



# AMR cross council initiative – Developing interdisciplinary approaches

Ghada Zoubiane  
Medical Research Council



11 September 2015

# What is interdisciplinary research?

---

**“Interdisciplinary research** is a mode of **research** by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems”

Committee on Facilitating Interdisciplinary Research, Committee on Science, Engineering, and Public Policy (2004). *Facilitating interdisciplinary research*. National Academies. Washington: National Academy Press, p. 2.

# Why interdisciplinary approach?

---

- Complex problem
- Join forces – ideas, knowledge and resources
- Holistic and realistic way

*Six blind men, each of whom touched a different part of an elephant, unable to see what their hands were resting on. Asked to describe what they had touched, the man who felt the side of the elephant said, "I touched a wall," and the man who felt the elephant's tusk said, "I touched a spear." The six men argued among themselves--was it a snake, a cow, a piece of rope? Only when they worked together, sharing their different ideas and experiences, were they able to discover the truth.*

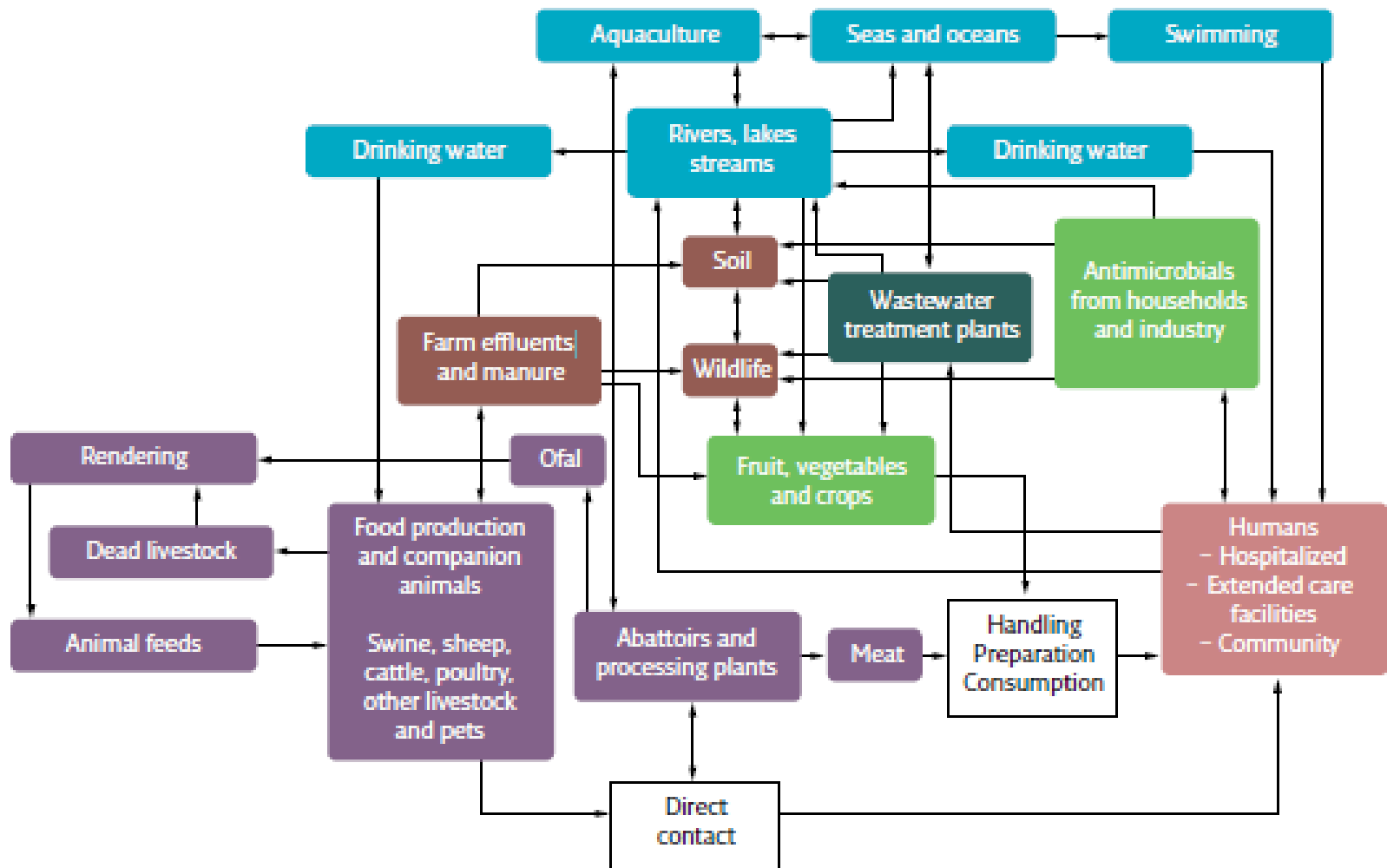
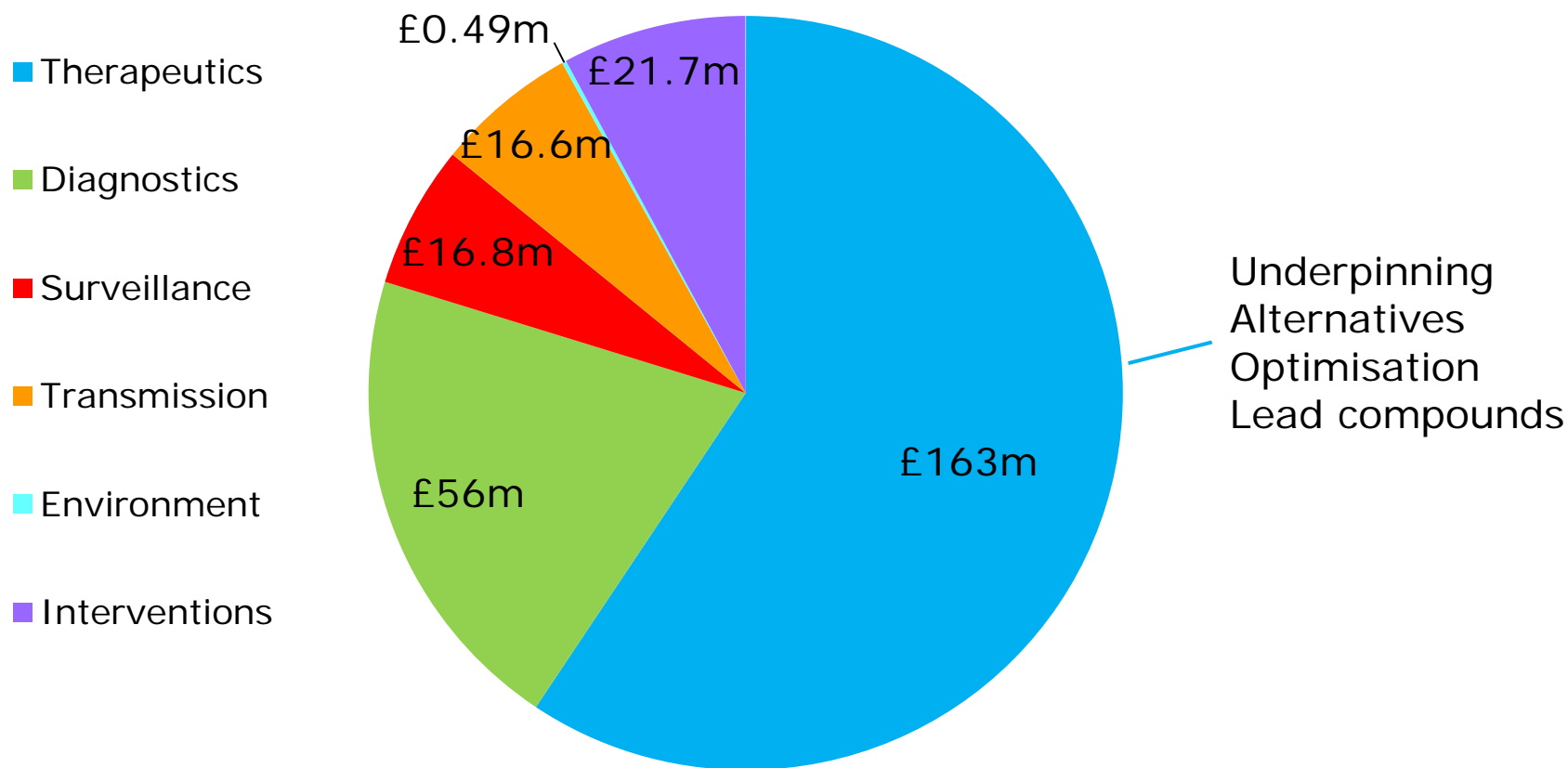


Figure 2 The complex interplay between different sectors in the spread of AMR. Adapted from Davies & Davies, 2010. Microbiol.

Mol. Biol. Rev. 74:417-433, reproduced and modified with permission.

