

Proposed Terms of Reference for

Professional Fellowships (Cohort II) in **Ghana**

The UK Fleming Fund addresses the global challenge of antimicrobial resistance (AMR) and antimicrobial use (AMU). The Fleming Fellowship Scheme aims is to advance the goals of the Fleming Fund by supporting the professional development of key practitioners and change-makers to enhance investments made through Country and Regional Grants. Fleming Fellowships provide customised professional development and do not result in the award of a formal degree or a diploma.

Following successful delivery of Cohort I Professional Fellowships, the Fleming Fund Management Agent is extending the Fellowship Scheme to a second cohort (Cohort II). Cohort II will seek to engage a wider range of One Health professionals and build on the work of Cohort I.

Terms of Reference (ToR) for the Fleming Fund’s Professional Fellowships (Cohort II) in Ghana comprise two parts:

1. **General ToR including eligibility criteria and information that applies to all Cohort II Fellowships**
2. **Specific ToR for each individual Cohort II Fellowship.**

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# General ToR for All Professional Fellowships (Cohort II)

## Extending Knowledge Dissemination and One Health Collaboration

### Key areas for development of all Professional Fellowships (Cohort II)

The Fellowship will provide support and mentoring to all Cohort II Fellows to:

#### Enhance knowledge of antimicrobial resistance and its economic and social impact

#### Improve the ability of the Fellows to use country-level data on AMR to influence policy

#### Improve the use and interpretation of AMR & AMU data

#### Improve the dissemination of relevant knowledge and skills in their ‘Beneficiary Institution’

#### Strengthen One Health collaboration

### Eligibility criteria for Fleming Fellowships

To be eligible for a Fellowship, candidates must meet the following criteria:

* Be a citizen or resident of Ghana
* Be available and commit to participating fully in the Fellowship programme on a part-time basis for the full duration (expected to be 9-12 months), based on agreement with the Beneficiary Institution
* Be proficient in communication and the use of computers, including basic word processing, spreadsheet software, and use of the internet.
* Meet the language proficiency requirements described below
* Submit a full application form including the section acknowledging support by the relevant Beneficiary Institution, and attaching all required documentation including two referee’s letters and forms

Fellowships are part-time (approx. 0.3 – 0.5 FTE) and are conducted whilst the candidate continues their normal duties. Successful candidates are therefore expected to remain in the employment of their Beneficiary Institution for the duration of the Fellowship. Fellows may also:

* Undertake travel within their home country and/or internationally – these trips could be up to three or four weeks depending on the circumstances.
* Enter into an agreement with the designated Host Institution regarding code of conduct

### Specific language proficiency requirements

The applicant must provide evidence of proficiency in written and spoken English by either:

* Having completed an internationally recognised language proficiency test in the last 24 months (e.g. IELTS - International English Language Testing System, TOEFL - Test of English as a Foreign Language, or other internationally recognised proficiency test)

**or**

* Completed a tertiary academic qualification in the last 24 months that was taught in English

**or**

* Providing alternative evidence of current proficiency in the specified language that is acceptable to the Fleming Fund Management Agent

Applicants who cannot provide sufficient recent evidence of the required language proficiency may be required to sit a language test. The Management Agent may consider supporting language proficiency training for selected Fellows who meet all other criteria.

### Intended Start Date and duration

The Fellowships are intended to start November 2020 and be 12 months in duration, ending in October 2021.

### Schedule

Application, candidate selection and confirmation of Fleming Fellows are proposed to proceed according to the following schedule:

|  |  |
| --- | --- |
| **Stage** | **Date:** |
| Beneficiary Institutions and stakeholders agree to Fellowships | August 2020 |
| Selection of Host Institution(s) | September 2020 |
| Selection of Fellows | October 2020 |
| Finalisation of Fellowship Work Plan & Agreement | October 2020 |
| Fellowship begins | November 2020 |
| Fellowship ends | October 2021 |

**Completed applications forms and all accompanying documentation must be sent to Elinam Segbefia at** [**flemingfundWA@mottmac.com**](mailto:flemingfundWA@mottmac.com) **by XX September 2020.**

# Specific ToR for Individual Fellowships (Cohort II)

## AMR Health Informatics – Human Health (MOH) GH21

Beneficiary Institution

**Directorate of Pharmacy**  
*Ministry of Health (MOH)*

### Objectives

* To strengthen capability on data management and analysis for antimicrobial resistance (AMR)
* To develop leadership in AMR health informatics and contribute to sound evidence-based advice on AMR policy and programme development in the human health sector, within a One Health framework.

