

Fleming Fellows Symposium: Sustainability and Global Knowledge

April 2026

Fellowship Scheme

Executive Summary

It is with tremendous pleasure and pride that we acknowledge the sixth and final Fleming Fellows' Symposium. Over three days, speakers reflected on the global and national situation of Antimicrobial Resistance (AMR) and how Fleming Fund fellows and Host Institutions have contributed to the tangible progress during phase 2 of the programme.

The Symposium provided an opportunity for Host Institutions to talk about their organisation's research and to introduce their fellows, followed by presentations from their cohorts. In all, speakers included 32 phase 2 fellows, eight Host Institutions and seven speakers contributed to a stimulating event. Not only was it gratifying to see how fellows have maximised the opportunities made available to them by their mentors, but also how they have developed and progressed beyond their fellowships, using their knowledge to benefit other institutions and communities.

The Symposium opened with Prof Dame Sally Davies, UK Special Envoy on Antimicrobial Resistance, recognising the continuing challenge of AMR globally, and acknowledging the amazing success of the Fleming Fund Fellowship Scheme in strengthening health systems, informing national policies and protecting lives from AMR. Dame Sally Davies concluded by stating that the end of the Fleming Fund is "not a finish line but a handover" and looked forward to seeing the continuation of the work started by fellows and alumni.

Day One continued with three Host Institutions and six cohorts of fellows, and as with days two and three, it was inspiring to see that how much has been achieved despite the challenges of time and work pressures many experienced. Their perseverance is due to the dedication of both fellows and mentors and their determination to make a difference in the world. An observation repeated throughout the Symposium was the benefit that accrued from fellows and cohorts joining together to visit their Host Institutions. Not only was learning accelerated during these times, but there were

opportunities to experience other health, institutional, and government systems and discuss them across cohorts, bringing increased understanding and learning.

The new **Fleming Initiative** is now leading the way for the future of the Fellowship Scheme by continuing the Alumni Network and The Petri Dish monthly newsletter. This will allow continued connections among Fleming Fund fellows and alumni, as well as new connections enabled by the Fleming Initiative's scale and regional networks. Fellows and alumni are encouraged to register through the link on page nine.

The first day was closed by Dr Toby Leslie, Fleming Fund Global Technical Lead at Mott MacDonald, who emphasised that the Fellowship programme is all about the people. Dr Leslie praised the fellows, mentors and Host Institutions for the breadth and quality of work accomplished.

On Day Two, we heard from one Host Institution and seven cohorts, again spanning several geographical regions. Prof Kirsty Busing described the benefits of face-to-face learning and the long-term benefits of fellows being embedded in their Beneficiary Institutions. There was also an acknowledgement of the diverse range of achievements made by fellows and their impact on communities. 'One Health' collaboration is not always easy to achieve, but by working together in their cohorts, combined with ongoing advocacy, fellows are hopeful for continued progress in this area. Collaborative projects described by fellows from across the regions showed great diversity while addressing important local or national needs; several groups promoted positive behavioural change during the Symposium.

As fellows' projects come to an end, it is hoped that many will be able to publish their work, as some have already. Closing remarks for the day were given by Holly Rhyner-Jones, Head of the Fleming Fund at the UK Department of Health and Social Care. She showed her appreciation for the efforts of all engaged in the fellowships and emphasised the value of the Symposium as a highly beneficial platform to celebrate the many achievements. Holly also commended fellows for their lasting impact on AMR and the continuing role

of the Alumni Network.

Four Host Institutions and seven cohorts presented on Day Three. The presentations highlighted a diverse range of projects and achievements by fellows, including research into the drivers of AMR on dairy farms, attendance at conferences, a national AMR awareness campaign, and the development of national roadmaps for the control of AMR. Key reflections from the Host Institutions acknowledged the difficulty of working on AMR and One Health, but all praised their fellows' resourcefulness in these conditions.

The importance of presenting at international AMR and One Health conferences was also highlighted, as they provide professional exposure for the fellows, opportunities to build new relationships for collaboration, and key learning opportunities. Fellows and mentors highlighted the immense benefits of a

multi-sector, cohort-based, internationally engaged programme for practitioners and policymakers. Aligning fellows' work plans with national AMR priorities has benefited both their countries and their careers.

Laura Hucks, the Fleming Fund Director at Mott MacDonald, closed the Symposium with her gratitude to everyone for their engagement and to the fellows for their significant contributions to national AMR surveillance systems and global knowledge.

It has been clear, not only from the symposium, but from years of working with the fellows and Host Institutions, that the Fleming Fellowship Scheme has been a voyage of mutual learning and development. It has been an exploration of new partnerships and professional friendships that will outlast the Fleming Fund. While this phase is coming to an end, there is a strong sense of excitement about what lies ahead.

Day One Programme

Welcome and Agenda	
Opening remarks – UK Special Envoy on Antimicrobial Resistance (AMR)	Prof Dame Sally Davies
Host Institution – Chinese University of Hong Kong – Bangladesh, Sri Lanka	Prof Hein Tun
Phase 2 Cohort – Bangladesh	Dr Samsad Khan , Communicable Disease Control, Directorate of General Health Services (DGHS)
Phase 2 Cohort – Sri Lanka	Dr Samantha Gayani Weerasooriya Kuriyawe Muhandiramlage , Veterinary Research Institute (VRI) Dr Gamage Malika Karunaratne , Ministry of Health, Nutrition and Indigenous Medicine
Host Institution – Fondation Mérieux – Lao PDR, Senegal	Dr Florence Pradel
Phase 2 Cohort – Lao PDR	Dr Davone Duangdany , Food and Drug Department (FDD)
Phase 2 Cohort – Senegal	Dr Assane Dieng , Ministry of Health and Social Action (MHSA), National Pharmaceutical Regulatory Agency
BREAK	
Fleming Initiative	Prof Alison Holmes , Director of the Fleming Initiative
Host Institution – African Society of Laboratory Medicine – Tanzania	Dr Kgomotso Makhaola
Phase 2 Cohort – Tanzania	Dr George Mrema , Ministry of Health Ms Aneth Wilbroad , Ministry of Health
Phase 2 Cohort – Uganda, Malawi, Zambia, Kenya	Dr Toby Leslie , Mott MacDonald
Phase 2 Cohort – Uganda	Dr Darius Owachi , Kiruddu National Referral Hospital
Day 1 Closing Remarks – Mott MacDonald, Fleming Fund Global Technical Lead	Dr Toby Leslie , Mott MacDonald

Opening Remarks: Protecting lives



Prof Dame Sally Davies
UK Special Envoy on
Antimicrobial Resistance

Dame Sally Davies began by reflecting on the remarkable achievements of the Fleming Fund and the Fleming Fund fellows. She recognised the ongoing challenge of AMR globally and its disproportionate impact, particularly in low-resource settings. It is here that she acknowledged the Fleming Fund's major achievements, including building national surveillance systems, improving the reporting of AMR surveillance data, and strengthening local leadership.

This includes the core contribution of the Fleming Fellowship Scheme. Fellows are implementing institutional changes to support the effective use of data in decision-making. The fellowships have enabled practitioners from low- and middle-income countries across human and animal health, aquaculture, the

environment and policy to develop deep technical insights and expertise in AMR.

Dame Sally Davies quoted one Host Institution, "Fellows have made tangible contributions to strengthening national surveillance systems, improving data quality and fostering cross-sectoral collaboration. Their professional growth and commitment to knowledge transfer ensure that investment will yield lasting benefits."

Dame Sally Davies used examples from several countries to illustrate how fellows have improved data quality, surveillance and stewardship; influenced policy and created strong One Health collaborations. She emphasised the importance of fellows as a sustainable resource through their continuing work in AMR, their engagement in peer mentorship, and their continued collaboration beyond the programme – emphasising that the end of the Fleming Fund is "not a finish line but a handover".

Dame Sally Davies thanked everyone involved in the Fellowship Scheme for their contribution to its incredible success. The work has strengthened systems, informed national policy, and protected lives from AMR, and will continue to do so for years to come.

Host Institution – Chinese University of Hong Kong

Prof Hein Tun, on behalf of the Host Institution

Professor Hein Tun and his team are members of the JC School of Public Health and Primary Care at the Chinese University of Hong Kong (CUHK). They are one of the leading public health schools in the region and believe that public health problems don't respect borders, geographies or disciplines. With this ethos in mind, CUHK collaborated with local One Health stakeholders to train fellows from Sri Lanka and Bangladesh.

Prof Tun praised the fellows and was struck by their drive and motivation, saying: "They were not here in this programme, in this fellowship, just to tick boxes

or collect the certificate. They really wanted to solve the actual problem back in their country ... what really impressed me was watching them break down their own siloes." He then went on to comment that the best part was that fellows didn't keep their knowledge to themselves but have become ambassadors and educators. He offered four recommendations to the fellows, encouraging them to:

- Maintain their networks and keep in touch with their mentors.
- Embed their knowledge within their institutions.
- Position themselves as leaders.
- Advocate for budget allocations and build partnerships for more sustainable support.

Prof Tun closed by thanking the Fleming Fund for the opportunity, their trust and support, and the fellows for their commitment and inspiring their mentors.



Mentors from CUHK and fellows from Bangladesh and Sri Lanka

Fellows – Bangladesh: AMR One Health

Dr Samsad Rabbani Khan, on behalf of the cohort



Dr Tasnim Khanam
Rangpur Medical
College



Md Shariful Islam
Directorate
General of Drug
Administration



**Dr Shukes Chandra
Badhy**
Central Disease
Investigation
Laboratory



**Dr Muhammed Imran
Uddin**
Institute of Public
Health



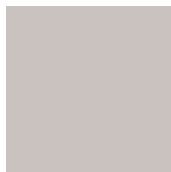
Dr Rabeya Sultana
Institute of
Epidemiology,
Disease Control and
Research



Dr S M Tushar Alom
Khulna Medical
College



Plabon Sarker
Fish Inspection and
Quality Control



**Md Shahi Emran
Rasel**
Aquaculture
Laboratory, Khulna



**Dr Samsad Rabbani
Khan**
Communicable
Disease Control,
Directorate General
of Health Services



**Dr Mohammad Abdullah-Al
Mamun** Department of
Livestock Services

Dr Samsad Rabbani Khan presented the cohort's collaborative journey, achievements, challenges, and future directions, highlighting how the fellowships have strengthened AMR One Health capacity in Bangladesh.

Their overarching aim was to enhance national capacity to support effective AMR containment. These fellowships focused on strengthening One Health AMR surveillance across human, animal, aquaculture, and environmental

sectors while improving laboratory quality, diagnostics, and data reliability. Their fellowships also focused on enhancing antimicrobial stewardship (AMS) practices and supporting evidence-based AMR policy and governance.

