Priorities for AMR Research: A global perspective

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Background

• How to turn research into strategy and policy?

• How to structure a research program (both individual proposals and a group of proposals) to give the required policy outputs?

• Do societal impact/policy-led proposals align with high-impact journals.
The AMR challenge

• Uncontrolled and indiscriminate use:- clinical and veterinary
• Around 40% of all antibiotics used in the UK and 75% in the US are given to livestock (prophylactic, therapeutic & growth promotion)
• Data and use in animal production very patchy
• 25,000 deaths and a loss of €1.5 billion in the EU every year (EU 2016) – scary forecasts
• A One Health approach
Policy perspectives

Government & regulators

Supply side: pharma

Demand side: users

Where & how to intervene cost-effectively?
Where to intervene? The main actors

Supply side

A public good problem

Demand side

Breeding industry
Feeding industry
Pharmaceutical industry
Veterinary industry
Farming industry
Processing industry
Retail industry
Consumers

Government

Private sector
Supply side: Government & regulators

• Institutional configuration – regulatory policy
• Surveillance/ data/ support for diagnostics
• Vaccination policy
• Information to users (incl. certification/ prohibition)

Working with industry:
• Cost sharing for AM development
• Incentives for R&D
• Bans/prohibition or limitation on specific products
• Information to users

What works? What’s cost-effective?
Demand side intervention

Treating AMR as a diffuse pollution problem

• Education and Information Initiatives
• Voluntary Instruments
• Economic Instruments
• Regulatory Instruments
• Planning Instruments
• Integrated methods (supply chain cooperation)
Public regulation versus private action

• Ideally, AM use reduction through behavioural change (e.g. farmers and veterinarians)
• Supply chain collaboration (industry-led & certified)
• Measures to reduce demand: Data & monitoring diagnostics, certification, good husbandry, biosecurity, vaccination, feed-related technologies, breeding strategies
• Consumer awareness, demand/ retail pressure
• Voluntary methods, behavioural economics and psychology
Overall

- How do measures compare…?
- What’s the most cost-effective method of reducing use across the ‘supply chain’?

Stylised MACC showing AM abatement potential in a specific system per year including potential negative or “win-win” interventions that can save costs to farmers
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Policy led or relevant?

- Thinking clearly about costs and pathway to benefits (or impact?)
- Thinking about users and regulatory environment
- What policy is this relevant to and can we say anything about cost-effectiveness?
- How to collect data to answer the question?
- Integrated responses (joined-up projects)
- What do we learn from other policy areas?
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Journals & impact

- High impact journals do publish science-policy papers
- Novel area of interdisciplinary science
- Derivative is not necessarily bad
- Journals also attracted by big numbers & exotic locations
- Writing multi disciplinary papers is an art framing the problem and story.
The University of Edinburgh

- Global Academy of Agriculture and Food Security
  https://www.ed.ac.uk/global-agriculture-food-security
- The Royal (Dick) School of Veterinary Studies
- The Edinburgh Antimicrobial Resistance Forum