Request for Proposal for Regional Grants Round 2

1. Overview

Regional Grants are funded by UK Department of Health and Social Care under its Fleming Fund Grants Programme (http://www.flemingfund.org/). The aim of the Fleming Fund is to address critical gaps in surveillance of antibiotic resistance in low- and middle- income countries (LMICs) in Asia and Sub-Saharan Africa. Countries in these areas are set to bear the highest burden of antimicrobial resistant (AMR) infections. Led by the UK, political action against the problem has resulted in a roadmap for global response - the Global Action Plan on Antimicrobial Resistance (AMR)[1]. This is the blueprint for a multi-stakeholder global response to averting the burden of AMR. Mott MacDonald has been appointed as the Fleming Fund Management Agent and is responsible for the management of the Fleming Fund Programme of Country and Regional Grants and the Fleming Fellowship Scheme.

The Fleming Fund Grants Programme includes Regional Grants in each of the four Fleming Fund regions (West Africa, East and Southern Africa, South Asia and South East Asia), and consists of two rounds of grants. Round 1 has already been tendered and a summary can be found in Annex 1. This Regional Grants Round 2 aims to support the Country Grants, which are entering implementation, by enhancing regional coordination and collaboration across quality assurance and quality control, regional data sharing, regional responses, and human resource and laboratory capacity building.

The Lead Grantee for each Regional Grant will need to work in close coordination with the Management Agent and will need to harmonise their proposal with other types of grants under the Fleming Fund Grant Programme (Country Grants, Regional Grants Round 1 and the Fleming Fellowship Scheme) and with national stakeholders in countries where the Lead- or sub-Grantee(s) will operate.

Regional Grant Round 2 is expected to last 30 months, beginning in February 2019. There are 8 grants on offer, and these are expected to be in the region of £1 million - £3 million each. Potential applicants will need to register to receive the application pack, including applications forms, work plan and budget templates, and other associated documents. Key dates are contained in section 4.6.

2. Overview of the Fleming Fund

2.1. Introduction

The UK Government (Department of Health and Social Care) has established the Fleming Fund to respond to the global threat of antimicrobial resistance (AMR). The Fleming Fund is critical to achieving the resolution of the 68th World Health Assembly, 2015 (WHA A68/20), and in realising the 'Political Declaration of the High-Level Meeting of the UNGA on Antimicrobial Resistance, 2016'. These initiatives recognise that urgent cross sectoral rationalisation of antimicrobial use (AMU) and prevention and control of infections in humans, animals, food, agriculture and aquaculture sectors are key to tackling AMR, and call for: innovative research and development; affordable and accessible antimicrobial medicines and vaccines; improved surveillance and monitoring; increased governance on antimicrobial use; and increased

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[1] http://www.who.int/antimicrobial-resistance/global-action-plan/en/

international cooperation to control and prevent AMR.

The aim of the Fleming Fund Grants Programme is to improve the ability of recipient countries and regions to undertake surveillance and monitoring of AMR. This includes enhancing diagnosis of drug resistant infections, with an emphasis on antibiotics and priority bacterial diseases, and improving the quality, monitoring and reporting of antimicrobial resistance surveillance data.

The geographic focus of the Fleming Fund Grants Programme is low and lower-middle-income countries in four regions: **West Africa, East and Southern Africa, South Asia and South East Asia**. It provides financial support to participating countries via three funding channels, over a five-year period from 2016 to 2021:
- Country Grants to support implementation of National Action Plans for AMR
- Fleming Fellowship Scheme, providing continual professional development and leadership training opportunities for relevant fellows
- Regional Grants which provide support to Country Grants and improve the volume and quality of data

The UK Department of Health and Social Care has appointed Mott MacDonald Ltd as the Fleming Fund Management Agent for the Fleming Fund Grants Programme. Mott MacDonald is a global company with expertise in multi-sectoral international development and fund management. On behalf of the UK Government, Mott MacDonald is responsible for allocating funding, and for oversight of all investments made across the Fleming Fund Grants Programme. The Fleming Fund Grants Programme will be independently evaluated and Itad, a specialist evaluation firm, has been appointed for this purpose.

2.2. Core principles within the Fleming Fund Grants Programme

The Fleming Fund is built around four core principles. Grantees are expected to demonstrate how they will align with these principles during implementation of the grant.

- **Country Ownership:** The Fleming Fund Grants Programme will work closely with national governments to ensure that country plans and aspirations, as laid out in their National Action Plans, are implemented. The Programme will consult and work hand-in-hand with national governments to agree the approach and ensure sustainability. Grants and RFPs will conform to national priorities outlined in the National Action Plan and as articulated during Country Assessment visits. Unless there are good reasons to do so, Fleming Fund grants will chiefly invest in public sector laboratories and surveillance systems, thereby supporting national public health systems.