Key achievements include strengthened AMS across sectors, improved quality assurance and adherence to standard operating procedures, and increased capacity for prescription audits. In addition, better data integration and stronger links between surveillance evidence, prescribing practices and policy have supported the development of national AMR strategies, guidelines and advocacy. Most importantly, the fellows are focused on making their contributions sustainable by integrating the skills, systems and leadership developed through the fellowship into national institutions.



Members of the Bangladesh cohort working on their collaborative project

The Bangladesh cohort highlighted some of the challenges they faced during their fellowships. These included administrative and logistical approval delays, balancing the fellowship activities with daily jobs and limited in-person mentoring.

The cohort's collaborative project was a scoping review on the integration of One Health AMR data. The aim was to identify global initiatives and review the challenges and opportunities for integrating AMR data across the

health sectors. The fellows used the project to develop skills such as conducting systematic literature reviews and scientific writing.

The Bangladesh fellows will continue to strengthen routine AMR reporting, ensure timely submission of high-quality data to the national system, support AMS activities, advance One Health AMR data integration, refine and implement national AMR policy and translate evidence into practice.

Fellows – Sri Lanka: Evidence-based policy

Dr Malika Karunaratne and Dr Gayani Weerasooriya, on behalf of the cohort



Dhammika Kumarasinghe
Department of Animal Production and Health



Chandana Abeysekera
District General Hospital (DGHM), Matara



Nilukshi Liyanagunawardena
Veterinary Research Institute



Nadeesha Ranaweera
Medical Research Institute



Balachandran Devakanthan
Teaching Hospital, Batticaloa



Gayani Weerasooriya
Veterinary Research Institute



Uthpala Sinhalagoda
Department of Animal Production and Health



Prajani Heenatigala
National Aquatic Resources Research and Development Agency



Malika Karunaratne
Ministry of Health, Nutrition and Indigenous Medicine

The Sri Lankan fellowships focused on upgrading national AMR surveillance in both animal and human health sectors by strengthening laboratory capacity, advancing techniques, improving quality assurance and data interpretation. Another key focus was reviewing Sri Lanka's draft AMR policy and One Health governance mechanisms.

Key achievements of the cohort include the development of biosafety and biosecurity Standard Operating Procedures (SOPs), strengthened antimicrobial use (AMU) surveillance methods, and enhanced laboratory capacity across human and animal health sectors. The work has also advanced research on multidrug-resistant (MDR) organisms, *Campylobacter*, and *Salmonella*, contributed to national AMR policy review through a recommendations booklet, and supported widespread knowledge sharing via national presentations.

The cohort highlighted some of the challenges they faced during their fellowships. These included fragmented and non-digitised AMR/AMU data systems,

limited laboratory capacity, irregular supplies of reagents and antibiotics, and poor availability of quality AMU data. These issues are compounded by low AMR awareness and stewardship, weak documentation, and a lack of dedicated staff for AMR mitigation at the central level.

Despite the challenges encountered, they delivered impressive outcomes, including the successful completion of a collaborative project to assess knowledge, attitudes, and practices related to AMU and resistance among the public and One Health stakeholders in Sri Lanka. This study was the first One Health KAP (Knowledge, Attitudes, Practices) study conducted in the country and included a wide range of participants, including medical staff, farmers, veterinarians, and members of the public. The project also helped to establish and strengthen AMS programmes in participating hospitals and farms. Importantly, the findings will inform targeted awareness campaigns and contribute to evidence-based policymaking on AMR.

Host Institution – Fondation Mérieux

Dr Florence Pradel

Dr Florence Pradel spoke on behalf of Fondation Mérieux (FMx), which has expertise in AMR, including laboratory capacity building. To cover the broad range of specialities for the fellowships, they set up a consortium that included experts in surveillance, veterinary health, policy, quality management, genomics, and the environmental sector. These skills were crucial for the collaborative project in Senegal aimed at identifying resistance hotspots across various wetter environments. The partners included: Assistance

Publique – Hôpitaux de Paris (APHP), Bicjet-Claude Bernard Hospital and University Paris Cité, APHP, Paris – Hôpital Robert Debré, University Paris Cité, Regional Laboratory and Blood Bank of St Louis, Senegal, Université Iba Der Thiam, Thies, Senegal, Université Gaston Berger de Saint Louis, Senegal, VetAgroSup, ANSES (French Agency for Food, Environment and Occupational Health & Safety) and the University of Limoges, France.

Reflecting on the fellowship programme, FMx highlighted the value of cross-disciplinary mentorship as a key strength, fostering collaboration, learning, and successful outcomes across sectors.



Fondation Mérieux’s orientation workshop in Senegal, November 2025

Fellows – Lao PDR: AMC surveillance expertise

Dr Davone Duangdany, on behalf of the cohort



Dr Davone Duangdany
Food and Drug Department



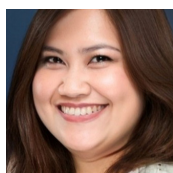
Dr Souphatsone Houatthongkham
National Center for Laboratory and Epidemiology



Dr Khambai Noilalth
National Center for Laboratory and Epidemiology



Kongchack Phommachack
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Dr Anousone Rasaphonh
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Dr Loungnilanh Manivanh
Setthathirath Hospital



Phoumsavath Ounnavong
Department of Healthcare and Rehabilitation



Vilayvanh Soukvilay
National Animal Health Laboratory



Dr Phonevixay Vilaylangsy
Ministry of Health



Somphaivanh Chanthavong
Department of Livestock & Fisheries, National Animal Health Laboratory



Lao PDR fellows amongst the attendees at the Policy Dialogue on Mitigating AMR-related Mortality and Morbidity in Lao PDR, Vientiane

The Lao PDR fellowships focused on strengthening technical expertise and leadership capacity in antimicrobial consumption (AMC) surveillance through ongoing training, the development of standardised protocols, and leadership development.

A strong emphasis was placed on enhancing data quality to support improved decision-making and the long-term, sustainable use of antimicrobials, while building robust capacity to ensure effective monitoring and responsiveness to AMR challenges. In addition, the fellowships strengthened capacity on AMU at both central and provincial levels, contributing to improved prescribing practices and the promotion of responsible AMU across healthcare facilities.

Key achievements of the Lao PDR fellowships included contributions to the revision and development of the Lao PDR's National Strategic Plan and AMR protocols, as well as participation in policy dialogues focused on mitigating AMR-related mortality and morbidity in the Lao PDR. The cohort also provided awareness on One Health and outlined the basis for policy recommendations in both the human and animal health sectors. At the provincial level, they conducted Point Prevalence Surveys (PPS) and provided training on data collection.

The cohort conducted a before-and-after study in the NICU/PICU at University Hospital in Lao PDR to examine the hospital's environmental reservoir and the impact of cleaning practices. Furthermore, they had the opportunity to promote this work at international conferences, such as the World Congress on Infectious Diseases in Italy.

Overall, the fellowships strengthened the understanding of AMC and AMU surveillance and the public health impact of AMR. They highlighted the importance of multisectoral collaboration and stakeholder engagement, enhanced skills in data analysis and helped to identify best practices for capacity building at the national and local levels.

Key challenges included translating surveillance data into clear, compelling policy briefs that could drive action and secure stakeholder commitment, alongside managing workload pressures. Despite these challenges, the fellows are committed to continuing their work beyond the Fellowship Scheme. They plan to publish national AMC trends, advocate for responsible antimicrobial practices, strengthen surveillance systems and support the design and implementation of targeted interventions to reduce AMR in Lao PDR.

Fellows – Senegal: Integrated AMR animal health

Dr Assane Dieng, on behalf of the cohort



Assane Dieng
National
Pharmaceutical
Regulatory Agency



Aida Diop
Ministry of Agriculture,
Food Sovereignty
and Livestock/
National Laboratory
for Livestock and
Veterinary Research



Khadija S. Diop
National High Council
for Health Security
'One Health'



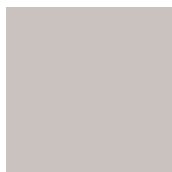
**Alioune Badara Kane
Diouf**
Ministry of Fisheries,
Maritime and Port
Infrastructure/
Directorate of Fish
Processing Industries



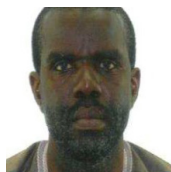
**Coumba Dabbakh
Fall**
National High Council
for Health Security
'One Health'



Daba Sene
Ministry of Water
and Sanitation,
Department of
Sanitation



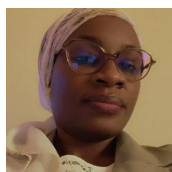
Moutar Seydi
Directorate of
Veterinary Services



**Mouhamadou
Abdoulaye Sonko**
Ministry of Health
and Social Action,
Directorate of
Laboratories



Alassane Toure
Ministry of Health
and Social Action,
National Public
Health Laboratory



Fatimata Wone
Ministry of Health
and Social Action,
Department of
Infectious Diseases,
Dalal Jamm Hospital

The Senegal fellowships aimed to assess antibiotic consumption in Senegal and to generate high-quality AMR data in animal health laboratories.

During their fellowships, the fellows learnt the importance of training their medical staff on AMC analysis and contributing evidence-based data for the control of AMR. They also learnt to disseminate knowledge within the animal health sector and how to strengthen collaborations to improve integrated surveillance.

The cohort generated strong academic and technical outputs, including scientific publications and presentations at international conferences, such as the symposium on Antimicrobial Resistance in Animals and the Environment (ARAE) 2025 and the One Health Symposium 2025. In addition, they supported the development of strategies and standardised protocols addressing AMR/AMU/AMC. The cohort also conducted a pilot study on the detection of Extended-Spectrum Beta-Lactamase (ESBL) and carbapenemase-producing *Escherichia coli* in wastewater samples, contributing valuable evidence to inform surveillance and public health interventions.

Furthermore, the cohort trained medical staff in antibiotic consumption analysis, contributed evidence-based data, disseminated knowledge in the

animal health sector, and strengthened sector-wide collaborations to improve integrated surveillance.

The focus of their collaborative project was to assess the level of AMC in Senegal and to produce high-quality AMR data in the animal and human health sectors. The cohort developed the protocol but were unable to proceed with the full project due to unforeseen challenges.



Fellows collecting wastewater samples

The Fleming Initiative, Imperial College London: Fleming Alumni Network



Prof Alison Holmes



Kerri Hill-Cawthorne

Prof Alison Holmes began by outlining the Fleming Initiative's mission: to create and develop a thriving network of cross-sector, interdisciplinary and multi-professional people dedicated to addressing the challenge of AMR through coordinated and innovative efforts. Their first step is to establish an Alumni Network that will draw on Fleming Fund Fellowship alumni.

Prof Holmes outlined plans for the global alumni network, which will be a central hub for all fellows and alumni across all the Fleming Initiative programmes. The network will focus on areas such as leadership development, continuing education through masterclasses, networking and mentorship. There are plans to provide small grants

in the future, as well as support for attending conferences and for joint research opportunities.

