand
• Scientific – drugs, vaccines, diagnostics, surveillance
• Economic – pipeline, business models in animal husbandry and agriculture
• Geographical – access vs excess, global spread
International Action

• **Successes so far:**
  • WHO, FAO and OIE resolutions, 2015
  • Global Health Security Agenda – AMR action package
  • Increasing International support at the highest levels
  • UK Fleming Fund
  • Independent AMR Review
  • Diagnostic Prizes

• **Looking ahead:**
  • Implementing the GAP
  • WEF
  • G20
  • G7
  • UNGA