- **One Health:** The Fleming Fund recognises that the problem of AMR is a great danger to human health and cannot be controlled without a One Health approach. A specific set of One Health investment parameters has also been developed and is summarised below. This approach is aligned with key documents and guidelines from OIE and FAO as well as the Global Action Plan. The One Health investment parameters are:

  o Collaborative multi-sectoral governance of AMR: Leadership and resourcing of AMR surveillance and mitigation measures in all sectors that contribute to the emergence of AMR.

  o Integrated AMR and antimicrobial use and consumption surveillance in all sectors: Surveillance in humans, livestock, aquaculture, crops, food and the environment to produce information that is interpreted by multi-sectoral teams

to help understand factors associated with AMR emergence within and between sectors

- o AMR mitigation policies and programmes prioritised across multiple sectors: Evidence-based policies and programmes for AMR mitigation measures that are prioritised across the relevant sectors, based on information generated through AMR and AMU/C surveillance in all sectors.

- **Alignment of Approach:** The Fleming Fund Grants Programme will seek to invest in areas which complement and build on work done to date, rather than create new systems. Grant applicants will need to demonstrate that they understand other actors' work in the field of improved laboratory capacity (both within and outside the sphere of AMR surveillance), improved disease surveillance, and the One Health approach. The Fleming Fund Grants Programme will assess grants for duplication of efforts and/or the development of parallel systems. To the extent possible, prospective Grantees will need to demonstrate how their proposals add value to existing and planned investments and systems.

- **Sustainability:** The Fleming Fund Grants Programme will focus assistance on national systems with a view to long-term sustainability. Investment size and scope should, as far as possible, be aligned with national government spending so that systems created with Fleming Fund grants are sustainable within the public health system. We also recognise that the public good of conducting AMR surveillance means medium- to long-term support, and it is expected that countries which demonstrate good performance will have access to additional funds to provide ongoing support.

2.3. Problem statement to be addressed by the Fleming Fund at the regional level

The two key areas of work that have been identified as priorities to be addressed by the Fleming Fund at the regional level include:
- Responding to data and evidence gaps to enhance appropriate use of antibiotics in LMICs (Round 1) and
- Establishing and sustaining regional mechanisms for supporting AMR surveillance efforts, for example, supporting external quality assessment, regional training in advanced diagnostics, or addressing barriers to regional data sharing and action (Round 2).

As outlined in WHO's global report on surveillance of antimicrobial resistance[2], there are many gaps in information on antimicrobial resistance in pathogens of major public health importance. International standards on harmonisation of national antimicrobial resistance surveillance and monitoring programmes were adopted by OIE's members in 2012, but there are no internationally agreed standards for collection of data and reporting on antibacterial resistance in human health, and no harmonising standards across medical, veterinary and agricultural sectors.

Further, there is a general lack of capacity for performing the advanced laboratory diagnostics and analyses at country levels needed to inform AMR surveillance and response. Advanced skills required by e.g. laboratory staff to allow them to perform molecular testing, epidemiologists to enable them to perform advanced modelling of AMU and AMR to inform surveillance systems, and prescribers of antimicrobials (doctors, medical staff, pharmacists etc) to improve their use of antimicrobials are not available at country levels in LMICs. Training on the rational and prudent use of antimicrobials in food production, and in analysis of the environmental impact of injudicious use, is also urgently

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[2] http://apps.who.int/iris/bitstream/10665/259744/1/9789241513449-eng.pdf?ua=1

required to promote a greater understanding of the interlinkages between AMR, animal health, human health, and environmental contamination. Providing training for such gaps at regional levels will ensure skills transfer for advanced training in a range of disciplines to be done in an efficient manner, representing good value for money and promoting communities of practice across one or more regions.

Finally, global fora for the rapid sharing of information on antimicrobial resistance are limited and many barriers exist which prevent the sharing of key AMR data. Aside from information infrastructure and systems related barriers, political and economic barriers are also significant. This round of grants will investigate the barriers preventing data sharing, and will seek recommendations that can be actioned to address these barriers at regional levels. It will be crucial for the Round 2 grantees to collaborate with the Round 1 grantees to build on recommendations being made during Round 1 which will facilitate ongoing sharing of data. Guidance on this will be provided later in the application process.