Prof Holmes introduced some of their partners, including the Centres for Antimicrobial Optimisation Network (CamoNet), which is a Wellcome Trust-funded research network, and AMP Health, a South African-based not-for-profit specialising in leadership and people development. The Fleming Initiative aims to provide a platform for continued learning and leadership across countries and disciplines, turning the fellowship experience into long-term impacts for individuals, institutions and health systems. The Fleming Initiative team look forward to working closely with the Fleming Fund fellows and alumni to support the next stage of their journey as part of a network of engaged AMR leaders.

The Fleming Initiative will launch with a dedicated area on its website to serve as a platform for networking and knowledge sharing. The Fellowship Scheme's monthly newsletter – Petri Dish – will also continue so that fellows and alumni can continue to share information about their work and experiences.

Fellows and alumni are encouraged to sign up for the network, as there will be no automatic transfer for this programme. This [link to the website](#) has an invitation to join the community. It is an amazing opportunity to keep in touch with one another and maintain the momentum gained through the fellowships. There is also a contact email address on the webpage for any questions.

Host institution – African Society of Laboratory Medicine (ASLM)

Dr Kgomotso Makhaola

ASLM led a consortium of four specialised African institutions to mentor the fellows from Tanzania, including Africa CDC, REACT, the Infectious Disease Institute of Uganda and the Noguchi Memorial Institute for Medical Research. Their expertise covered laboratory systems, clinical research, genomics and stewardship – all under the umbrella of One Health.

Dr Makhaola described the deep range of expertise brought by the mentors in critical areas for AMR response, including AMR surveillance, AMS and advocacy. They also covered data analytics, laboratory quality management systems, Whole Genome

Sequencing (WGS) and bioinformatics. One Health research and policy integration were also key areas of knowledge.

Dr Makhaola reflected on what had worked well with the Fleming Fellowship Scheme, including the cohort model's fostering of collaboration and peer learning. "The blended learning was validated as an excellent approach for enhancing skill retention for fellows and consolidating knowledge application. The alignment of workplan activities with Tanzania's National Action plan (NAP) ensured relevance and impact."

Dr Makhaola said that the fellowships have shown that "investing in mid-career professionals within national systems yields lasting impact." He also recommended formalising the alumni networks, integrating sustainability from the programme's outset, and continuing to champion One Health approaches.



Members of the team at ASLM

Fellows – Tanzania: Workforce strengthening

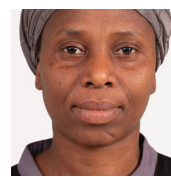
Dr George Mrema, on behalf of the cohort



Modest B. Chuwa
National Public
Health Laboratory



Anderson Yohana
Tanzania Veterinary
Laboratory Agency



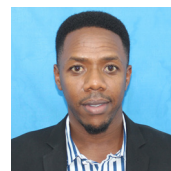
Nyambuli S. Muinja
National Fish Quality
Control Laboratory



Christopher Sikombe
Ministry of Livestock
and Fisheries



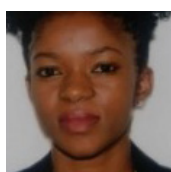
Adelina G. Gadiye
Muhimbili National
Hospital



George Mrema
Ministry of Health



Godwin A. Minga
Tanzania Veterinary
Laboratory Agency



Aneth Wilbroad
Ministry of Health



Emiliana N Francis
Ministry of Health
– Pharmaceutical
Services Unit

The fellowships aimed to strengthen the national workforce and technical resources, as well as to increase policy leadership capacity for AMR surveillance and response. This was to go hand in hand with the enhancement of integrated AMR/AMU/AMC surveillance across One Health sectors. “The fellows’ work, therefore, directly supported the implementation of Tanzania’s NAP on AMR by improving data quality and use in policy and practice and promoting long-term sustainability through workforce strengthening,” said Dr Mrema.

The cohort’s achievements included leading a gender-responsive, cross-sectoral AMR study in Kilimanjaro, co-developing more than 5 national guidelines, and strengthening advanced technical skills. In addition, more than 150 professionals were trained in AMS, bacteriology, WHONET and data analysis. Fellows also assumed key leadership roles in national AMR coordination mechanisms and continental awareness-raising activities.

Dr George Mrema, Nyambuli Muinja, Modest Chuwa and their mentor during a training visit to the Noguchi Memorial Institute for Medical Research (NMIMR) at the University of Ghana. They attended a practical session on library preparation for whole genome sequencing and loading samples onto the GridION platform.

The cohort highlighted that balancing fellowship duties with full-time employment was a challenge. Other challenges faced were delays in administrative and ethical approvals, data access restrictions in human health surveillance, and post-election political unrest. These also impacted progress on their collaborative project on gender-based antibiotic utilisation and its relationship with AMR resistance in humans, poultry and aquaculture in Kilimanjaro. The fellows had planned to analyse the data collected in the field; however, much of this was cancelled due to the political situation, which limited what they could achieve. There were also delays

in obtaining ethical clearance, which affected their ability to collect data.

The fellows echoed their mentors’ recommendations, adding that the cohort model is a powerful multiplier of collaboration and impact. Post-fellowship, they plan to finalise and publish their collaborative project. They plan to continue influencing AMR policy and practice, leverage the cohort network for continued collaboration, and mentor the next generation of AMR professionals in Tanzania.



Dr George Mrema, Nyambuli Muinja, Modest Chuwa and their mentor during a training visit to the NMIMR at the University of Ghana

Fellows – Uganda, Malawi, Zambia, Kenya

Dr Toby Leslie, Mott MacDonald, on behalf of the Tutor Group

Four cohorts of fellows from Uganda, Malawi, Zambia and Kenya were supported by the University of Edinburgh and then by a tutor group comprising members of the Mott MacDonald Fleming Fund Technical Team. Dr Toby Leslie praised the fellows for their resilience and said that it had been a pleasure for the team to work directly with them.

Fellows – Uganda: National capacity strengthening

Dr Darius Owachi, on behalf of the Uganda cohort: national action



Wilfred Opira
Uganda National Drug Authority



Darius Owachi
Kiruddu National Referral Hospital



Pamela Abwoyo
Uganda National Drug Authority



Harriet Akello
Ministry of Health, Pharmacy Division

The Uganda fellowship cohort aimed to strengthen national capacity for AMR and AMU/C surveillance; build technical and leadership skills in AMR control; promote and strengthen a One Health approach; and

support sustainable institutional capacity development. The fellows have delivered strong and meaningful outcomes. Through training, mentorship, and cross-institutional learning, they strengthened technical, data analysis, and leadership skills while achieving key outputs – including improved One Health coordination, enhanced AMR and AMU/AMC surveillance, and the review and revision of national policies. However, they highlighted that weak coordination across sectors, fragmented AMR/AMU/AMC data sources, and resource constraints posed challenges.

The fellows benefited from one-to-one mentorship and training, as well as in-person workshops that were rich learning experiences, contributing to their overall professional development. They also received support from the alumni of the Fleming Fellowship Scheme.

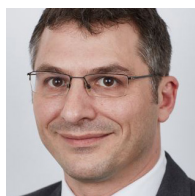
The fellows conducted a collaborative project: 'Prevalence and Associated Factors of Extended-Spectrum Beta-Lactamase-Producing Escherichia coli in Wet Markets in Lira District, Uganda: A One-Health Cross-Sectional Study'. The objective of this study was to determine the prevalence and associated factors of ESBL-producing E. coli in three sample groups (humans, chickens, and wastewater) in the wet markets in the Lira district.

The fellows plan to continue to support the implementation of Uganda's AMR NAP; strengthen institutional capacity through mentoring colleagues; integrate AMU/AMC data into routine decision-making; and sustain regional and international collaboration.



Fellows and Alumni at the Health Ministers Conference 2025, Malawi

Closing Remarks: Building AMR leadership



Dr Toby Leslie
Fleming Fund Global Technical Lead,
Mott MacDonald

Dr Toby Leslie thanked all the speakers. He said how some of the fellows' photographs shared at the Symposium were a great illustration of how the Fellowship programme is all about the people. The amazing collection of presentations showcased the depth and breadth of the work done by all the fellows, their supporting mentors, and Host Institutions.

The practical nature of the work had struck him and how it was already leading directly to change and advocacy. On the Fleming Fund Alumni Network's incorporation into the Fleming Initiative, he expressed his thanks to Prof Holmes and her team for stepping up and taking on the Fleming Fund fellows in what he believes will be a fruitful partnership.

Dr Leslie emphasised that we must keep the networks alive, share knowledge, gain institutional backing for the work of the fellowships, and, most of all, build leadership. He closed by saying that the incredible leadership skills evidenced during day one of the symposium leave us all hopeful about the future. He thanked the presenters, the Mott MacDonald team and colleagues at the UK Department of Health and Social Care, who have supported the Fleming Fund for nearly a decade.

Day Two Programme

Welcome	
Host Institution – The Peter Doherty Institute for Infection and Immunity at the University of Melbourne Papua New Guinea, Timor-Leste, Bhutan, Nepal, Pakistan	Prof Kirsty Buising
Phase 2 Cohort – Papua New Guinea	David Kivia , National Animal Health and Food Testing Laboratory (NAHFTL) Joyce Lawrence , Port Moresby General Hospital (PMGH)
Phase 2 Cohort – Timor-Leste	Nuno Fernandes , Ministry of Agriculture and Fisheries (MAF) / National Directorate of Veterinary (NDV) Maurício Belo , BEE Timor-Leste
Phase 2 Cohort – Bhutan	Tshering Choden , National Center for Animal Health (NCAH) Dorji Tshering , Ministry of Health
Phase 2 Cohort – Nepal	Sreska Shrestha , National Public Health Laboratory (NPHL) Samjhana Kumari Kafle , Ministry of Agriculture
Phase 2 Cohort – Pakistan	Aqsa Hashmi , Drug Regulatory Authority of Pakistan (DRAP) Muhammad Salman , National Institute of Health (NIH), Ministry of National Health Services, Regulations and Coordination (MNHSRC)
BREAK	
Phase 2 Cohort – Malawi	Tawina Koleta Kenthani , Kamuzu Central Hospital Lecollins Mthilakuwili , Central Veterinary Laboratory
Phase 2 Cohort – Zambia	Tibale Ngwata , Zambia Environmental Management Agency (ZEMA) Kwila Mwansa , Livingstone University Teaching Hospital
Day 2 Closing Remarks – UK Department of Health and Social Care	Holly Rhyner-Jones , Head of The Fleming Fund, UK Department of Health and Social Care.

