'Formal and informal healthcare and veterinary systems’

Professor Steve Hinchliffe, Exeter University, UK
UK Government Five Year AMR Strategy

Goal: to slow the development and spread of resistance

- Improve the knowledge and understanding of AMR
- Stimulate development of new antibiotics, diagnostics and novel therapies
- Steward the effectiveness of existing treatments
Formal systems of surveillance (Veterinary Medicines Directorate)
Sales Data
Formal regulation

- VMD strictly regulate production, sale and use of veterinary antibiotics
- Surveillance- and intelligence-led enforcement
- Prescription by responsible veterinary surgeon is required for administration of antibiotics (governed by RCVS Code of Practice)
- In food animals, formal restrictions exist on residues and excretion of antibiotics
- EU and state legislation (for example manufacture and marketing of medicated feed)
“Informal” regulation

- Prophylactic and metaphylactic uses:
  - Vertical integration (by management and ownership) of food chain (especially poultry) constrains practices
  - Retailers delimit use in supplier contracts
  - Processors are powerful actors in governing practices and overall use
  - Consumer-led (or virtual consumer) concerns transmitted through the food chain
Food animal sector consumption issues

- UK sales relatively steady (VARSS, 2014)
- Farmer awareness of issues is relatively high
- Reluctance on the part of some farmers to act given
  - Perceived “limited evidence” of threats to public health from food animal sector
  - Animal welfare concerns with further restrictions on treatment use
  - Concern with increased mortality and morbidity rates in high throughput systems
  - Further erosion of farmer discretion and responsibility for animal care
  - Limited labour resources for increased morbidity
  - ‘Trader mentality’ and lack of horizontal linkages
  - International competition and imports

(Source: DEFRA report: Buller, Hinchliffe et al 2015 Systematic review and social research to further understanding of current practice in the context of using antimicrobials in livestock farming and to inform appropriate interventions to reduce antimicrobial resistance within the livestock sector)
Key policy concerns

• Monitoring and changing
  • prophylactic and metaphylactic use when not wholly necessary for the health and welfare of the animals
  • inappropriate use of AMs to treat animal health issues that are not caused by sensitive microorganisms
  • Unnecessary use of later generation AMs, and difficulty in applying cascade
  • Over-dependence on medicalization as a replacement for improved farm environment and livestock health management, and
  • incorrect dosage and application on-farm
Key questions

- What are the ideal prescribing & husbandry practices?
- The effect of antibiotic use on development of resistance and how transmission of resistance occurs?
- What are the alternatives to antibiotics use in food producing animals?
- Behaviour change: evidence needed on how to lead change and sustain new desirable practices?
- Farming industry sustainability: how to change practices while retaining profitability, quality food and animal welfare?
UK AMR strengths and gaps

**DATA**
- Robust sales data from 1993
- System of active and passive surveillance
- Gaps: consumption practices and data are sparse; overall resistance data for veterinary bacteria is much sparser than data for human bacteria.

**SCOPE FOR ACTION**
- Powerful food chain actors; active NGOs; awareness good across sector; strong veterinary surgeon/ farmer relationships
- Gaps: understanding how agency and action is distributed across different sectors; understanding the role of established practices and relationships in preventing change; relative lack of robust evidence on resistance levels and pathways
Key opportunities for collaboration

- Reciprocal work with VMD on AMR surveillance
- Comparative analyses of food system actor-networks in UK and China and the capabilities of/ barriers to developing appropriate use
- Social science expertise applied to identifying key action areas in a rapidly growing and industrialising food system in China

Thanks to: Elizabeth Marier (VMD), Caryl Williams (DEFRA), Professor Henry Buller (Exeter), Bristol University Veterinary School.