In preparing for Round 2, consultants from the UK Department of Health and Social Care Technical Advisory Group (TAG) for the Fleming Fund, and a Mott MacDonald technical advisory team, were asked to complete a survey which explored priorities across regions and sectors for AMR surveillance. The survey asked respondents to consider a list of domains and sub domains and identify those likely to have greatest impact on regional AMR surveillance, and which could be more suitably addressed from a regional, as opposed to a country, perspective.

These experts generally agreed on the overall importance of the selected domains. Respondents were then asked to rank the sub-domains in order of greatest impact potential on regional AMR surveillance systems, which identified the following priorities:

Key Domain 1: Quality of laboratory bacteriology diagnostics
> Priority 1: External Quality Assurance (EQA) in pathogen identification and antimicrobial susceptibility testing
> Priority 2: Common surveillance protocols which can be deployed across regions

Key Domain 2: Capacity building
> Priority 1: Microbiology training for improved pathogen identification and susceptibility testing
> Priority 2: Training in AMR epidemiology and surveillance

Key Domain 3: Planning, policy and advocacy
> Priority 1: Improving data analysis and sharing across regions
> Priority 2: Analysis of the public health and economic impacts of AMR

Key Domain 4: Regional infrastructure capabilities
> Priority 1: Understanding barriers to logistics, imports and exports, and supply chains within regions
> Priority 2: Improving regional capability for whole genome sequencing and bioinformatics

Using the survey response, including the many additional comments sent from respondents regarding challenges and gaps, and information taken from internal and published reports, we have identified six areas for regional grant support, and have considered whether that support is best provided at the regional (i.e. Africa region, Asia region) or global level. The objectives for each grant are summarised below, with additional details in the next section.

3. Regional Grants Round 2 – Request for Proposals

Table: Summary of grants and regions

Grant	Key domain	Priority	Region*		
			Africa	Asia	Both
1 & 2	1: Quality of laboratory bacteriology diagnostics	1: External Quality Assurance	x	x	
3	1: Quality of laboratory bacteriology diagnostics	2: Common surveillance protocols			x
4	2: Capacity building	1&2: Microbiology training; epidemiology training			x
5	3: Planning, policy and advocacy	1: Improving data analysis and sharing.			x
6 & 7	4: Regional infrastructure capabilities	1: Understanding barriers to logistics, imports and exports, and supply chains	x	x	
8	4: Regional infrastructure capabilities	2: Improving regional capability for whole genome sequencing	x		

* Where "Africa" or "Asia" is indicated, this will be one grant to cover two Fleming Fund regions, e.g. in Africa, a single grant will cover the two Fleming Fund regions of West Africa and East and Southern Africa; in Asia, one grant will cover the two Fleming Fund regions of South Asia and South East Asia; where "Both" is indicated, this will be one grant covering all four regions.

Grants 1 and 2: Improving the Quality of Bacteriology Diagnostics for AMR (Key domain 1, priority 1)

Grants 1 and 2 will address regional challenges to achieving quality assured bacteriology identification and antimicrobial susceptibility testing results. There is familiarity with existing EQA bodies across the regions, however, these initiatives need supporting and strengthening. Challenges include cross border transfer of isolates used in proficiency testing schemes, lack of national capacity to prepare standardised EQA panels, and the challenges of resourcing sustainable EQA programmes.

For Grants 1 and 2, proposals are invited to address the following:

Objective / Output	Details
Objective 1: Strengthen EQA in pathogen identification and antimicrobial susceptibility testing	
Output 1.1: Coverage, availability and uptake of EQA programmes is mapped across One Health (OH) sectors	Identify and map coverage of services such as WHO OIE Laboratory Twinning, FAO Reference Centres, and NEQAS schemes, including scope, access and uptake. National and private sector networks should also be mapped.[3]
	Identify barriers to participating in existing EQA programmes, and explore the risks and benefits of establishing formal regional EQA systems (e.g. biosecurity, data ownership, sample shipping) to complement existing international schemes, as these may be difficult for some countries to access.
Output 1.2: Provision of EQA services to National Reference Laboratories / centres of excellence is strengthened across OH sectors.	Identify and implement key strengthening activities in existing EQA programmes e.g. advocacy and incentives to promote country/political engagement, provision of TA, mentoring for laboratories engaged in EQA etc.
	Provide support for establishment and/or strengthening of existing EQA Reference Centre(s).
	Formalise collaboration with all Fleming Fund Country Grants[4] for establishment of a) quality assured identification of isolates and b) appropriate logistics for effective movement of isolates.
	Provide opportunities for Fleming Fellows to engage in capacity strengthening activities on EQA through placements / training.