Host Institution – The Peter Doherty Institution for Infection and Immunity at the University of Melbourne

Prof Kirsty Buising

The Peter Doherty Institute for Infection and Immunity serves as the Host Institute for Papua New Guinea, Timor-Leste, Bhutan, Nepal and Pakistan. The Doherty Institute is a joint venture between the University of Melbourne and the Royal Melbourne Hospital. Their expertise includes laboratory diagnostics, AMS, epidemiology and surveillance, infection prevention and control, and pathogen genomics. Their approach covers strategy and governance, capacity building and workforce strengthening, monitoring and evaluation, policy and advocacy, and partnerships.

The University of Melbourne also hosts the Asia Pacific Centre for Animal Health, which has been a partner throughout the Fleming Fund's implementation. They focus on the development of vaccines and diagnostic tests, epidemiology and stewardship.

Some of the key reflections and recommendations highlighted by Prof Buising during the fellowships:

- Face-to-face interactions were highly valued and more productive than online sessions.
- Regular communication between Beneficiary Institutions, Country Grant, and fellows was critical.
- Flexibility in workplans and budgets is essential to adapt to country and fellow priorities.
- Fellows embedded in Beneficiary Institutions have achieved sustainable outcomes that support broader health systems.
- Responding to emerging training needs throughout the fellowship strengthens relationships and creates partnership opportunities.
- Train-the-trainer model maximises the impact of fellowships.
- There are opportunities to build partnerships and collaborations to address AMR now; however, tangible outputs to continue work (e.g. co-developed publications, grant proposals) are required.



Phase 2 Doherty cohorts

Fellows – Papua New Guinea: Enriched learning

Joyce Lawrence, on behalf of the cohort



Temas Ikanofi
Central Public Health
Laborato



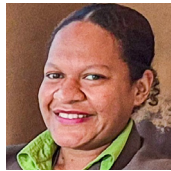
David Guore Kivia
National Animal
Health and Food
Testing Laboratory



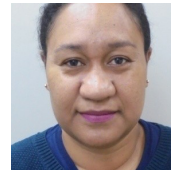
Joyce Lawrence
Port Moresby General
Hospital



Thompson Walambo
(National Agricultural
Quarantine and
Inspection Authority)



Valeria Nikita Baru
National Animal
Health and Food
Testing Laboratory



**Nancy Emmanuela
Bala**
Pharmaceutical
Services Standards
Branch



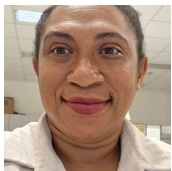
Ben Paul
National Fisheries
Authority



Kevin Isom
Central Public Health
Laboratory



Dorothy Pagru
National Agricultural
Quarantine and
Inspection Authority



Becky Max
Goroka Provincial
Hospital

The Papua New Guinea (PNG) fellowships aimed to strengthen epidemiology, laboratory, and AMR surveillance capacity across human, animal, and aquaculture sectors. This included standardised testing methods, quality assurance, and SOPs aligned with international standards. They also focused on improving data sharing and contributing to the sustainability of AMR surveillance.

The cohort made some notable contributions to AMR surveillance and stewardship in PNG, particularly through the generation of AMR data across bacteria, wastewater and aquaculture sectors. Furthermore, laboratory capacity was expanded to include testing for additional priority pathogens and conditions, including gonorrhoea, mastitis, and erysipelas.

A major milestone was the completion of the first PPS of AMU at PMGH, providing critical insights into prescribing practices. In parallel, antimicrobial treatment guidelines for animals were drafted, strengthening stewardship in the animal health sector. The programme also supported the analysis of AMR surveillance data at the Central Public Health Laboratory, and the national mapping of AMR and AMC data to identify gaps and inform future surveillance and intervention efforts.

The PNG cohort conducted a One Health collaborative project titled 'Country-wide Awareness on AMR and One Health'. This project assessed how to improve awareness and understanding of AMR through a One Health approach in-country. They used social media platforms to enhance public awareness on



Fellows presenting on NBC radio talk show

AMR, particularly in the week leading up to World Antimicrobial Resistance Awareness Week (WAAW). Key activities included distributing posters and pamphlets, live interviews on national news channels, radio question and answer sessions, and national text message communications.

The collaborative project enabled awareness activities to reach all major fish farms in PNG through fellows' engagement in television, radio, presentations, and other outreach platforms.



Ben Paul conducting awareness activities in major fish farms in PNG

Some challenges faced during their fellowships were: resource limitations; language and geographical barriers; limited AMR and One Health awareness; coordination and internet connectivity issues; and constraints in data sharing, diagnostics, and access to international standards.

Despite the challenges, the fellows found the fellowships to be an enriching learning experience. The fellows highlighted key knowledge gaps in AMR and One Health, strengthened skills in surveillance, laboratory diagnostics and data generation, and developed and aligned SOPs with international standards. They also emphasised the importance of sustained investment, inter-sectoral collaboration through a One Health approach, and consistent and targeted awareness campaigns across PNG – particularly through WAAW and youth-focused initiatives.

The PNG fellows indicated next steps should focus on continuing collaboration to combat AMR in PNG and to seek further funding to maintain a sustainable approach. They also plan to ensure quality data is generated and submitted to the Global Antimicrobial resistance and Use Surveillance System (GLASS) to help drive policy changes.



Fellows at the WAAW celebration at Port Moresby General Hospital

Fellows – Timor-Leste: AMU behavioural change

Nuno Fernandes and Mauricio Belo, on behalf of the cohort



Imaculada De Fatima Pereira Saldanha
Guido Valadares
National Hospital



Celita Osorio Do Rosario
National Health
Laboratory



Nuno Fernandes
Ministry of Agriculture
and Fisheries (MAF)/
National Directorate
of Veterinary



Ezequiel Nunes Da Costa Ribeiro
Veterinary Diagnostic
Laboratory



Junilia Nunes
Veterinary Diagnostic
Laboratory



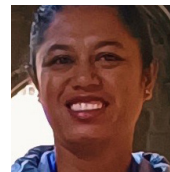
Mauricio Moita Belo
BEE Timor-Leste



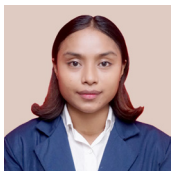
Leticia Varela Niha
Instituto Nacional
Farmacia no Produto
Medicamento



Tiziana Da Silva Maria
Guido Valadares
National Hospital



Olivia Maria
Ministry of Health



Carmelita Soare De Jesus
Ministry of Agriculture and
Fisheries/National Directorate
of Veterinary

The Timor-Leste fellowships aimed to strengthen technical, surveillance and policy capacity across One Health sectors for responsible AMU and AMR control. As a result of their fellowships, the cohort were able to significantly strengthen their understanding of AMR, AMC and AMU surveillance, data analysis and reporting, and One Health policy.

Their work helped to raise community awareness and promoted responsible AMU through a One Health approach in Timor-Leste, alongside building capacity to monitor antibiotic use in health facilities using standardised AMU surveillance methods. The capacity of laboratories was enhanced to improve AMR testing, data quality, and resistance reporting, and treatment guidelines were developed to support responsible AMU in livestock. Importantly, the programme deepened the understanding of AMR transmission across humans, animals, and the environment and supported the translation of AMR evidence into coordinated national policies and action plans – strengthening a sustainable One Health response in Timor-Leste.

The fellows from Timor-Leste highlighted the lack of surveillance data and weak data integration across sectors as key challenges faced during their fellowships. Additionally, constraints in standardised AMU/AMC reporting systems impacted surveillance quality. At the policy-level, they also faced challenges with weak coordination across the One Health sector, translating technical evidence into policy, and sustaining implementation with limited resources.



Timor-Leste fellows celebrating WAAW 2025

Despite the challenges faced, the fellows gained significant learning across multiple areas of AMR and AMU surveillance, laboratory systems, and One Health policy. In the human health sector, they developed skills in AMU surveillance and AMC analysis and applied laboratory techniques to detect and monitor AMR in clinical pathogens. In the animal and environmental health sectors, they enhanced capacity in AMU and AMR surveillance, sampling, and analysis across animal and environment health, strengthening the understanding of One Health transmission pathways.



Timor-Leste fellows with Prof Glenn Browning from Doherty Institute

Their collaborative project aimed to increase community awareness and promote positive behavioural change related to responsible AMU through the application of a One Health approach in Timor-Leste. The project planned to improve community understanding of AMR and its risks, promote rational antibiotic use and enhance cross-sector collaboration.

Furthermore, the Timor-Leste fellows plan to use their knowledge to continue strengthening AMR surveillance systems, building laboratory capacity, improving environmental AMR surveillance, strengthening One Health coordination, translating evidence into policy, and ensuring sustainability with limited resources.

Fellows – Bhutan: Policy into practice

Tshering Choden and Dorji Tshering Belo, on behalf of the cohort



Phurba Wangdi
Jigme Dorji
Wangchuk National
Referral Hospital



Tshering Choden
National Center for
Animal Health



Kunzang Dorji
Royal Center for
Disease Control



Norbu Jamtsho
National Food
Testing Laboratory



Sonam Zangmo
Jigme Dorji
Wangchuk National
Referral Hospital



Nim Dorji
Bhutan Food and
Drug Authority



Tenzin Wangchuk
Ministry of Agriculture
and Livestock



Khando Wangchuk
Jigme Dorji
Wangchuk National
Referral Hospital



Dorji Tshering
Ministry of Health



Narapati Dahal
Ministry of Agriculture
and Livestock

The fellowships in Bhutan were centred on strengthening AMR governance, reviewing national documents, and addressing systemic gaps in AMR implementation. Throughout the programme, they focused on strengthening national coordination, improving technical capacity and translating policy into practice. The Bhutan cohort developed many skills, including, but not limited to, data analysis, basic epidemiology, qualitative study design, policy brief development, and scientific communication.

The Bhutan presentation covered three of their collaborative projects:

- Cattle bodyweight estimation using body measurements to enhance AMS in Bhutan.
- Prioritisation and re-costing of Bhutan’s AMR NAP to guide strategic implementation (2025–2026).
- The establishment of an AMR isolate referral system from the National Food Testing Laboratory and Jigme Dorji Wangchuck National Referral Hospital to the Royal Centre for Disease Control for biobanking and extended testing.

Across these projects, the fellows achieved a wide range of accomplishments. Their work strengthened AMR policy, improved adoption of best practices, and nurtured cross-sectoral collaboration. They also developed key skills, including phenotypic and genotypic analysis of pathogens, DNA sequencing, and bioinformatics.

The Bhutan cohort highlighted that securing sustainable resources for AMU/AMR and receiving funding were key challenges faced during their fellowships. They also highlighted the need for stronger evidence-based processes, such as antibiograms and laboratory information systems.

To continue the work begun in their collaborative projects, the fellows plan to implement standardised cattle weight estimation into national treatment guidelines to reduce the risk of AMR.

