Antimicrobial Resistance in a Global Context – A Cross-Council call in partnership with the Department of Health

Summary

This is a £10m call under the Antimicrobial Resistance (AMR) cross-research council initiative in partnership with the Department of Health.

The call aims to support three to four interdisciplinary research consortia taking a whole systems approach to identify the burden and primary drivers of AMR and specifically antibacterial resistance (ABR) in Low and Middle Income Countries (LMICs). The consortia will contribute to the UK’s commitment to Official Development Assistance (ODA) and help identify, prioritise and understand the drivers of ABR in LMIC settings.

This call, which the MRC is administering on behalf of the partnership, has two stages, an obligatory developmental phase to provide seed funding followed by a consortia phase. As the challenge of ABR arises from a complex interplay between social, economic, cultural, ecological, historical, environmental, technical and biological factors, it is expected that proposals will need to draw on expertise spanning these domains.

Background

Antimicrobial resistance and specifically antibacterial resistance (ABR) is an increasingly serious threat to global public and animal health, as well as potentially the environment. Determining, prioritising and understanding the drivers of resistance within the relevant setting are crucial to developing appropriate and effective responses.

There are gaps in our understanding of ABR, especially in countries with high disease burdens, high levels of poverty and low income. Reliable microbial and resistance data are absent where they are most needed and consequently there is inadequate knowledge of the spread and transmission of drug resistant infections, the factors driving such resistance, as well as how these factors are influenced by, and interact with, different environments.

The challenge of ABR is exacerbated by rapidly increasing urbanisation, poverty and inequalities, conflict and fragility, changing patterns of food production and expanding globalisation. Tackling this challenge demands holistic systems approaches able to study the ecology of ABR and thereby identify, prioritise and understand its drivers and impacts. While drivers may be shared between countries, local circumstances mean that their priority is likely to differ between countries and between different regions and population groups in-country. Identifying and concentrating efforts on the most important and tractable drivers will help effectively deploy resources to meet local needs.

Aim
This call will support three to four truly interdisciplinary teams conducting high quality innovative research to better understand the challenge posed by ABR in LMICs. It is anticipated that the research supported will help build capacity in this area of research, both in the UK and in partner countries.

**Research and Scope**

This call will build on existing investment by the research councils through the AMR cross council initiative ([link](#)). It is informed by a workshop held in October 2016 on taking an ecological/systems-level approach to AMR in a global setting ([workshop report link](#)) and by our experience of previous cross-council programmes such as the Environmental and Social Ecology of Human Infectious Diseases and Zoonoses and Emerging Livestock Systems initiatives.

Proposals will take a systems approach, seeking to identify the primary drivers of resistance in the context of LMIC countries. Consortia bids should seek to engage an appropriate range of disciplines and consider the specific social, economic and cultural context of the LMIC(s) in question. Proposals can include studies of animal and environmental reservoirs of ABR, where these have the potential to spill-over into human populations. Research that investigates ‘One health’ and models the dynamics of ABR between animal, human and the environment and its impact on human and animal health, holistically taking into account the range of contextual factors, will be of high priority.

Research teams will be expected to forge partnerships between disciplines as well as researchers, end users, policy makers, NGOs and the private sector in LMICs as appropriate. Equitable partnerships should be developed both during the conceptualisation phase and beyond, to optimise research plans and to ensure that these are informed by LMICs needs.

There must be clear partnership with, and scientific leadership from, co-investigators based in the countries where the project will take place. Proposals should demonstrate how capacity building for junior UK and developing country staff will lead to developing future scientific leadership.

UK investigators should demonstrate an understanding of the national and local context, and work harmoniously and effectively with local stakeholders to ensure the research programme does not undermine local research capacity. These factors will be taken into account by the review panel.