Grant 1 will cover Africa (East and Southern Africa and West Africa) and Grant 2 will cover Asia (South Asia and South East Asia). Applicants can apply for one or both grants and should demonstrate how they will be able to deliver the objectives and outputs across the full scope of Fleming Fund Countries.

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[3] Relevant information obtained during Fleming Fund country engagement activities will be made available to successful applicants.

[4] The full list of Fleming Fund priority countries will be communicated at the Applicant Information Session and released with the Application Packs to registered applicants.

Grant 3: Establishment of common protocols for data collection, analysis and interpretation (Key domain 1, priority 2)

For grant 3, the focus is on standardising the collection and analysis of data by developing common protocols and approaches for surveillance. This is a particular challenge in animal health, aquaculture, environmental and food surveillance, as international guidelines are not fully developed or are too generic. This lack of guidelines hinders the adoption of a One Health approach. In addition, agreement is needed on how best to integrate and understand the data collected from different sectors - this will require significant cross sector and inter-ministry collaboration. The aim should not be to develop a "one size fits all" surveillance protocol to apply to all sectors, but to consider the relative contributions of each sector and develop guidelines and protocols which take into account the need for analysis and interpretation of data in the One Health context, and which will guide stakeholders as they progress to the next level of surveillance for their country. The grantee will be expected to review current guidelines and protocols, and conduct country level situational analyses to determine the need and scope for the guidelines. The grantee will also support the piloting and/or adoption of protocols through training and technical assistance in Fleming Fund priority countries and other countries across the regions. In particular (in output 2.2) the activities should support roll-out of the Tricycle programme in Fleming Fund priority countries. (http://resistancecontrol.info/wp-content/uploads/2017/08/55-58-Andremont.pdf)

Applications are invited to address the following:

Output	Details
Objective 2: Establishment of common protocols for data collection, analysis and interpretation	
Output 2.1: Common protocols for a One Health approach to surveillance are developed and pilot-tested	Explore the need for common protocols for surveillance in, for example, • assessing the incidence and prevalence of Health Care Associated Bacterial Infections (e.g. MRSA); • Sampling for surveillance of Community Acquired Infection; • Integrated OH surveillance of food-borne pathogens; • AMR surveillance in the environment; • Protocols that link surveillance and prevalence data to the economic cost and burden of AMR; • antimicrobial residue testing in food and the environment. This list is not exhaustive, and the need for common protocols in other relevant areas should be considered. The grantee should consider what protocols already exist and identify gaps and priorities for regional development. The outputs should aim to ensure standardisation and harmonisation across countries and regions. Applicants should draw on best-practice and, where appropriate, the scientific literature in defining protocols. Protocols should be pilot tested, in Fleming Fund priority countries.

Output 2.2 Roll-out of the Tricycle programme is supported for expansion	Provide ongoing support to Tricycle coordination and training, and providing regional technical assistance and quality assurance across regions.

Grant 3 will be awarded as a single grant and a consortium or partnership bid is expected, since protocols should be suitable for use across all four Fleming Fund regions, and it is expected that piloting will take place in at least one Fleming Fund priority country in each region.

Grant 4: Capacity building (Key domain 2)

Grant 4 will focus on the aspects of capacity building and human resource strengthening that can be addressed at the regional level. In many countries, microbiology forms only a small part of laboratory technologist / biomedical scientist training, and there is limited exposure to on-the-job training due to the lack of laboratories performing bacterial culture and antimicrobial susceptibility testing. Similarly, there is a lack of epidemiological expertise to support surveillance programmes, and to analyse the data produced. Grant 4 will therefore support the development and delivery of microbiology and epidemiology training relevant for AMR surveillance, in the human, animal and environmental sectors. This will provide practical training to key personnel, and will complement the Fleming Fellowship Scheme, which provides training in leadership and advocacy skills. The training should be aimed initially at laboratory technologists who are responsible for the work in relevant sections of reference laboratories, or those responsible for analysis and dissemination of data and results. Training should include elements of a train-the-trainer approach. The intention is to have a cadre of biomedical scientists in each country who have skills in advanced laboratory techniques, quality management and training delivery, and an equivalent cadre of epidemiologists who have the skills to analyse and interpret large scale AMR / AMU data within and across One Health domains. A regional approach should also enhance and support improved communities of practice and collaboration between One Health sectors within and between countries. The grantee should demonstrate how they will take an innovative approach to training, and, although training should be developed across the subdomains outlined below, should take into account the region-specific underlying levels of capacity and capability.