They also plan to train more stakeholders in using the costing tool and to review current budgeting tools used across programmes under the health ministries. Routine genomic analyses for outbreak investigations were also considered.

Fellows – Nepal: Reinforcing One Health

Sreska Shrestha and Samjhana Kumari Kafle, on behalf of the cohort



Usha Tandukar
Ministry of Health and Population



Sita Rijal
Central Veterinary Laboratory



Santosh Paudel
Bir Hospital



Naresh Prasad
Department of Livestock Services



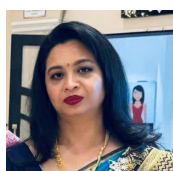
Ratnaa Shakya
Department of Food Technology and Quality Control



Madan Kumar Upadhyaya
Ministry of Health and Population



Dipa Kumari Chaudhary
Department of Environment



Shiwani Khadgi
Department of Drug Administration



Samjhana Kumari Kafle
Ministry of Agriculture



Sreska Shrestha
National Public Health Laboratory

The fellowships in Nepal focused on a variety of areas, such as analysis of AMU/C data in hospitals, AMR surveillance in poultry and milk, and AMR surveillance in wastewater.

Key outputs across the fellowships included developing a Monitoring and Evaluation

Framework for the Nepal NAP on AMR (2024–2028). This framework will serve as a guiding document for the effective implementation of the AMR NAP activities.

The fellows were able to improve capacity and technical skills for AMR surveillance in all One Health sectors in Nepal. They also strengthened the National AMC and AMU system for closer representation of AMU data use and facilitated trainings on the detection of priority bacterial pathogens in the environmental sector.

The fellows navigated a range of challenges, including budget adjustments, shipment delays, and balancing fellowship activities alongside existing work commitments. Despite these challenges, all fellows gained valuable learning outcomes. Through a combination of online and hands-on training sessions, they strengthened their technical skills and deepened their understanding of AMR.

Regular virtual meetings with mentors provided consistent guidance and problem-solving support while periodic webinars facilitated knowledge exchange and enhanced understanding of AMR surveillance and best practices. Importantly, the fellowship reinforced a strong One Health perspective, highlighting the critical role of coordinated, multi-sectoral surveillance in achieving effective and sustainable AMR control.

The Nepal cohort conducted a collaborative project titled: 'Methicillin-resistant *Staphylococcus aureus* (MRSA) across human, animal, food, and environmental sectors'. This project was in collaboration with the National Public Health Laboratory in Nepal, Bir Hospital, Central Veterinary Laboratory, Department of Food Technology and Quality Control, ministries, and Department of Environment – aiming to improve laboratory surveillance, AMR testing, and AMU analysis.

Key achievements of this project include:

- Generating data on MRSA prevalence and AMR patterns.
- Implementing standardised Antimicrobial Susceptibility Testing (AST) and *mecA* gene detection.
- Analysing cross sectoral AMR and AMC trends.
- Strengthening collaboration across the human, animal, food, and environmental sectors.

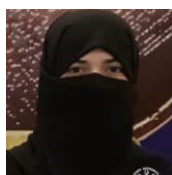
The Nepal cohort plan to continue their work in supporting the development of national AMR and One Health policies. They also plan to focus their efforts on improving AMR surveillance and stewardship programmes, strengthening laboratory and workforce capacity and advocating for AMR mitigation and AMS activities in healthcare settings.



Fellow performing bacterial culture and AST

Fellows – Pakistan: AMR policy advocacy

Aqsa Hashmi and Muhammad Salman, on behalf of the cohort



Aqsa Hashmi
Drug Regulatory
Authority of Pakistan



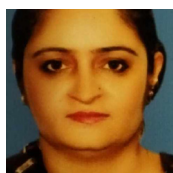
**Muhammad
Abubakar**
National Veterinary
Laboratory



Midrar Ullah
Animal Health
Site Laboratory



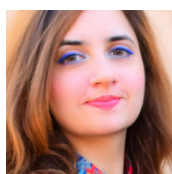
Hamid Irshad
Office of the
Animal Husbandry
Commissioner (AHC),
Ministry of National
Food Security and
Research



Shumaila Manzoor
National Veterinary
Laboratory



Akram Aziz
Pakistan Council
of Research in Water
Resources



Saadia Ambreen
National Institute of
Health (NIH), Ministry
of National Health
Services, Regulations
and Coordination



Shafiq Napar
National Institute of
Health (NIH), Ministry
of National Health
Services, Regulations
and Coordination



Usman Ayaz
Office of the
Animal Husbandry
Commissioner, Ministry
of National Food
Security and Research



Muhammad Salman
National Institute of Health (NIH),
Ministry of National Health Services,
Regulations and Coordination

The Pakistan fellowships focused on AMC strengthening across the human and animal health sectors, with the focus on integrating systems; developing surveillance strategies and plans; building the capacity of the beneficiary organisations; and raising awareness in communities. Other focus areas include the strengthening of national AMR surveillance systems, increasing laboratory diagnostic capabilities and contributing to the environmental AMR surveillance strategies in Pakistan.

The work carried out by the fellows in Pakistan resulted in many achievements. The policy fellows led national AMR burden and economic analyses to inform policy, contributing to the NAP 2.0 and the National AMR Response Plan. The professional fellows played a critical role in strengthening One Health collaboration, contributing to national AMR environmental strategies and enhancing community-level awareness.

Despite their notable achievements the cohort did face some challenges. Muhammad highlighted how AMR surveillance and analysis are hindered by fragmented provincial systems, limited clinical, economic, and environmental data, and weak diagnostics leading to high empirical antibiotic use. Improved funding and coordination are critical for an effective AMR response.



Pakistan fellows working in the laboratory

The fellows' collaborative project focused on the analysis of AMU and AMC data across the One Health sectors. They partnered with provincial health departments and GLASS sentinel sites to compile AMR surveillance data – collaborating with global partners (World Health Organisation, the Fleming Fund, Food and Agriculture Organisation) – to align AMR research with global strategies and integrate One Health surveillance. The cohort also engaged multidisciplinary teams (epidemiology, health economics, microbiology) to

integrate health and economic analyses and were instrumental in integrating One Health into the NAP 2.0, emphasising the need for cross-sectoral collaboration in AMR surveillance. Another key achievement was the production of a policy brief on the identification of irrational antimicrobial combinations in veterinary drugs.

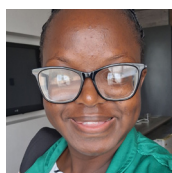
The fellows also harmonised AST panels, as a foundational step towards a credible, effective, and sustainable AMR passive surveillance system in Pakistan's animal health sector. This initiative will transform fragmented laboratory data into a nationally coherent evidence base, enabling informed AMS and protection of animal and public health.

The cohort emphasised addressing AMR requires integrated health, economic, and surveillance data; strengthened AMS; high-quality laboratory systems and a One Health approach encompassing human, animal, aquaculture, and environmental sectors. Effective responses depend on strong partnerships, aligned national and international policies, economic evidence to mobilise funding, and the translation of surveillance data into actionable national AMR strategies.

The Pakistan cohort plans to continue advocating for stronger AMR policies and to use health burden and economic cost data to inform national AMR strategies and secure funding. They also plan to increase public awareness and develop stewardship programmes.

Fellows – Malawi: Global perspectives

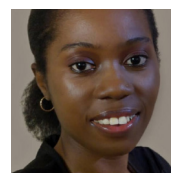
Tawina Koleta Kenthani and Lecollins Mthilakuwiili, on behalf of the cohort



Tawina Tenthani
Kamuzu Central
Hospital



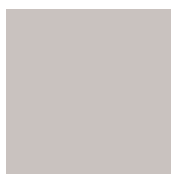
**Lecollins
Mthilakuwiili**
Central Veterinary
Laboratory



Upile Kachepa
Central Veterinary
Laboratory



Praise Chilanga
Central Veterinary
Laboratory



Mark Mwalabu
Public Health Institute
of Malawi



Dzinanani Maziya
National Microbiology
Reference Laboratory

The objectives of the Malawi fellowships were to enhance knowledge of AMR and its economic and social impacts; improve the generation, use, and interpretation of AMR and AMU data; disseminate relevant AMR knowledge; and strengthen One Health collaboration.

A key element of the fellowship programme that helped fellows to achieve their objectives was a two-week visit to Edinburgh. The numerous lectures, visits, and closing Symposium exposed them to diverse global perspectives on their objectives and to the broader contextual impacts of AMR.

The fellows attended the Joint Programming Initiative on Antimicrobial Resistance final conference in Vienna, hosted by the Swedish Research Council. This conference aimed to present research results and facilitated the translation of research into actionable strategies, policies and innovative solutions. This opportunity enabled fellows to network with international researchers and other Fleming Fund fellows, and to gain a broader perspective on AMR beyond the science, recognising the role of behaviour, culture, and social systems in shaping resistance.

The Malawi fellows' collaborative project examined the prevalence of resistant Salmonella, Enterococcus, and E. coli species in poultry manure and their transmission along the vegetable value chain in selected districts of Malawi, using a One Health approach. They aimed to identify resistant isolates of Salmonella, E. coli and Enterococcus in poultry manure, short water wells, vegetables and salads.

The project also investigated what infection prevention measures farmers employed. Isolates of E. coli and Enterococcus species were identified, mainly from poultry manure samples, and resistance was found among these isolates. The fellows found that most of the vegetable farmers they sampled did not use infection-prevention measures when handling manure and vegetables. In following vegetables grown with poultry manure from farms they had tested, salad samples were taken from one restaurant, from which they identified E. coli and Enterococcus species from the poultry manure.

The cohort expressed their interest in expanding the research from their pilot study.



Fellows and research assistants at a farm visit for their collaborative project

Fellows – Zambia: AMR training and tools

Tibale Ngwata and Kwila Mwansa, on behalf of the cohort



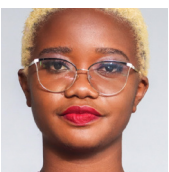
Dr Kaunda Yamba
Ministry of Health



Dr Best Chisha Simutowe
Ndola Teaching Hospital



Kwila Kotati Mwansa
Livingstone University
Teaching Hospital



Tibale Ngwata
Zambia Environmental
Management Agency

The Zambia fellowships aimed to enhance technical skills development, strengthen the One Health approach, improve data use practices, and support policy development.

The fellows participated in high-level international training on AMR, attended key conferences such as the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) and visited other countries in the region to share knowledge on AMR/U/C.



The Zambia cohort contributed to the development of the Standard Treatment Guidelines.

They also contributed to the development of antibiotic guidelines for their beneficiary institutions and to several national policy documents, including the Essential Veterinary Medicines List, Standard Treatment Guidelines, Zambia Essential Medicines List, and the Antimicrobial Stewardship Module for Veterinarians.