### Key areas for development of this Fellowship

The Fellowship will provide training and mentoring specific to the needs of the Beneficiary Institution and the Fellow in:

#### AMR database application design and the use of current data science tools (*including* R statistics and/or Python based technologies in AMR surveillance systems)

#### Facilitating AMR data reporting from surveillance sites

### Fellowship success

By the end of the Fellowship, the Fellow will have:

* Received mentoring/training inputs provided by the Host Institution in line with the focus areas
* Contributed to collaborative One Health activities with Fellows from all sectors
* Taken a supporting role in establishing National AMR Data Networking in Ghana
* Assisted capacity building activities for their Beneficiary Institution, using knowledge and techniques gained through the Fellowship
* Contributed to One Health workshops, meetings or other activities focusing on advancing antimicrobial resistance surveillance and prudent antimicrobial use
* Supported Professional Fellows (Cohort I), Policy Fellows and where appropriate AMR surveillance leaders by improving uptake and use of AMR data and evidence in their institution.

### Eligibility criteria for the AMR Health Informatics Fellowship MOH

In addition to those in Section A, candidates for the AMR Health Informatics Fellowship in MOH must meet the following criteria:

* Be endorsed by and accountable to MOH through employment
* Hold a medical, pharmacy degree or relevant qualification in epidemiology, microbiology, and/or relevant professional experience with the Ghana AMR policy and National Action Plan implementation mechanisms
* Show evidence of fundamental exposure to health information/data systems in relation to AMR
* Be working in a position that enables the candidate to develop and advise on AMR/AMC/AMU actions in Ghana
* Show evidence of experience and leadership potential in advocacy within their institution and create opportunities to influence others in the One Health sectors.

**B: Specific ToR for Individual Fellowships (Cohort II)**

## AMU/C Surveillance Pharmacy – Human Health (GHS) GH22

### Beneficiary Institution

**Ghana Health Service (GHS)**  
*Ministry of Health*

### Objectives

* To provide training that will strengthen the Fellow’s ability to support AMU/AMC surveillance in Ghana Health Service and produce evidence of AMU practices in healthcare settings and communities
* To provide the skills required to design AMU surveillance mechanisms and analyse data and results to inform policies or actions in GHS, which reduce the overuse and or misuse of antibiotics
* To contribute to the sustainability of AMU surveillance in GHS by acquiring skills in training and implementing training programmes

### Key areas for development of this Fellowship

The Fellowship will provide training and mentoring specific to the needs of the Beneficiary Institution and the Fellow in:

1. The design and implementation of AMU data collection in hospital and other healthcare settings
2. The analysis and interpretation of AMU data and assessment of antibiotic prescribing practices in the context of data on AMR
3. The support of appropriate antibiotic use through the delivery of trainings programmes and workshops for regional hospitals and other healthcare settings

### Fellowship success

By the end of the Fellowship, the Fellow will have:

* Received mentoring/training inputs provided by the Host Institution in line with the focus areas
* Contributed to collaborative One Health activities with Fellows from all sectors
* Learnt how to collect scientifically robust evidence of antimicrobial use (AMU) patterns
* Learnt how to collect and interpret AMC data and understand the shortcomings
* Acquired skills which allow analysis and interpretation of AMU/AMC surveillance data to inform prescribing practices and future surveillance priorities
* Contributed to communities of practice involving the human and non-human health sectors
* Contributed to One Health workshops, meetings or other activities focusing on advancing antimicrobial surveillance and prudent antimicrobial use
* Supported Professional Fellows (Cohort I), Policy Fellows and where appropriate AMR surveillance leaders by improving uptake and use of AMR data and evidence in their institution.

### Eligibility criteria for the AMU Surveillance Fellowship GHS

In addition to those in Section A, candidates for the AMU Surveillance Fellowship in GHS must meet the following criteria which are specific to this Fellowship:

* Be endorsed by and accountable to GHS through employment
* Hold a medical or pharmacy degree, and/or have relevant professional experience with the Ghana AMR policy and National Action Plan implementation mechanisms
* Be working in a position that enables the candidate to collect data on antibioticprescriptions in hospitals, and to work with clinicians regarding their prescribing practices
* Show evidence of experience and leadership potential in the field of AMU in human medicine and pharmacy.