Applications are invited to address the following:

Outputs	Details
Objective 3a: Strengthen human resources and build capacity for laboratory surveillance for AMR	
Output 3.1 Quality microbiology training is delivered to laboratory and surveillance staff from national reference laboratories (human, animal and environmental health)	The grantees should develop and deliver, at the regional level, a microbiology module which includes the following: **Laboratory and data management** • Developing and running quality assurance systems for microbiology • Pathways to laboratory accreditation and licensing • Laboratory Information Management Systems (LIMS) including biosecurity risk management. • Use of the WHONET platform and / or BACLINK to integrate/report AMR data **Advanced laboratory skills** • Advanced AST methods (e.g. broth dilution, ESBL and carbapenemase confirmation) • Use of Whole Genome Sequencing (WGS) data in AMR Surveillance (covering e.g. extraction methods, analyser methods and relevant bioinformatics for analyser use) • Use of MALDI TOF in AMR surveillance and reference laboratories • Biomedical engineering for microbiology laboratories

Objective 3b: Workforce strengthening for AMR Epidemiology and Surveillance	
Output 3.2 Key personnel are trained in epidemiology and surveillance methods for human, animal and environmental health laboratories and/or national coordination centres for AMR (e.g. AMR Coordination Committee or Technical Working Group(s)).	Training should include the following • GIS / Mapping of surveillance data (temporo-spatial analysis) • Surveillance for AMR in the environment, including, where appropriate, in wildlife • Surveillance for AMR in fisheries and aquaculture • Surveillance for AMR in food production systems
Output 3.3 Regional training for measuring economic costs is established	• Develop and roll out a training module on costing methods of AMR surveillance. • Analysis of the economics costs of AMR, taking into account the burden of drug resistant infections, the costs of surveillance, and the costs of interventions to reduce AMR

Grant 4 will be awarded as a single grant and a consortium or partnership bid is expected to develop and deliver training across all four Fleming Fund regions, encompassing trainees from up to 24 countries. It is expected that a consortium or partnership will apply which can cover all disciplines and all regions.

Programmes should be designed to be delivered at the regional level (i.e. bringing trainees to a central point) as this encourages cross-sectorial and cross-border collaboration. The training should be trans-disciplinary, where necessary, and adopt a One Health approach which takes into account the need for integration with clinicians, veterinarians and stakeholders in agriculture where relevant. The programme should also consider the need to support implementation of AMR surveillance in-country and provide ongoing supportive supervision, rather than simply providing one-off courses. The sequence and scope of training should be prioritised according to the underlying capacity in the region. The programme should also seek to integrate and complement existing training programmes, e.g. WHO-TDR, USCDC (FETP), and those taking place though Fleming Fund Country Grants, etc. The applicant should outline how trainees will be selected from within national surveillance systems, ensuring equal access to the opportunities for the most talented. Applicants should also apply the principles of sustainability and Value for Money.

Grant 5: Planning, policy and advocacy (Key domain 3)

This grant will seek to address the issues surrounding the use and application of data analysis to influence policy and planning commitments for AMR surveillance at the regional level. Regional analysis and sharing of data will help to shape the international response and help to harmonise approaches. Critical issues include: trust and commitment to sharing data between and among country governments while retaining local ownership; standardising data across regions and ensuring uniformly high data quality; standardised approaches to surveillance and prevention of bias; and the need for leadership training to ensure emerging leaders are equipped with sufficient knowledge and skills.

Output	Details
Objective 4a: Improving data analysis and sharing	
Output 4.1 Regional bodies are supported for data sharing and policy-relevant analysis	The grantee should • Work with regional bodies to identify policy bottlenecks around data sharing for regional analysis, and assess which approaches to data collection and analysis would be most beneficial for policy discussions. • Develop regional plans to improve data sharing and analysis, respecting national ownership and addressing concerns regarding confidentiality and safeguarding of data • Develop plans for identifying an optimal number of reference laboratories to obtain quality data to inform regional analysis. This could be based on more patient-focused surveillance, including identifying a minimal, informative patient data set (e.g. antimicrobial treatment and outcome) • Develop plans to increase demand for data and promote uptake of regional policy analysis.

Grant 5 will be awarded as a single grant and a consortium or partnership bid is expected. Applicants will need to demonstrate their capacity to analyse data across the regions and their experience and track record in developing analyses and influencing policy at the supra-national level.

Grants 6 and 7: Regional Infrastructure Capabilities – Barriers to logistics, imports and exports, and supply chains(Key Domain 4, priority 1)

Grants 6 and 7 will focus on the regional barriers to sustainability of laboratory services which may inhibit the delivery of quality assured microbiology laboratory testing and the collection of surveillance data. Examples include supply chain management and customs regulations in relation to drugs, diagnostic equipment, and laboratory consumables; government involvement in and capacity for planning and purchasing of quality materials, storage and transportation routes, and organisational / institutional barriers (e.g. human resources capabilities, political will, financial constraints).