The collaborative project in Malawi assessed the current AMR and AMU surveillance systems for the integration of the human, animal, and environmental sectors and was designed in two phases. It began with identifying strengths and weaknesses in the existing One Health system and developing AMR/AMU data collection tools and SOPs across the One Health platform. This was followed by a programme to pilot the

AMR collection tools; however, they have not yet been launched or published. The protocol was submitted for technical review, and they are still awaiting feedback.

While the fellows achieved significant outcomes, they also encountered challenges, including constrained timelines and competing priorities. As a result, some policy and technical documents initiated under the programme could not be fully completed.

Despite the challenges, all fellows completed training on One Health and Gender, with additional training covering science communication for non technical audiences, public health messaging, quantitative and qualitative research methods and AMR data analysis using R.

Closing Remarks: Turning the tide

Day Two: Closing Remarks



Holly Rhyner-Jones, UK Department of Health and Social Care

Holly Rhyner-Jones, Head of The Fleming Fund at the UK Department of Health and Social Care, closed the second day of the Fellowship Symposium. Holly thanked fellows, speakers, mentors, and partners for their dedication to the Fleming Fund Fellowship Scheme and highlighted the Symposium as a valuable

platform for collaboration, learning, and celebrating achievements.

Holly also thanked everyone for their ongoing commitment and dedication to the Fellowship Scheme in sometimes difficult circumstances, commenting that it has been really inspiring and that we should feel proud. She went on to say that the UK Department of Health and Social Care has “invested in the Fellowship Scheme because we believe that you are the ones who will make a real difference in turning the tide on AMR”.

Holly also commended fellows for their lasting impact on AMR surveillance, policy, and practice, and emphasised the continued role of the Fellowship Alumni Network in sustaining this work beyond the closure of the Fleming Fund.

Day Three Programme

Welcome	
Host Institution – Erasmus MC and Utrecht University Indonesia	Prof Juliëtte A. Severin and Prof Jaap Wagenaar
Phase 2 Cohort – Indonesia	Dr Ulyy Indah Apriliana , Disease Investigation Center, Wates Dr Verawati Sulaiman , Sulianti Saroso Infectious Disease Hospital (Rumah Sakit Penyakit Infeksi) Prof Sulianti Saroso
Mott MacDonald Tutor Group - Kenya	Nehemiah Birgen , Veterinary Medicines Directorate
Host Institution – London School of Hygiene & Tropical Medicine Zimbabwe, Ghana	Prof Clare Chandler
Phase 2 Cohort – Zimbabwe	Tinashe Hodobo , Ministry of Lands, Agriculture, Fisheries, Water and Rural Development, Directorate of Veterinary Services
Phase 2 Cohort – Ghana	Benjamin Kissi Sasu , Ministry of Food and Agriculture – Veterinary Services Department (VSD), National Food Safety Laboratory

Break	
Host Institution – University of Liverpool Nigeria, Sierra Leone	Dr Stephen Aston
Phase 2 Cohort – Nigeria	Rita Okea , Federal Ministry of Environment (Pollution Control and Environmental Health) Tarhemba Philip Terwanger , Veterinary Medicine and Allied Products Directorate – National Agency for Food and Drug Administration and Control
Phase 2 Cohort – Sierra Leone	Ronita Luke , Ola During Children’s Hospital, Special Care Baby Unit – Ministry of Health Joseph Sam Kanu , National Public Health Agency - Ministry of Health
Host Institution – St George’s, University of London Eswatini	Prof Catrin Moore
Phase 2 Cohort – Eswatini	Sifundo Zwane , Ministry of Health Nelisiwe Khumalo , Department of Veterinary Services
Symposium Closing Remarks	Laura Hucks , Fleming Fund Director, Mott MacDonald

Prof Juliëtte Severin provided an overview of Erasmus MC, based in Rotterdam, the Netherlands, as the Host Institution for Indonesia.

This Host Institution is a consortium of four organisations covering the One Health spectrum. They include Erasmus MC, Utrecht University, Radboudumc and the National Institute for Public Health and the Environment.

Prof Severin reflected that a key takeaway from the fellowship journey was the opportunity to strengthen their One Health focus, particularly by elevating the often-overlooked environmental sector. She also emphasised that a multidisciplinary approach is essential in tackling AMR.



Mentors from Erasmus MC and fellows in Jakarta at the launch of phase 2.

Fellows – Indonesia: Enhancing AMR skills

Uly Indah Apriliana and Verawati Sulaiman, on behalf of the cohort



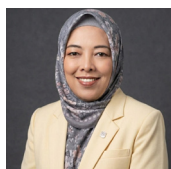
Verawati Sulaiman
Sulianti Saroso
Infectious Disease
Hospital



Delly Chipta Lestari
Cipto Mangunkusumo



Sharifah Shakinah
Cipto Mangunkusumo



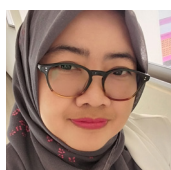
Megawati Stanza Gunawan,
Dr Saiful Anwar,
Malang



Alriando Hidayat
National Veterinary
Product Assay
Laboratory, Bogor



Uly Indah Apriliana
Disease Investigation
Center (DIC), Wates



Maria Fatima Palupi National
Veterinary Product
Assay Laboratory
(BPMSOH), Bogor



Indra Suwarin Kurniawati
Balai Besar
Laboratorium
Kesehatan, Surabaya

The fellowships aimed to provide fellows with an opportunity to enhance their skills in AMR surveillance, learn from exceptional mentors at an internationally renowned Host Institution, and access a wide range of resources. It also enabled valuable collaboration and networking opportunities through the Host Institution and with fellows from other institutions.

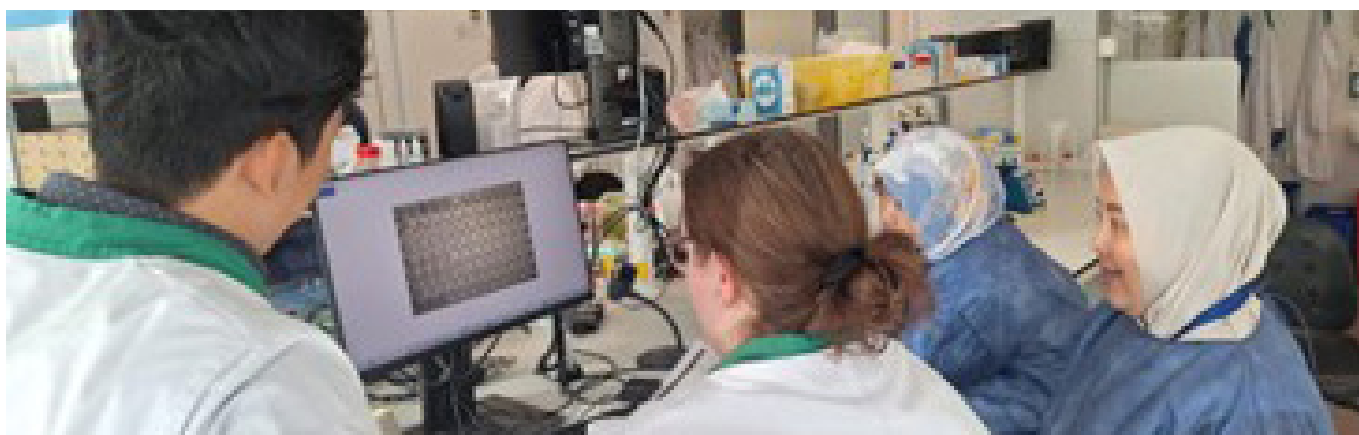
A major achievement of the Indonesia cohort was its contribution to developing the National Antibiogram Guidelines, released in 2025. Using these guidelines, each hospital in Indonesia can develop its own antibiogram.

The fellows also benefited from attending several international training and events, including the Advanced Antimicrobial Susceptibility Testing course and veterinary lectures and practical sessions on AMR testing. They also visited the De Tolakker educational research farm to observe an example of AMR control at the farm level, as well as the National Institute for Public Health and the Environment, both in the Netherlands. Furthermore, the fellows participated in the '6th AMR Course: A One Health Challenge' event hosted by Fondation Merieux in France.

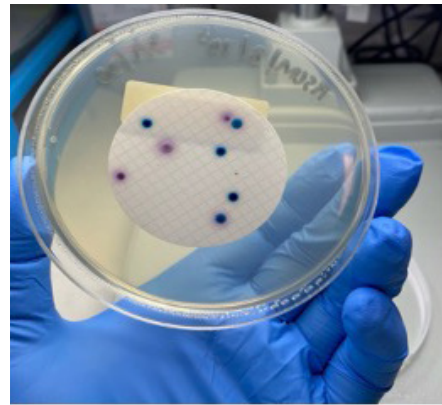
Some challenges faced by the fellows during their fellowships include balancing fellowship responsibilities alongside their routine work commitments and collaborating on joint projects with fellows from diverse professional backgrounds.

The Indonesian cohort conducted a collaborative project titled 'Extended Tricycle Project Indonesia for Extended-Spectrum Beta-Lactamase Positive *Klebsiella pneumoniae* and *Escherichia coli* (E-Trike)'. This project determined the prevalence of ESBL-producing *E. coli* and ESBL-producing *K. pneumoniae* in the human (hospital and community) sectors and in animal and environmental settings.

The fellows highlighted that one of their key takeaways was that AMR surveillance needs to be conducted consistently and continuously, and that it requires a collaborative approach across all sectors. The fellows plan to remain committed to AMR surveillance at both the health facility and national levels. They also plan to continue their collaborative project and maintain their networks across the AMR sectors.



Fellows receiving training on AST methods at Erasmus MC, Rotterdam



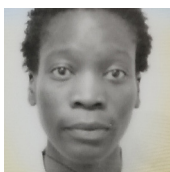
Indonesian collaborative project activity

Fellows – Kenya: Long-term sustainability

Nehemiah Birgen, on behalf of the cohort



Emmanuel Tanui
Ministry of Health



Eve Koile
Jaramogi
Oginga Odinga Teaching
and Referral Hospital



Cidee Khaseke
National Veterinary Laboratory,
Nakuru



Nehemiah Birgen
Veterinary Medicines Directorate

The Kenya fellowships focused on strengthening AMR and AMU surveillance capacity through structured training, applied learning, and enhanced data analysis and epidemiology skills to support evidence generation and policy decision-making. Another focus area was to promote One Health collaboration across human, animal, and environmental sectors while strengthening Kenya’s AMR leadership, governance, and AMS activities in hospitals and supporting Kenya’s NAP.

The fellows gained a deeper understanding of AMR surveillance systems and strengthened their data analysis and interpretation skills. This included developing an AMR data analysis and visualisation framework, which strengthened the use of national AMR data for policy decision-making. In healthcare facilities and the animal health sector, they strengthened AMS activities and attended many conferences, including ESCMID.

