Tackling AMR
A challenge-led approach
Antimicrobial resistance – global burden

North America
- USA: ARB causes majority of 99,000 deaths/yr from infections acquired in hospitals.55
- USA: Health care costs of ARB are US$24-34 bn/yr.56

Europe
- EU: ARB costs society ~ €1.5 bn/yr55 & 900 million days of lost productivity.55
- Russia: ARB a major concern57 with 83.6% of families imprudently use antibiotics at home.51

Middle East & North Africa
- Egypt: 98% of blood infections contracted by young cancer patients are from ARB.55
- Israel: ARB found fatal in ~ 50% cases when resistant to our strongest antibiotics.60

South America
- Peru, Bolivia: >51% of hospital infections caused by ARB.57
- Brazil: Rates of ARB are up >50%.56

Sub-Saharan Africa
- Tanzania: Death rate of ARB infected children are double that of malaria.55
- Nigeria: Rapid spread of ARB that came to Africa from Asia.62

Asia
- Thailand: >140,000 ARB infections/yr and >30,000/yr patients die; 2 bn in productivity losses/yr.63
- Japan: Extensive levels of ARB found in Tokyo’s urban watershed.50
- China: Extreme over-prescription of antibiotics53 and rapid growth rate of ARB.52
- India: Within 4 years (02-06) ARB went from being resistant to 7, to 21 drugs.59
- Vietnam: Farming practices contributing to spread of ARB through environmental contamination.56
- Pakistan: 71% of infections in newborns are from ARB.50

Antarctica
- ARB found in Antarctic animals & water samples.54
Tackling AMR – a system led approach
The UK: A rich network of funders and researchers

AHRC
BBSRC
EPSRC
ESRC
NERC
MRC
STFC
Innovate UK
Wellcome Trust
Public Health England (PHE)

Chief Scientist’s Office
Defence Science and Technology Laboratory (DSTL)
Veterinary Medicines Directorate (VMD)
Dept Environment, Food, Rural Affairs (DEFRA)
Dept for International Development (DFID)
Dept of Health (England, NI, Wales)
Food Standards Agency (FSA)
AMR Cross-Council Initiative

- Launched June 2014
- All Research Councils
- Bacterial resistance in the first instance
- Challenge led approach

UK research councils join forces in 'unprecedented move' to tackle rise of antibiotic-resistant 'superbugs'
Antimicrobial Resistance – a thematic approach

Understanding resistant bacteria

Accelerating therapeutic and diagnostic development

Understanding real world interactions

Behaviour within and beyond the health care setting
What have we delivered so far?

- More than 60 projects funded
- Total of @£46m
- Working together across disciplines and sectors
- Rally the community around AMR
  - Bridging the gap, AMR champion, networking, building capacity
- Primarily UK based with some international links
- Links with industry and policy makers, line of sight to impact
AMR – working globally

- European level – Joint programming initiative on AMR
  24 members (EU countries, Canada, Israel, Argentina, Estonia and Japan) – expanding globally (Egypt and India)
  Collaborating across Europe and beyond

- Globally –
  - Newton calls: Partnership between UK and emerging knowledge countries. AMR specific calls with India, China, South Africa, Brazil
  - GCRF – current call £10m in partnership with DH

http://www.rcuk.ac.uk/research/xrcprogrammes/tackling-antimicrobial-resistance/