Output	Details
Objective 5: Understanding barriers to logistics and freight	
Output 5.1 An analysis of the barriers to logistics and freight is completed, to improve understanding of the systems which enhance procurement and delivery of supplies for national laboratory systems	The grantee should • Conduct regional comparison of countries to assess key barriers and draw out lessons learnt around e.g. supply chain management and customs regulations (including licensing laws) in relation to drugs, diagnostic laboratory equipment and consumables; performance and quality control tests to help ensure quality of materials (at time of purchase, upon arrival at the site and upon use in laboratories). • Support definition of roles, responsibilities and governance structures for the laboratory sector in the procurement and supply of drugs and consumable related to AMU/AMR, and advocate for a common approach at national level. • Provide clear, evidence based, practical advice for governments, regional bodies and local partners (e.g. country grantees)
Output 5.2 Quality handling and transport of isolates / samples is supported	The grantee should • Analyse storage of isolates and transportation for movement of samples and maintenance of quality samples. • Advocate to increase political will for the transport of isolates across borders and increase financial commitments to support this activity. • Provide clear, evidence based, practical advice for governments, regional bodies and local partners (e.g. grantees)

Grants 6 will cover Africa (East and Southern Africa and West Africa), and grant 7 will cover Asia (South Asia and South East Asia), as the barriers/influences are expected to vary between regions. Applicants can apply for one or both grants.

Grant 8: Regional infrastructure capabilities: Whole Genome Sequencing (Key Domain 4, priority 2)

The consultation process identified strong agreement among participants for a need to strengthen access to Whole Genome Sequencing (WGS) in Africa. It was acknowledged that establishment of individual country facilities may not be achievable or necessary, however, development of a regional centre or centres for sequencing, which could be accessed as required, will allow investigation of outbreaks, unusual resistance phenotypes, or delineation of the flow of organisms/genes across human / animal / agricultural and aquaculture sectors. A regional level service will reduce the country costs for accessing sequencing, however, in-country expertise will still be required for appropriate sampling, identification of organisms for sequencing, sample storage, DNA extraction and downstream analysis. Regional services for WGS should include consideration of data storage and bioinformatics support, as relevant capability is lacking in many countries. Consideration should also be given for the use of sequencing, with standard operating procedures for choosing circumstances, samples and metadata for which a WGS approach is required. Other issues to be addressed include feasibility and political acceptability, quality assurance, data security, and sample referral systems across countries.

Output	Details
Objective 6: Develop regional capacity forWhole Genome Sequencing and bioinformatics	
Output 6.1 Regional sequencing centres for East and Southern Africa, and West Africa, are developed to support WGS for AMR surveillance in Fleming Fund countries	The grantee should • Identify sites for development of WGS services which could be accessed across the region • Develop a costed implementation plan for establishment/ strengthening of regional sequencing centres • Support establishment of centres according to the approved implementation plan
Output 6.2 Regional training is established and rolled-out in Fleming Fund countries	• Conduct regional-level training in sample selection, DNA extraction methods, sequencing techniques and bioinformatics to ensure appropriate use and interpretation of WGS data • Support training for staff in regional sequencing centres for sequencing techniques, bioinformatics, IT, and data management
Output 6.3 WGS data is used to enhance AMR surveillance across One Health sectors	• Identify surveillance questions and develop guidelines and SOPs to guide sampling, data collection and interpretation to ensure that WGS data is used to strengthen knowledge on AMR

A single grantee will be appointed for grant 8, **to establish services in Africa only** (covering East and Southern Africa and West Africa).

4. **Application requirement**

   4.1. Grant length and main deliverables

Regional Grants Round 2 is planned for 30 months comprised of:
- **An inception phase** (3 months) to develop partnerships in the regions and plan/ coordinate with existing Fleming Fund grants (Country, Regional and Fellows). The inception phase will also be used to develop management plans, risk assessments, and workflow.
- **Implementation** (24 months) of initiatives designed to strengthen the quality of laboratory bacteriology diagnostics, establish common protocols, capacity building, planning, policy and advocacy, and regional infrastructure capabilities.
- **Exit, analysis and reporting** (3 months) including a review workshop for each grant, to take stock of grant achievements and agree on the strategic direction and key next steps required to sustain these achievements.
- The expected start date will be no later than five months following submission of Applications.