The collaborative project conducted by the Kenya cohort focused on the prevalence and resistance patterns of *Escherichia coli* in caged tilapia farming at Dunga beach, Lake Victoria, Kenya. This project emphasised the need for One Health collaboration



Kenyan fellows from the AMS team attended Fisheries Day at Lake Victoria

across human and animal health and policy institutions. One key output of this project is the strengthened cross-sector relationships formed, which produce a foundation for future scale-up. While completing a successful project, the fellows highlighted how implementation was challenging due to coordination demands, competing priorities and fragmented AMR data systems.

The work undertaken by the Kenya fellows represents a significant step toward long-term sustainability. The fellowships strengthened both professional and institutional capacity in AMR/AMU surveillance and stewardship, enhancing data analysis, evidence generation, and the application of learning in routine work. Through supporting Kenya's AMR NAP priorities, key learning outcomes were achieved despite implementation challenges, establishing a strong foundation for future AMR efforts.

London School of Hygiene & Tropical Medicine

Prof Clare Chandler, on behalf of the Host Institution

Prof Clare Chandler spoke on behalf of the London School of Hygiene & Tropical Medicine (LSHTM), which served as the lead Host Institution for the Zimbabwe and Ghana cohorts.

The Host Institution is a consortium of four organisations, including LSHTM, the Royal Veterinary College (RVC), the Aurum Institute in Ghana, and the Biomedical Research and Training Institute in Zimbabwe. Each fellow had two mentors, one from either LSHTM or RVC, and one in-country expert.

Prof Chandler congratulated the fellows on their work, emphasising their collaborative approach across their training, One Health workshops and conferences. They also delivered AMR conferences and supported Communities of Practice that contribute to AMR policy development, One Health collaboration, AMR advocacy and networking.

Recommendations from LSHTM include continuing co-mentorship with experts in-country. Prof Chandler also encouraged fellows to reach out to contacts they made during their visits to London and other institutions to help them continue their professional journeys.



LSHTM Fellowship team

Fellows – Zimbabwe: AMS interventions

Canaan Tinashe Hodobo, on behalf of the cohort



Tatenda Ngorima
National Microbiology
Reference Laboratory



Nancy Nyaradzwo Seve
Medicines Control
Authority of
Zimbabwe



Gerald Nyamutamba
Ministry of Health and
Child Care: Directorate
of Pharmacy Services



Siyangapi Chimuti
Government Analyst
Laboratory



Runyararo Ngara
Department of
Veterinary Services



Tsamwi Naume Gurira
Directorate of
Veterinary Services



Tracey Kudzanai Mubambi
Ministry of
Environment,
Climate and Wildlife



Edwin Maringe
Environment
Management Agency



Canaan Tinashe Hodobo
National Microbiology
Reference Laboratory

Canaan Tinashe Hodobo spoke on behalf of the Zimbabwe cohort. The Zimbabwe fellowships aimed to generate Zimbabwe-specific evidence on AMU, AMC, AMR and foodborne pathogens across human, animal, food, environmental, and laboratory systems using a One Health approach.

Another of the cohort's focus was to align national surveillance and stewardship efforts with WHO GLASS, AWaRe, and¹ ISO 15189 standards while identifying practical, field-based drivers of AMR and opportunities for behaviour change in farming communities. The cohort also studied strengthening laboratory, environmental, veterinary, food safety and medicines regulatory systems for AMR surveillance and response.

The cohort demonstrated strong proactivity throughout their fellowships and achieved significant progress. Key achievements included identifying foodborne pathogens and gaps in food safety surveillance. This included demonstrating MDR *Klebsiella pneumoniae* transmission among milk, water, the environment, and dairy farm workers. They conducted PPS to provide context-specific evidence on antimicrobial prescribing patterns and gaps, thereby enabling targeted stewardship interventions.

Furthermore, they produced Zimbabwe's first GLASS-aligned national AMC dataset in collaboration with the Medicines Control Authority of Zimbabwe (MCAZ).

The fellows highlighted how inconsistencies in laboratory SOPs affect the quality of AMR surveillance and the need for national standardisation. They also demonstrated that Farmer Field Schools (FFS) are a practical stewardship tool for reducing unnecessary AMU in broiler farmers.

Tinashe also highlighted some of the challenges faced by the fellows in Zimbabwe. These included limited and fragmented AMR and AMU/AMC data, weak cross-sector coordination, inconsistent laboratory practices, and limited AMU surveillance platforms in animal health. Inappropriate use and informal access to antibiotics, poor recordkeeping and disposal practices, environmental contamination, and low public and farmer awareness were also highlighted as key challenges.

Tinashe emphasised that AMR in Zimbabwe is a cross-sector One Health challenge driven by widespread AMU, insufficient diagnostics and weak stewardship practices. The cohort plans to use the evidence and clinical data to integrate existing national platforms (FFS, EMA surveillance, MCAZ AMC data, laboratory network, and the One Health Secretariat) into a coordinated AMS and AMR surveillance approach. They also plan to target farming practices, environmental monitoring, laboratory standardisation, AMU and cross-sector collaboration to coordinate a nationwide One Health response.

¹ ISO 15189 - international standard specifying requirements for quality and competence in medical laboratories.

Fellows – Ghana: Better health outcomes

Benjamin Kissi Sasu, on behalf of the cohort.



Isabella E. Ashley-Agbedor

Central Laboratory Services, Korle-Bu Teaching Hospital



Dr Abena Kaare Aduful

Princess Marie Louise Children's Hospital



Dr Anthony Kwaw

Tamale Teaching Hospital



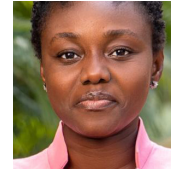
Dr Jeffery Elorm Akortia Agbemeetsi

MoFA, VSD, Pong-Tamale Central Veterinary Laboratory.



Dr Benjamin Kissi Sasu

MoFA, VSD, National Food Safety Laboratory



Dr Ewurabena Ntiamoah Bediako

MoFAD, Fisheries Commission



Regina Ama Banu

Council for Scientific and Industrial Research, Water Research Institute



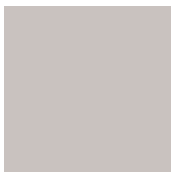
Glover Asiedu Appiah

Food and Drugs Authority



Dr Samuel Pie

Ministry of Health, Tamale Teaching Hospital



Abass Suleyman

National Health Insurance Authority

The Ghana cohort highlighted four fellows, Isabella E. Ashley-Agbedor, Anthony Kwaw, Dr Jeffery Elorm Akortia Agbemeetsi, and Dr Benjamin Kissi Sasu, spotlighting their individual achievements, key learning, and future aspirations:

Isabella E. Ashley-Agbedor

- Trained laboratory staff on AMR and best practices in performing AST.
- Developed an antibiogram for Korle Bu Teaching Hospital.
- Conducted research on Gram-negative wound isolates and their genomic characterisation.

Dr Anthony Kwaw

- Produced a literature review on the barriers to establishing AMS programmes in hospitals.
- Coordinated AMS activities in Tamale Teaching Hospital, including a PPS.
- Participated in a nationwide price, availability and affordability survey on antimicrobials in drug retail outlets for human and animal health settings.

Dr Jeffery Elorm Akortia Agbemeetsi

- Produced the first formal evaluation of Ghana's animal health AMR surveillance system and shared actionable recommendations.
- Supported selected poultry farmers in implementing biosecurity standards and leveraging farm data to drive improvements.
- Optimised passive AMR sample inflow and established active surveillance teams across the five northern regions of Ghana.
- Equipped laboratory technicians with bacterial identification and AST skills to facilitate their integration into AMR surveillance.
- Advocated for farm biosecurity and the use of probiotics over routine prophylactic medication.

Dr Benjamin Kissi Sasu

- Developed training materials and delivered training sessions on AMR and food safety.
- Strengthened the collection and flow of AMR data from veterinary laboratories and field sites.
- Supported the sharing of AMR information and data across the One Health sectors.



Fleming Fellows at the 2025 Ghana AMR Conference

Common challenges included balancing fellowship responsibilities with routine work, navigating budget constraints, and managing high workloads. Despite these obstacles, they achieved significant milestones. The cohort intends to sustain their efforts through continued capacity building across sectors, training laboratory staff, and advocating for antibiotic residue testing, among other initiatives.

The Ghana cohort organised the 2025 Ghana AMR Conference, inviting researchers from across the One Health sectors to share their work. The aim was to increase sensitisation to AMR to improve health outcomes in Ghana. Impactful AMU/AMC/AMR studies across all the sectors were disseminated, the fellows presented their individual fellowship projects, and breakout sessions were conducted to discuss the challenges and solutions for each sector.



Sierra Leone cohort with the University of Liverpool team

Host Institution – University of Liverpool, on behalf of the Host Institution

Dr Stephen Aston

Stephen Aston introduced the University of Liverpool, which was the Host Institution for Sierra Leone and Nigeria. The University of Liverpool have a long-

standing track record in global health and infectious disease research, particularly in AMR, diagnostics, clinical trials and vaccinology. They are also world-leading in veterinary and agricultural research with a strong One Health focus.

Key achievements highlighted by the University of Liverpool include strengthened systems for AMR/U/C data generation and analysis, expanded professional networks, raised awareness of AMR across multiple

communities and a strengthened One Health approach. Recommendations from the University of Liverpool include maintaining the networks built by fellows,

recognising the roles they play in shaping AMR responses, and leveraging the Fleming Fund's recognition to access new opportunities to continue professional development.



Nigeria cohort with the University of Liverpool team

Fellows – Nigeria: Appropriate AMU

Rita Okea and Phillip Terhemba, on behalf of the cohort



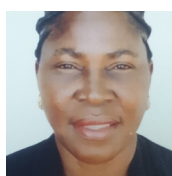
Dr Tagwi Ezra James
Department of Veterinary and Pest Control Services, Epidemiology Division



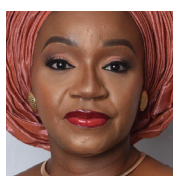
Dr Salome Bawa
Veterinary Public Health Division



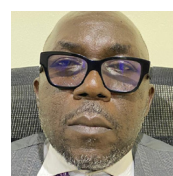
Dr Adetayo Mokuolu
Federal Ministry of Agriculture and Food Security, Federal Department of Fisheries and Aquaculture



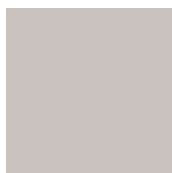
Maureen Kokoiwen
Department of Veterinary and Pest Control Services, Epidemiology Division



Dr Tochi Okwor
Nigeria Centre for Disease Control and Prevention



James Avong
Nigeria Centre for Disease Control, National Reference Laboratory Gaduwa



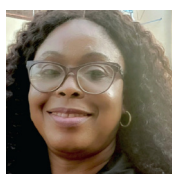
Dr Ridwan Yahaya
Nigeria Centre for Disease Control and Prevention, AMS Programme



Dr Ilupeju Omotayo
Pharmaceutical Council of Nigeria, Pharmacy Practice Department



Prof Aaron Aboderin
Obafemi Awolowo University Teaching Hospitals Complex



Rita Okea
Federal Ministry of Environment, Pollution Control and Environmental Health



Phillip Terhemba
Veterinary Medicine and Allied Products Directorate, National Agency for Food and Drug Administration and Control

Rita Okea and Phillip Terhemba's presentation highlighted Rita Okea's work as an Environmental AMR Fellow and showcased the Nigerian cohort's collaborative project.