# UK spend on AMR (2007-2013)

Total funding: £275m



# What is needed?

---

- Attract community into AMR research
- Collaborative working
- Coordination and integration of key disciplines

Coordinating research funding – government and other research funders including industry



**UK AMR Funders' Forum**

# AMRFF current membership

---

- The Arts and Humanities Research Councils (AHRC)
- The Biotechnology and Biological Sciences Research Council (BBSRC)
- Defra, the Veterinary Medicines Directorate
- Department for International Development (DFID)
- The Department of Health
- Defence Science and Technology Laboratory (Dstl)
- The Economic and Social Research Council (ESRC)
- The Engineering and Physical Sciences Research Council (EPSRC)
- The Food Standards Agency (FSA)
- HSC R&D Division, Public Health Agency, Northern Ireland
- Innovate UK
- \*The Medical Research Council (MRC)
- National Institute of Health Research (NIHR)
- The Natural Environment Research Council (NERC)
- Public Health England
- The Science and Technology Facilities Research Council (STFC)
- The Wellcome Trust
- The Welsh Government

# AMR Cross-council Initiative

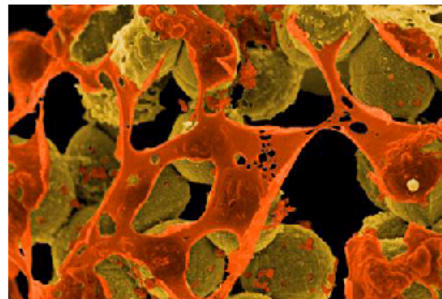


- Launched June 2014
- All Research Councils – led by MRC
- Bacterial resistance in the first instance
- 4 themes to tackle AMR

A screenshot of the ITV News website. The top navigation bar includes 'itv', 'Player', 'Shows', 'Guide', 'News', 'Sport', and 'More'. Below this is a 'NEWS' section with sub-links for 'Top stories', 'Your area', 'Topics', and 'Weather'. A 'NATIONAL' tag is visible. The main headline reads: "'War cabinet' opens to tackle UK superbugs". Below the headline is a short summary: "Science minister Greg Clark has begun his role with a declaration of war against superbugs. Mr Clark said all seven UK research councils were joining forces to form a 'war cabinet' to tackle antibiotic resistance." There are social media sharing buttons for Facebook, Twitter, Google+, and Reddit. At the bottom of the article preview, there is a button that says "VIEW ALL 2 UPDATES".

A screenshot of the The Independent website. The top navigation bar includes 'THE INDEPENDENT WEDNESDAY 22 APRIL 2015'. Below this is a red circular logo with a white eagle. A horizontal menu contains various categories: NEWS, VIDEO, PEOPLE, VOICES, SPORT, TECH, LIFE, PROPERTY, ARTS + ENTS, TRAVEL, MONEY. Below the menu are several article teasers, including 'Farkle', 'Food and Drink', 'Health &amp; Families', 'HireBuy', 'Gadgets and Tech', 'Motoring', 'Dating', 'Crosswords', 'Gaming', and 'Competitions'. The 'Life' category is selected, showing a breadcrumb trail: 'Life &gt; Health &amp; Families &gt; Health News'.

UK research councils join forces in 'unprecedented move' to tackle rise of antibiotic-resistant 'superbugs'



'War cabinet' on drug resistance brings councils together

Greg Clark, the newly appointed science minister, has launched a major cross-government push to tackle antimicrobial resistance.

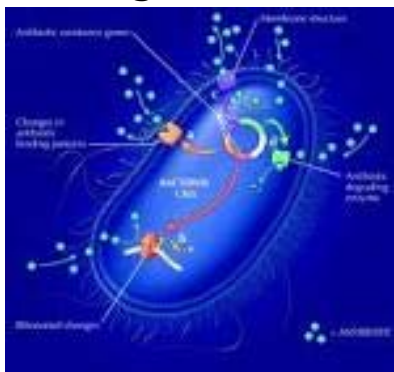




# Antimicrobial Resistance – a thematic approach



## Understanding resistant bacteria



Accelerating therapeutic and diagnostic development



Understanding real world interactions



Behaviour within an beyond the health care setting

# Interdisciplinary applications

---

- Identify the question and the disciplines needed
- Bring collaborators/brain storming
- Agree objectives
- Agree role of each participant
- Identify time spent by each partners
- Discuss IPR, confidentiality, need for a contractual agreement, costing

# How to identify partners

---

- Research organisations (down the corridor!!)
- Workshops and conferences
- Research networks
- Online search (pubmed, gateway to research, funders, reports)
- Discuss with end users
- Personal contacts

# Skills for interdisciplinary research



- 
- flexibility, adaptability, creativity
  - curiosity about, and willingness to learn from, other disciplines
  - an open mind to ideas coming from other disciplines and experiences
  - good communication and listening skills (*different language and terminology!!*)
  - an ability to bridge the gap between theory and practice
  - a good team worker
  
  - Respect and trust
  - Be a good manager
  - A good sense of humour!

# Funding interdisciplinary research

---



- Led and managed by one RC with input from all relevant ones (AHRC, BBSRC, MRC, NERC)
- Remit across RC
- Common pot of money
- Assessment and review by different disciplines
- Tailored panel with interdisciplinary expertise
- Assessing output and impact

# Common mistakes

---

- No clear evidence on involvement of the relevant disciplines and expertise
- No integration of objectives, methodology, outcomes  
*bolt on to the project!*
- The different parts of the projects don't come together
- Not including milestones
- Lack of vision and long term engagement