   4.2. Grant eligibility criteria

Potential grant applicants must satisfy the following eligibility criteria before applications will be assessed in detail. Applicants:
- Must demonstrate they are competent organisations responding to this call for proposals and able to respond to each of the tasks outlined in this Request for Proposal.
- We anticipate awarding up to eight grants to institutions or consortia that can respond to the needs outlined in section 3 in the regions specified. Where appropriate, applicants may apply for one or more grants in one or both regions. The grants available in each region are summarised in the table in section 3.
- Have the appropriate track-record in EQA strengthening, protocols development, capacity building, microbiology and epidemiology expertise, health economics, logistics / procurement and supply chains, and operating in the designated regions.
- Can be a single organisation, a partnership or consortium. Partnerships and consortia are required to ensure the skills and competencies match the grant applied for. Partnerships and consortia must clearly identify a Lead Grantee with the appropriate governance and coordination mechanisms to manage consortium members / sub-grantees.
- Organisations can be:
  - Academic institutes – such as a university or research institutes.
  - Non-Governmental organisations.
  - Private companies.
  - Government-owned enterprises or institutions, provided they can establish that they are (i) legally and financially autonomous, (ii) operate under commercial law, and (iii) are not dependent agencies of national governments.
- Must demonstrate the ability to work in the assigned regions.
- Should be willing and able to provide all information required for grant-assurance checks, including clear evidence of financial standing and systems of financial management and control.
- Should be able to provide evidence of suitability in the form of references from clients and donors for previous work undertaken within the last three years.
- Where the application is from a consortium, the Lead Grantee must be able to provide the same information and assurances for all sub-grantees.
- Use of local delivery partners as part of consortium bids will be viewed favourably in terms of sustainability.

4.3. Application process

Organisations will be required to register their interest and to attend an online Applicant Information Session (AIS) of about two hours in duration. This will outline the process and key aspects of the application and is expected to be used by prospective applicants to judge their suitability to apply, above and beyond the eligibility criteria outlined above. The application form, budget and work plan template(s) will be released to registered applicants prior to the AIS. See 4.6 for key dates, times and deadlines.

4.4. Evaluation criteria

Evaluation criteria for grant applicants will be outlined in the application documents sent to registered applicants. Evaluation of submissions will be based on assessment of: organisational / consortium experience and capacity; personnel; technical and financial response to this RFP; alignment with the Fleming Fund principles of One Health, Sustainability, Country / Regional ownership, alignment of approach to national, regional plans and donors; and Value for Money.

4.5. Restrictions/limitations

Any conflict of interest, or potential conflict of interest, should be declared to the Management Agent when prospective grantees are registering their interest to apply for a Regional Grant. This will allow assessments and mitigation and does not necessarily preclude application. Conflict of interest declarations must include (but not be limited to) if applicants or their named personnel are already in receipt of Fleming Fund Grants or have applications under review, or if they have provided any service to the Fleming Fund (e.g. as advisory members, consultants, etc). If a conflict of interest, or potential conflict of interest, arises after that point, the prospective grantee must clearly declare this in their proposal document.

4.6. Key dates

Publication of Request for Proposals: 23rd October 2018
Registration for applications: 30th October 2018, 17:00 (GMT)
Applicant Information Session: 09:00 GMT and 16:00 GMT 31st October 2018
Proposal submission deadline: 30th November 2018 at 12:00 (GMT)

Appendix 1:   Executive Summary - Regional Grants Round 2 consultation survey

Regional Grants will be funded by UK Department of Health and Social Care (DHSC) under its Fleming Fund Grants Programme, managed by Mott MacDonald. The aim of the Fleming Fund is to address critical gaps in surveillance of antibiotic resistance in low- and middle- income countries (LMICs) in Asia and Sub-Saharan Africa. The first round of Fleming Fund Regional Grants focuses on responding to data and evidence gaps to enhance appropriate use of antibiotics in LMICs in each of 4 regions; South East Asia, South Asia, East & Southern Africa, and West Africa. The second round aims to support Country Grants by enhancing regional coordination and collaboration across quality assurance and quality control, regional data sharing, regional responses, and human resource and laboratory capacity building.

To inform the content of the second round of Regional Grants a consultation exercise was conducted between Friday 27th July and Friday 10th August 2018 among experts in the field of Anti-Microbial Resistance (AMR). This exercise aimed to validate and build on four priority domains previously identified through the Regional Assessment conducted in 2017 and through discussion between Fleming Fund representatives (DHSC and Mott MacDonald). The consultation exercise sought to collect AMR experts' views to help inform and prioritise Regional Grants round 2 interventions targeted to each of the Fleming Fund regions; identify priorities across four pre-identified priority domains and their sub-components within each region and; identify areas in need of strengthening that would be most suitably addressed from a regional perspective as opposed to a country level perspective.