Rita Okea – Environmental AMR Fellow

Rita's fellowship aimed to strengthen her personal and professional knowledge of AMR in the environment. This included building capacity among colleagues and environmental health professionals on AMR mitigation, fostering networking between Nigerian Environmental Health professionals and international partners, and supporting the integration of AMR-related data into the Integrated National Environmental Health Surveillance System.

Throughout her fellowship, Rita trained others in AMR surveillance and laboratory techniques and strengthened Environmental Health Officers' (EHOs') capacity to conduct environmental AMR surveillance. She also increased awareness of AMR among staff at the Federal Ministry of Environment and supported INEHSS in real-time AMR monitoring. Furthermore, Rita's work was useful in driving the use of Nigeria-generated AMR data for policy making.

Through her fellowship, Rita achieved several notable milestones while also encountering key challenges. She highlighted limited time, insufficient funding, and constrained capacity in environmental health laboratories as the main obstacles.

With the knowledge gained from this fellowship, Rita plans to share her insights with other EHOs, make training more inclusive for people with disabilities, and utilise funding to influence regulatory frameworks and waste management policies to combat AMR.

The fellows' collaborative project on building AMR awareness among key stakeholders aimed to increase

and sustain awareness of AMR across the One Health sector by educating students and stakeholders on appropriate AMU, prevention measures, and AMS. It also seeks to strengthen One Health collaboration and national AMR mitigation efforts by promoting responsible AMU, enhancing biosecurity and disease prevention, and empowering students to serve as AMR ambassadors in their communities.

As part of this project, they developed learning materials to use at awareness campaign programmes in secondary schools. During WAAW 2025, they piloted the engagement programme at three secondary schools. As a result, 1,442 secondary school students and 43 teachers across three schools in Abuja and Lagos were reached.

The cohort also hosted a two-day workshop in Lagos, bringing together experts from human and animal health, as well as other sectors, including environmental and regulatory agencies, academia, the private sector, and partner institutions. The workshop included presentations from fellows and other stakeholders, including NAFDAC, the World Organisation for Animal Health, and the Danish Veterinary and Food Administration.

As part of their stakeholder engagement activities, the Nigeria cohort also visited poultry farms in Ibadan and delivered presentations on AMS and biosecurity in poultry production.

The Nigeria cohort implemented a wide range of activities to raise awareness of AMR, strengthen One Health collaboration, and develop valuable AMR learning resources. While they encountered challenges, including difficulties producing hard-copy materials and navigating complex administrative processes, the cohort plans to expand school-based AMR engagement, develop additional learning resources, and advocate for the integration of AMR into the school curriculum.



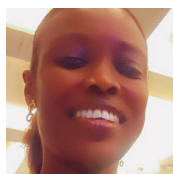
Nigeria fellows visiting a secondary school in Abuja, conducting awareness and engagement programmes during WAAW.

Fellows – Sierra Leone: Strategic AMR roadmap

Ronita Luke, Joseph Sam Kanu and Kadijatu Nabie Kamara, on behalf of the cohort



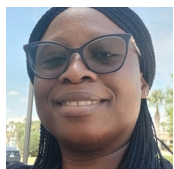
Joseph Sam Kanu
National Public Health Agency, Ministry of Health



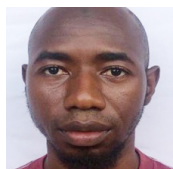
Kadijatu Nabie Kamara
National Disease Surveillance Program, Ministry of Health



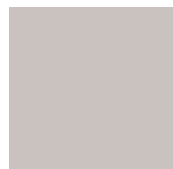
Ronita Luke
Ola During Children Hospital, Special Care Baby Unit, Ministry of Health



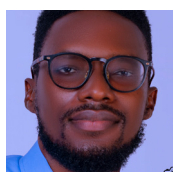
Jennet Buck
Directorate of Pharmaceutical Services, Ministry of Health



Sorie I. O. Bangura
Connaught Teaching Hospital, Ministry of Health



Saidu Bamayange
Ministry of Agriculture, Forestry and Food Security



Julius Sombie
Central Veterinary Laboratory, Ministry of Agriculture, and Food Security



Joseph M. Samai
Epidemiology Unit, Livestock and Veterinary Services Division, Ministry of Agriculture and Food Security

The Sierra Leone Cohort spotlighted Ronita Luke’s work and their collaborative project for the presentation.

Ronita Luke – AMS Practitioner Fellow

Ronita’s fellowship aimed to develop personal knowledge and skills in AMR, promote AMR surveillance at Ola During Children’s Hospital, and acquire skills to support sustainable AMR surveillance beyond the Fleming Fund Fellowship.

Key achievements included gaining robust knowledge on AMR through attending in-person courses, online webinars, and workshops. She also worked with AMR data to improve clinical practice and provide training for clinicians. Along with other fellows, Ronita participated

in networking opportunities at international meetings and conferences, including ESCMID 2025 and the Paediatric Infection Prevention Improvement Network Education & Networking Day 2025. While at the Society for Healthcare Epidemiology of America Spring 2025 Conference in Florida, she was awarded International Ambassador.

Ronita’s key takeaway from her fellowship was the realisation that AMR is a pressing and growing threat – a “ticking time bomb” difficult to combat because it is often intangible and not immediately measurable. Building on this insight, Ronita plans to advance AMR surveillance in paediatrics, continue knowledge sharing, promote AMS activities, and pursue further AMS/AMR-related research.



Sierra Leone fellows and other stakeholders at the AMR strategy development workshop, December 2025

The cohort's collaborative project to develop a strategic roadmap to fight AMR in Sierra Leone aimed to demonstrate how different expertise within the Fellowship Scheme can inform an AMR strategy. All the fellows were involved in developing the AMR strategy, using a One Health approach, with a final validation workshop to finalise it. The strategy has five key objectives:

- Strengthen AMR governance, policy and multisectoral coordination.
- Improve awareness and understanding of AMR.
- Strengthen laboratories and surveillance.
- Reduce infection incidence through infection prevention and control (IPC), water, sanitation and hygiene (WASH), biosecurity and waste management.

- Optimise AMU in human, animal and plant health.

The cohort encountered several challenges, including a lack of multisectoral coordination, fragmented national AMR and AMU data, competing priorities, and the need to balance international standards with national contexts. Nevertheless, building on their progress to date, the Sierra Leone cohort plans to finalise and implement a costed AMR NAP and strengthen One Health coordination structures at national and district levels. They also plan to expand integrated AMR and AMU surveillance across all sectors, institutionalise laboratory quality assurance and data use for decision-making, and secure sustainable domestic and partner financing for AMR activities.

Host Institution – City St George's, University of London

Prof Catrin Moore

Prof Catrin Moore presented on behalf of City St George's, the Host Institution for Eswatini. During the fellowships, City St George's collaborated with the Royal Veterinary College to provide human, animal and One Health expertise and support to fellows.

The consortium provided key expertise in infection and immunity, working internationally, and in clinical practice and research.

Prof Moore emphasised that the face-to-face engagement and collaborative sessions were key components of the programme, fostering meaningful learning and exchange. In addition, all fellows attended ESCMID 2025, which provided a valuable opportunity for both learning and professional networking.



The Eswatini cohort with the City St. George's team

Fellows – Eswatini: Advance AMR response

Sifundo Patience Zwane and Nelisiwe Euphene Khumalo, on behalf of the cohort



Andiswa Tenkhosi Dlamini
Mababane Hospital



Bongive Elizabeth Ngozo
Food and Safety Laboratory



Makhosazana Shongwe (Khosi)
Department of Water Affairs



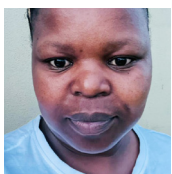
Precious Mumbi Chishimba
Ministry of Health, Pharmacy Division



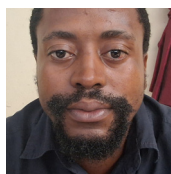
Nelisiwe Euphene Khumalo
Department of Veterinary Services



Melusi Welcome Mthembu
Good Shepard Hospital



Nomcebo Fortunate Zondo
Hlathikhulu Government Hospital



Bavukile Siphosethu Kunene
Department of Veterinary and Laboratory Science



Sifundo Patience Zwane
Ministry of Health

The Eswatini fellowships aimed to build AMR expertise and capacity to generate, interpret, and apply AMR data effectively for practice, policy, and decision-making. The cohort also focused on strengthening Eswatini's AMR systems and workforce, while enhancing AMR governance and multisectoral collaboration through a One Health approach to advance national AMR responses.

Key challenges highlighted by the cohort included balancing work and fellowships and implementing change in resource-limited settings. Despite these challenges, the cohort strengthened their knowledge and practical skills and attended many professional networking and career development events, including ESCMID.

Some of the key achievements highlighted include developing evidence-based policy documents and collaborating across One Health sectors. The cohort has also been able to develop their data analysis skills, strengthen practical skills (nanopore WGS) and contribute to the integration of AMR data for evidence-based policy development. The cohort plans to continue their work through publishing policy briefs, supporting NAP implementation, designing AMR stewardship programmes for hospitals, supporting national training, and translating country AMR data into evidence for policymaking.



Eswatini cohort visit to the Royal Veterinary College

Final Remarks



Laura Hucks, Programme Director,
Mott MacDonald

Laura Hucks reflected that the Symposium was an energising and inspiring three days, thanking all those who prepared and delivered presentations. She emphasised that although the Fellowships Scheme represents only around 15% of the Fleming Fund's grants budget, its impact is disproportionately large. She highlighted the strong culture of collaboration across regions and disciplines, describing the

programme as a clear example of One Health in action, with a strong focus on developing lasting professional relationships and a valuable Community of Practice.

She praised fellows for achieving measurable country-level results, including generating new data and insights, supporting governance and leadership, contributing to national policies and action plans, strengthening laboratories and hospitals, and engaging communities and schools. Laura also highlighted the importance of sharing country-specific knowledge internationally, particularly at a time of reduced global collaboration. She expressed gratitude to the fellows, Host Institutions, programme staff, and the UK Department of Health and Social Care for their support. She encouraged participants to continue engaging as the programme moves forward under the Fleming Initiative.