**B: Specific ToR for Individual Fellowships (Cohort II)**

## Bioinformatics and Sequencing – Animal Health (VSD) GH23

**Beneficiary Institution**

**Veterinary Services Directorate (VSD)**  
*Ministry of Food and Agriculture (MoFA*

**Objective**

* To strengthen capability on bioinformatics and whole genome sequencing
* To enhance Fellows epidemiological/analytical skills in the interpretation of AMR/AMU surveillance data
* To support the Fellow to make better use of AMR surveillance evidence obtained from whole genome sequencing to inform policies or actions to reduce AMR in Ghana

**Key areas for development of this Fellowship**

The Fellowship will provide training and mentoring specific to the needs of the Beneficiary Institution and the Fellow in:

1. Understanding of sequencing technologies and capabilities
2. Understanding the use of WGS in AMR surveillance
3. Understanding of pipelines and processes for assembly of contigs from raw reads
4. Use of bioinformatics tools for genomic data analysis including resistance gene identification and construction of phylogenetic trees
5. Use of phylogenetic analysis to determine relatedness of bacterial strains and resistance elements
6. Manuscript preparation

**Fellowship success**

By the end of the Fellowship, the Fellow will have:

* Received mentoring/training inputs provided by the Host Institution in line with the focus areas
* Contributed to collaborative One Health activities with Fellows from all sectors
* Assist capacity building activities for their Beneficiary Institution, using knowledge and techniques gained through the Fellowship
* Contributed to supporting AMR/AMU surveillance by helping answer specific questions on data obtained from whole genome sequencing in Ghana
* Contributed to One Health workshops, meetings or other activities focusing on advancing antimicrobial resistance surveillance and prudent antimicrobial use
* Supported Professional Fellows (Cohort I), Policy Fellows and where appropriate AMR surveillance leaders by improving uptake and use of AMR data and evidence in their institution.

**Eligibility criteria for the Bioinformatics and Sequencing Fellowship VSD.**

In addition to those in Section A, candidates for the Bioinformatics and Sequencing Fellowship in VSD must meet the following criteria:

* Be endorsed by and accountable to MoFA/ VSD through permanent employment
* Hold a bachelor’s degree and be ready to receive training in Bioinformatics, Computer Science, Biostatistics, Genetics or related fields.
* Should have basic knowledge of genomics and statistics
* Be ready to receive short-term training in programming R and other Linux scripting languages
* Be working in a position that enables access to and analysis of the AMR data generated by the National Reference Laboratory and associated surveillance sites
* Show evidence of experience in the field of surveillance, data management, data analysis and interpretation, as applied to AMR/AMU.

**B: Specific ToR for Individual Fellowships (Cohort II)**

## AMU/C Surveillance – Aquaculture (FHU) GH24

**Beneficiary Institution**

**Fish Health Unit (FHU)**  
*Ministry of Fisheries and Aquaculture Development (MoFAD)*

**Objectives**

* To provide training that will strengthen the Fellow’s ability to support AMU/AMC surveillance in aquatic production systems and produce evidence of AMU practices
* To provide training that will strengthen the Fellow’s ability to improve the accuracy and completeness of AMC data reported by Ghana to the World Organisation for Animal Health (OIE)
* To contribute to the sustainability of AMU surveillance in Ghana by implementing training programmes

**Key areas for development of this Fellowship**

The Fellowship will provide training and mentoring specific to the needs of the Beneficiary Institution and the Fellow in:

1. Design and implementation of AMU data collection (in accordance with OIE guidelines) for priority animal production systems included in AMR surveillance and collection of AMC data at the national level
2. Analysis and interpretation of AMU/C data in the context of data on AMR, and make appropriate recommendations for policy decisions of relevance to MoFAD.
3. The support of AMU surveillance and appropriate antibiotic use information sharing

**Fellowship success**

By the end of the Fellowship, the Fellow will have:

* Received mentoring/training inputs provided by the Host Institution in line with the focus areas
* Contributed to collaborative One Health activities with Fellows from all sectors
* Learnt how to collect scientifically robust evidence of antimicrobial use (AMU) patterns
* Learnt how to collect and interpret AMC data and understand the shortcomings
* Acquired skills which allow analysis and interpretation of AMU surveillance data to inform technical staff in the sector and aquatic food producers regarding antimicrobial use and to inform future surveillance priorities
* Contributed to One Health communities of practice
* Contributed to One Health workshops, meetings or other activities focusing on advancing antimicrobial surveillance and prudent antimicrobial use
* Supported Professional Fellows (Cohort I), Policy Fellows and where appropriate AMR surveillance leaders by improving uptake and use of AMR data and evidence in their institution.

**Eligibility criteria for the AMU/C Surveillance Fellowship FHU**

In addition to those in Section A, candidates for the AMU/C Surveillance Fellowship in FHU must meet the following criteria which are specific to this Fellowship:

* Be endorsed by and accountable to MoFAD through employment
* Hold at least an undergraduate qualification in veterinary medicine or epidemiology, and/or relevant professional experience.
* Be working in a position that enables the candidate to conduct a field-based survey of AMU
* Show evidence of experience and leadership potential in the field of AMU/C in aquatic food production