Holistic and integrated approaches will likely require the linkage and combination of a range of different forms and types of data, and the consideration of incentives and disincentives for ABR management. Given the need for high quality data to support this work and recognising that there are likely to be gaps in availability of such data in LMICs, linkage and leverage of existing and planned investments, such as the Fleming Fund (where available), will be crucial.
The Fleming Fund aims to improve laboratory capacity for diagnosis and surveillance of ABR in LMICs. At the full proposal stage, we would strongly encourage grantees to explore possible links with the Fleming Fund or Fleming Fund investment countries. Research may usefully contribute to the evidence base on how to increase the demand and use of this data, with the ultimate aim of seeing changes in policy and prescribing practice. The Fleming Fund will support country and regional grants in Sub-Saharan Africa, South and South-East Asia. The project will likely work in up to 25 countries over five years. As the Fleming Fund portfolio of country and regional grants is still under design, more information on countries and grants will be made available in mid-late 2017. Successful development award teams will be supported in making contacts with the Fleming Fund, to assist them in accessing relevant data mapping and infrastructure investments.

Work in the UK or other high income countries (including the development of methodologies, tools, etc) whose outputs will be utilised within the course of the proposed programme to deliver primary potential benefit to LMIC partners can, where appropriately justified, be included.

The scope of this call does not include:

- Proposals that are directed towards an understanding of the burden and drivers of ABR in animals only
- Resistance in pathogens of relevance to crop health
- Viral, fungal and parasitic resistance - The current focus of this call is on resistant bacteria of humans and animals but we acknowledge antimicrobial issues in other classes of pathogens are important
- Proposals focused solely on developing or evaluating new targets, therapeutics, diagnostics or interventions to control or treat infections

**ODA**

Applications must demonstrate that they meet ODA compliance criteria and outline which country/countries on the Development Assistance Committee (DAC) list will directly benefit. A description of how the application is directly and primarily relevant to the development challenges of those countries, and how the outcomes will promote the health and welfare of a country or countries on the DAC list, and in particular poorer people in those countries should be included. See link to DAC list: [http://www.oecd.org/dac/stats/daclist.htm](http://www.oecd.org/dac/stats/daclist.htm).

**Eligibility**

The Principal Investigator must be a UK-based applicant from an institution eligible to receive research council funding. Information about eligibility criteria can be found in our [grants guide](#). Researchers can lead on one proposal and be a co-I on another one.

In light of planned ABR calls with China and India under the Newton Fund, which will be launched later this year, proposals that primarily deal with these countries are not
eligible. Regional type proposals where China and India are a component but where the benefit will be beyond those countries are eligible.

This call is open to studies of resistance in all types of bacteria, where these pose a significant LMIC health burden. Applicants should justify the value of the additional insights that the proposed systems level approach will bring, beyond existing knowledge, to the understanding and management of the threat posed by resistance in the targeted bacteria.

**Funding available**

The Funders recognise that the establishment of truly interdisciplinary teams of researchers and successful collaboration with LMIC partners will require time and effort. The call is therefore planned to have two stages (development and full). Successful development stage applicants will be provided with 6-8 months seed support. This seed funding will enable teams to better develop their research question, strengthening the contributions made by different disciplines during the conceptualisation phase, better map existing data sources and assess how data might be linked. This will be followed by a call for larger consortia grants which will open in early 2018. We expect that teams and research plans will continue to be developed between the outline and full stages, and that supported consortia will need to maintain research flexibility, so as to be able to flex plans in response to emergent findings.

Development Stage – Development grants to enable the broadening and deepening of interdisciplinary partnerships and research ideas. Funds will be for 6-8 months for £80k (80% Full Economic Costs (FEC) Funders’ contribution). Proposals will need to start by **1 October 2017**. It is expected that up to 10-12 development grants will be supported.

Full Stage – Research Consortia grants to support interdisciplinary teams of researchers. This call will be open to development grant awardees. Funds will be available to support 3-4 consortia at £2-3m each (80% FEC Funders’ contribution) for up to three years.

**Key Dates**

**Development Stage**

- **Launch**: 3 May 2017
- **Deadline**: 11 July 2017
- **Panel Review**: September 2017
- **Awards start**: by 1 October 2017

**Full Stage**

- **Launch**: September 2017
Deadline mid Jan 2018
Panel late March 2018
Awards start by 1 May 2018

How to apply for funding
Submissions using the guidance available in the ‘Downloads’ section of this web page must be submitted via Je-S no later than 4pm on 11 July 2017.

Enquiries
Questions related to this call should be directed to
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