A survey of 24 questions was administered to 71 AMR experts. 33 experts responded, giving a 46% response rate. Experts that responded largely agreed with the proposed priority domains. Responses have informed the final proposed focus on two sub-domains within each domain. These sub-domains were ranked in priority order for their potential to have greatest impact on regional One Health AMR surveillance systems, as follows:

- Key domain 1: Improving the quality of laboratory bacteriology diagnostics for AMR
  - Priority 1: EQA in pathogen identification and antibiotic susceptibility
  - Priority 2: Establishment of common protocols for data collection, analysis and interpretation
- Key Domain 2: Capacity building in priority areas
  - Priority 1: Microbiology training
  - Priority 2: AMR epidemiology and surveillance
- Key Domain 3: Planning, policy and advocacy
  - Priority 1: Improving data analysis and sharing
  - Priority 2: Analysis to demonstrate public health and economic impact of AMR surveillance
- Key Domain 4: Regional infrastructure capabilities
  - Priority 1: Understanding barriers to logistics and freight
  - Priority 2: Regional capability for Whole Genome Sequencing and bio-informatics

Throughout the survey participants were asked to comment on critical challenges and gaps related to each domain. A re-occurring concern is that country capacity to produce quality / meaningful AMR testing and data remains limited and several respondents therefore see national level activity as the starting point prior to regional efforts. This will be addressed in parallel through the portfolio of Country Grants in 24 countries in the regions.

Appendix 2   Scope of Regional Grants Round 1

Problem statement

There are too few datasets to support evidence-based policy and treatment, and to enhance appropriate use of antibiotics in LMICs. This lack of data is outlined in recent publications[5]. Although efforts to improve the quality and volume of data are being made, resources are required to improve the collection and collation of data, and to set baselines for specific priority drug/bug combinations outlined in the GLASS manual and the LSHTM roadmap, and that address local AMU. In addition, little information exists on resistance patterns against commonly used standard (and non-standard) treatments or those used in agriculture.

However, there are, in most countries, institutions (academic, research, public and private health facilities, etc) which have been collecting data on AMR, sometimes for decades. This data is simply inaccessible for use in large-scale analytics. Collecting and, where necessary, digitalising data from these institutions has the potential to provide a synergistic analytical power to undertake analysis of spatiotemporal trends and establish baselines of AMR across a wide range of pathogen/drug combinations. Likewise retrieving data on antimicrobial use through prescription data or volume of antibiotic consumption in healthcare facilities should provide a wealth of information for baseline data on AMU and potential drivers of AMR (at least for healthcare associated infection).

Goal

The goal of   Regional Grant Round 1 is to enlarge the body of data available locally, regionally and globally by including unreported data, so it does not need to include data or information from published articles, meta-analysis or other information in the literature. Potential data sources are raw data from clinical microbiology laboratories (e.g. isolate identification, % resistance), primary clinical data of bacterial infection and treatment, and grey literature (e.g. unpublished research data).

 Aims of the Regional Grants Round 1 are to:
- Increase the volume of data available to improve spatiotemporal mapping of AMR and AMU across countries in each region, thus providing baseline data.
- Assess the quality of each dataset and provide meta-data to give regional and inter-regional context.
- Collect retrospective data from multiple sources in the public and private human healthcare sector, research and surveillance. This can include industry-led initiatives.
- Undertake analysis of the data and ensure it is disseminated locally, regionally and globally using appropriate platforms (e.g. online, peer reviewed publications).
- Improve local capacity to collect and use data at the national, regional, and global level by partnering with local institutions, including national Governments.
- Identify gaps in data from regions, considering whether this is as a result of low volumes of diagnostic testing or due to a lack of reporting of data.
- Identify areas of quality improvement and acknowledge issues with data interpretation that can be addressed in future standardisation of surveillance.
- Assist in improving awareness, advocacy and policy with a view to addressing the problem

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[5] World Health Organization: Worldwide country situation analysis: response to antimicrobial resistance. 2015. WHO/HSE/PED/AIP/2015.1
http://apps.who.int/iris/bitstream/10665/163468/1/9789241564946_eng.pdf?ua=1&ua=1

of AMR and AMU at the country and regional level.

Regional grants will also be required to conduct advocacy for improved data quality and submission of prospective date, and to report data at country level in a format useful for local policy makers.