

Proposed Terms of Reference for

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

The UK Fleming Fund addresses the global challenge of antimicrobial resistance (AMR) and antimicrobial use (AMU). The Fleming Fellowship Scheme aims 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 Bhutan 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)

#### 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 of Bhutan
* 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 February 2021 and be 9-12 months in duration, ending in January 2022.

### 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 | September 2020 |
| Selection of Host Institution(s) | September 2020 |
| Selection of Fellows | Dec 2020-Jan 2021 |
| Finalisation of Fellowship Work Plan & Agreement | Jan - Feb 2021 |
| Fellowship begins | February 2021 |
| Fellowship ends | January 2022 |

**Completed applications forms and all accompanying documentation must be sent to Garima Singh at Garima.singh@mottmac.com by 21 December 2020.**

# Specific ToR for Individual Fellowships (Cohort II)

## AMR Surveillance – Human Health (RCDC) BT21

### Beneficiary Institution

**Royal Centre for Disease Control (RCDC)**  
*Department of Public Health, Ministry of Health (MoH)*

### Objectives

* Support an AMR surveillance leader in the RCDC to strengthen the AMR surveillance system in humans through the design of AMR surveillance programmes, enhancing data flows, managing and analysing data to support evidence-based decision making regarding future priorities for AMR surveillance, and identifying policies and actions to reduce AMR.
* Strengthen the One Health approach to AMR surveillance in Bhutan by sharing of information generated through AMR surveillance between the human and animal health sectors.
* Expertly interpret results of AMR surveillance in the context of AMC and AMU in related settings.
* Contribute to the sustainability of the AMR surveillance programme in Bhutan by developing training expertise 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. To strengthen the Fellow’s epidemiology skills to manage, analyse and utilise AMR Surveillance data collected from Humans
2. To develop leadership skills in AMR Surveillance in Human health
3. Produce scientifically robust evidence of AMR patterns in human bacterial infections from AMR surveillance data.
4. Interpret this together with evidence from other sectors to inform future surveillance priorities within the human, animal and environmental health sectors.
5. Inform policies or actions to reduce the incidence of AMR in Bhutan

### 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
* Undertaken capacity building activities for their Beneficiary Institution, using knowledge and techniques gained through the Fellowship
* Contributed to communities of practice across One Health sectors
* Contributed to One Health workshops, meetings or other activities focusing on advancing antimicrobial resistance surveillance and prudent antimicrobial use
* Supported the Professional Fellows (Cohort I), Policy Fellows and where appropriate AMR surveillance leaders by improving uptake and use of data and evidence within their institution.

### Eligibility criteria for the AMR Surveillance Fellowship (RCDC)

In addition to those in Section A, candidates for this AMR Surveillance Fellowship in RCDC must meet the following criteria:

* Be endorsed by and accountable to the RCDC through employment, contract, or similar such as formal secondment
* Hold a relevant undergraduate educational qualification with professional experience
* Be working in a position that enables access to information on AMR, AMC and AMU surveillance activities in Bhutan and analysis of the AMR data generated by the Jigme Dorji Wangchuck National Referral Hospital (JDWNRH) and/or associated surveillance sites
* Show evidence of experience and leadership potential in the field of surveillance, data management, data analysis and interpretation, as applied to AMR.

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

## Bioinformatics – Human Health (RCDC) BT22

**Beneficiary Institution**

**Royal Centre for Disease Control (RCDC)** (Location flexible)  
*Department of Public Health, Ministry of Health (MoH)*

**Objective**

* To strengthen skills in bioinformatics and genetic basis of Antimicrobial resistance
* Inform research and policies based on genetic understanding of AMR patterns

**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 molecular and/genetic basis of antimicrobial resistance and tracing origins
2. Bioinformatics tool development to analyse resistance patterns and inform research questions (e.g. as a part of Technical Working groups)

**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 surveillance by informing research questions on AMR data analysis in Bhutan
* 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 Fellowship (RCDC)

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

* Be endorsed by and accountable to RCDC through permanent employment
* Minimum of Bachelors degree with training in Bioinformatics, Computer Science, Biostatistics, Genetics or related fields.
* Basic knowledge of genomics and statistics
* Programming experience in R and other Linux scripting languages

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

## AMR Surveillance Food Testing – Animal Health (NFTL) BT23

### Beneficiary Institution

**National Food Testing Laboratory (NFTL)**  
*Ministry of Agriculture and Forests*

### Objectives

* To support an AMR surveillance leader at NFTL a strengthen the AMR surveillance system in food materials through the design of AMR surveillance programmes, enhancing data flows, managing and analysing data to support evidence-based decision making regarding future priorities for AMR surveillance, and identifying policies and actions to reduce AMR.
* To support a Quality Assurance leader at NFTL to strengthen the AMR surveillance system in animals by improving the quality of pathogen identification and AST results produced by NVL (NCAH), NFTL and regional laboratories participating in AMR surveillance.
* Strengthen the One Health approach to AMR surveillance in Bhutan by sharing of information generated through AMR surveillance between the human and animal health sectors.
* Expertly interpret results of AMR surveillance in the context of AMC and AMU in related settings.

### 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. Produce scientifically robust evidence of AMR patterns in infections from AMR surveillance data
2. Interpret this together with evidence from other sectors to inform future surveillance priorities within the human, animal and environmental health sectors.
3. Strengthen the one health approach to AMR Surveillance in Bhutan through sharing materials and activities related to food testing
4. Inform policies or actions to reduce the incidence of AMR in Bhutan.

