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EXPLORING THE ECONOMIC CONCEPTS BEHIND ONE-HEALTH: WHAT CAN WE LEARN FROM IPM?

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Outline

- What is one-health
- Objective
- Issues & economic problems
- What can we learn from IPM
- Summary

One-Health Concept

- One-health provides a system based approach to understand how health issues between humans, wildlife and domesticated animals are intrinsically linked, with an aim to gain efficiency from public and private health expenditure.
- Starting to include flora and wider ecosystems:
 - Use the same treatments (antibiotics)
 - Nutrition
- Still a relatively new concept but it needs some rigour

Disaggregated Health System

- Traditionally treat all these issues as separate and each has an institution looking after their interest group
- Each institution
 - Creates (often) different rules and regulation (domestic)
 - Fit into international rules and regulations
- Increasing concern (real or otherwise) about private and public expenditure on issues that cross the divide
 - Ebola
 - Antimicrobial resistance
 - Food safety and food security

Economic ~~Definition~~(Problem)

The objective of one-health approach is to obtain a better health outcome for society

- Society (Welfare)
 - Humans, Ecosystems, Production systems, Companion animals
- Outcome (Metrics)
 - Health (quality and term)
 - Expenditure (allocation, efficiency of use, ethically & equality)
 - Operational environment (regulations)
 - Scale and scope
- **Prove that market failure exists (or social opportunity costs of not considering a systems approach)**

With the Economic Problem Defined

- Can determine the appropriate tools to use from our economic tool box
 - Logically we can use all of them to inform policy
- Also use these tools to determine if this is a rent seeking exercise
 - The funding pots sizes are different
- But need to take lessons from closely aligned issues to prevent stumbling into the same problems
 - Lessons from Integrated Pest Management (IPM)

IPM

- Been around for 60+ years
- Like one-health multiple definitions
- But basically designed to improve the outcomes from pest control by understanding the system
- Economics has an equally long history in this area but...

But..

- clear, but case-specific, definitions in the numerous theoretical and applied works, which advocate its many virtues, the practical meaning of the 'I' in the much used acronym has become a matter of contention. It rarely represents true 'integration', usually at best symbolises 'improved', and in some circumstances might be somewhat cynically defined as 'incidental' to pest management ([Zalucki et al., 2009](#))
- This is the challenge for One-Health, how can the concept overcome the inevitable cynical reference

Key Lessons for One-Health

Need to understand the costs and benefits of issues

Preventative

Management

Containment

Residual

Eradication (special case)

Emerging

The alternative interest groups involved

- who infects whom
- who pays between groups (and/or private v public)
- resistance management
- Developed v developing

Incomplete data sets to tell the welfare story but

- Amount spent on human health dominates

Key lessons for One-Health

- Gulf between the concepts and the actual analytics
- Top ranked economic journals discourage multiple issues
- Needs a strong policy narrative to stitch the range of examples together

Top-Down

- Policy is used to shift private demand and supply curves towards social supply and demand curves
- Frames the legal and social boundaries for private action
- Policy influences
 - Increases prices
 - Regulations (reduce choice)
 - Provides funds
 - Reduces direct costs
 - Reduces indirect costs
- Need to get the story right

Policy Problems

- Domestic level of risk deemed acceptable
 - Human, trade, environment
- International market access
- Cost subsidisation of existing, exotics, new threats
 - Moving towards a user-pays in some cases
- But really operating in a data vacuum at (inter)national scale
 - Little real data on Benefits and Costs
 - Even worse time series

Summary

- One-health (and associated names) could really do with looking around and seeing what already exists
 - Little point in re-inventing the wheel
- Real and emerging problems impacting on private and public costs
- Profession we have an inside edge to helping solve these issues.