#### Support a Quality assurance to strengthen the AMR surveillance system by improving the quality of pathogen identification and AST results produced by food testing labs

#### Strengthen the One Health approach to AMR surveillance in Bhutan by facilitating the sharing between human and veterinary laboratories of materials and activities that are relevant to both sectors

#### Contribute to the sustainability of the AMR surveillance programme in Bhutan by developing training expertise and implementing training programmes

### 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 quality assurance in food testing laboratory in Bhutan.
* 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 Surveillance Food Testing Fellowship (NFTL)

In addition to those in Section A, candidates for the AMR Surveillance Food Testing Fellowship in NFTL must meet the following criteria:

* Be endorsed by and accountable to NFTL through employment
* Hold a relevant qualification in epidemiology or microbiology (or-lab related qualification), and/or relevant professional experience
* Be working in a position that enables the candidate to develop and advise on AMR/AMC/AMU actions in Bhutan
* Is proficiency in using computer and basic information management tools
* Has experience in laboratory and data management
* Show evidence of experience and leadership potential in the field of surveillance, data management, data analysis and interpretation, as applied to AMR.
* Show evidence of experience and leadership potential in the field of quality management systems especially pertaining to bacterial culture and antibiotic susceptibility testing.
* 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)**

## Antimicrobial Stewardship and Farm Biosecurity – Animal Health (MOA&F) BT24

### Beneficiary Institution

*Any Institutes under*  
*Ministry of Agriculture and Forests* (MOA&F)

### Objectives

* To support AMU surveillance in MoAF by developing the Fellow’s expertise in promoting good livestock farming practices to reduce infection and disease spread, and in inspection and monitoring methods to encourage the reduction of antibiotic usage in farm animals
* To strengthen the skills required to record and analyse AMU/C data to design AMR control strategies which can be used in MoAF and other sites
* Sustainability of AMR and AMU surveillance by strengthening 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. Analysis and interpretation of AMR and AMU data to improve use of antimicrobials
2. Understanding the role of the farm biosecurity measures in infection control in farm animals and promoting best practices
3. Understanding behaviour change theory in relation to AMR, and developing an evidence-based approach to improve use of antimicrobials
4. Understand what other sectors are doing to control use of antimicrobials / contain spread of resistant organisms

### 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 ensure AMU/C Surveillance in farms by biosecurity measures of infection control
* Acquired skills which allow analysis and interpretation of AMU and AMR surveillance data to inform prescribing practices and future surveillance priorities
* Developed leadership and communication skills to allow them to become an advocate for improving antimicrobial surveillance and use of antimicrobials
* Contributed to One Health workshops, meetings or other activities focusing on advancing antimicrobial surveillance and prudent antimicrobial use
* Contributed to One Health communities of practice and supported Professional Fellows (Cohort I), Policy Fellows and where appropriate

### Eligibility criteria for the Antimicrobial Stewardship and Farm Biosecurity Fellowship (MOA&F)

In addition to those in Section A, candidates for the Antimicrobial Stewardship and Farm Biosecurity Fellowship in MOA&F must meet the following criteria:

* Be endorsed by and accountable to MOA&F through employment
* Hold a veterinary degree and have relevant professional experience
* Show evidence of experience and leadership potential

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

## Antimicrobial Stewardship and Farm Biosecurity – Animal Health (MOA&F) BT25

### Beneficiary Institution

*Any Institutes under*  
*Ministry of Agriculture and Forests*

### Objectives

* To support AMU surveillance in MoAF by developing the Fellow’s expertise in promoting good livestock farming practices to reduce infection and disease spread, and in inspection and monitoring methods to encourage the reduction of antibiotic usage in farm animals
* To strengthen the skills required to record and analyse AMU/C data to design AMR control strategies which can be used in MoAF and other sites
* Sustainability of AMR and AMU surveillance by strengthening 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. Analysis and interpretation of AMR and AMU data to improve use of antimicrobials
2. Understanding the role of the farm biosecurity measures in infection control in farm animals and promoting best practices
3. Understanding behaviour change theory in relation to AMR, and developing an evidence-based approach to improve use of antimicrobials
4. Understand what other sectors are doing to control use of antimicrobials / contain spread of resistant organisms

### 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 ensure AMU/C Surveillance in farms by biosecurity measures of infection control
* Acquired skills which allow analysis and interpretation of AMU and AMR surveillance data to inform prescribing practices and future surveillance priorities
* Developed leadership and communication skills to allow them to become an advocate for improving antimicrobial surveillance and use of antimicrobials
* Contributed to One Health workshops, meetings or other activities focusing on advancing antimicrobial surveillance and prudent antimicrobial use
* Contributed to One Health communities of practice and supported Professional Fellows (Cohort I), Policy Fellows and where appropriate

### Eligibility criteria for the Antimicrobial Stewardship and Farm Biosecurity Fellowship (MOA&F)

In addition to those in Section A, candidates for the Antimicrobial Stewardship and Farm Biosecurity Fellowship in MOA&F must meet the following criteria:

* Be endorsed by and accountable to MOA&F through employment
* Hold a veterinary degree and have relevant professional experience
* Show evidence of experience and leadership potential