

Leading the Charge Against Antimicrobial Resistance in Pakistan

Antimicrobial resistance (AMR) is a critical global health challenge, disproportionately impacting low-income countries. The [Fleming Fund](#), a UK-funded program, is at the forefront of tackling this issue across Africa and Asia. Managed by the U.K. Department of Health and Social Care and administered through Mott MacDonald, the Fleming Fund supports governments with country and regional grants and fellowship schemes to implement AMR strategies. In Pakistan, the Fleming Fund Country Grant, initiated in 2019, is focused on addressing critical gaps in AMR surveillance, enhancing the country's capacity to diagnose and monitor this pervasive threat.

Phase 1: Building Foundations for AMR Surveillance

The Fleming Fund Country Grant Pakistan (FFCGP), led by DAI and consortium partners Liverpool School of Tropical Medicine, Health Security Partners, Aga Khan University Hospital, and Indus Hospital & Health Network, completed Phase 1 of the program. This phase was pivotal in strengthening Pakistan's laboratory capacity for AMR surveillance, following a "One Health" approach. This multisectoral strategy integrates efforts across human health, animal health, and environmental sectors to tackle complex health challenges holistically. Key achievements of Phase 1 included:

- **Lab Renovation and Equipment Support:**
 - Assessed 22 animal and human health laboratories across all provinces, including Azad Jammu and Kashmir and Gilgit-Baltistan, and infrastructure refurbishment of 9 animal and 13 human health laboratories. State-of-the-art laboratory equipment was provided based on individual lab needs and essential lab consumables and supplies.
- **Strategic Partnerships:**
 - Instigated Memorandums of Understanding between the Ministries of Health and National Food Security & Research and provincial governments, ensuring collaboration.
- **Operational Planning:**
 - Developed a costed operational plan for Pakistan's National AMR Action Plan, enhancing strategic direction and resource allocation.
- **Multisectoral Coordination:**
 - Established the National AMR Multisectoral Secretariat at the National Institute of Health (NIH) and Provincial AMR Multisectoral Coordination Units in Khyber Pakhtunkhwa and Sindh provinces. Support was provided to strengthen the coordination role of the Animal Husbandry Commission (AHC) and to establish an AMR Coordination Unit.
 - Facilitated the meetings of the 'National Antimicrobial Resistance Steering Committee', the most senior oversight body leading the AMR containment efforts in the country. The Committee, as the One Health focal point at the national level, also oversees the functioning of the NIH.
 - Supported NIH quarterly AMR newsletters highlighting AMR-related achievements, challenges, and recommendations, which are distributed to national stakeholders, international donors, and partners.
 - Extended technical support to the national Drug Regulatory Authority of Pakistan for the publication of its first newsletter on antimicrobial consumption.

- **Capacity Building:**
 - Delivered training in AMR, biosafety, biosecurity, data analysis for whole genome sequencing, and laboratory quality management systems to staff from national and provincial laboratories.
 - Assisted the NIH in revising the ‘National AMR Surveillance Strategy for Human Health’ and supported disseminating the ‘National Surveillance Strategy for Antimicrobial Resistance in the Food Animal Environment’ and the ‘National Surveillance Strategy for AMR in Aquaculture’ to relevant federal and provincial stakeholders.
 - Provided technical assistance in conducting three Point Prevalence Surveys (PPS) in Pakistan for the first time for AMU data. The national PPS covered 14 tertiary care hospitals where the team looked at 3,587 eligible cases in 2020. The provincial PPS in Khyber Pakhtunkhwa and Sindh covered six tertiary care hospitals, each in 2021. Additionally, as part of gathering data from the AH sector, the antimicrobial usage (AMU) study covered 12 poultry farms in Punjab and Khyber Pakhtunkhwa provinces.
 - Supported the launch of the FFCGP’s ‘Clinical Engagement Program’ in six public sector hospitals across Pakistan. The Program was selected as a winner of the global best practice on AMR Stewardship by the AMR Industry Alliance (AMRIA) in 2022. It was awarded a Prize by AMRIA for bringing AMR awareness to the forefront of clinical care.
- **International Recognition:**
 - The AMR Industry Alliance awarded the Clinical Engagement Program the 2022 Stewardship prize (CHF 10,000) as the best global health practice.

Phase 2: Expanding Impact and Ensuring Sustainability

Building on the successes of Phase 1, the UK Department of Health and Social Care approved DAI’s application to lead Phase 2 of the FFCGP from January 2024 to December 2025. This phase focuses on four intermediate outcomes:

1. **Quality Data Production:** Enhancing the production of high-quality AMR/AMU and burden of disease data.
2. **Data Analysis:** Conducting robust data analysis to derive actionable insights.
3. **Evidence-Based Decision Making:** Sharing quality data analyses with decision-makers to inform policy and strategy.
4. **Sustainable Investments:** Contributing to sustainable investments at both country and global levels to counter AMR.

Phase 2 emphasises a continued commitment to the One Health approach, integrating human and animal health sectors and fostering a collaborative AMR surveillance and management environment. As the lead grantee, DAI oversees the project’s technical, financial, and management aspects, ensuring effective implementation and sustainability. There is also a strategic shift to involve the private sector in AMR work and expand the scope to include the aquaculture and environmental sectors.

Achievements to Date

The Fleming Fund’s initiatives in Pakistan have already led to significant milestones:

- **National and Provincial Coordination:**
 - Establishing coordination units and a national multisectoral secretariat to promote collaboration and information sharing.

- **AMR Surveillance Strategy:**
Providing technical assistance to advance:
 - National AMR Surveillance Strategy for Healthy and Diseased Food Animals and Aquaculture.
 - Pakistan Veterinary Laboratory Policy and Guidelines.
 - Antimicrobials Use Prescription Guidelines.
 - First Ever Antibiotic Footprint analysis.
 - NIH AMR surveillance strategy revision.
- **Point Prevalence Surveys:**
 - Conducting surveys to identify antimicrobial use patterns across human and animal health sectors.
- **Antimicrobial Resistance Surveillance Pilot in Healthy Food Animals:**
 - Disseminating a policy brief on the report to raise stakeholders' awareness and highlight sustainable AMR surveillance.
- **Field Veterinarian and Dairy Farmer Training:**
 - Surveying 164 in-service field veterinarians and 443 dairy farmers to assess knowledge, attitudes, and practices regarding AMR/AMU and herd health management.
- **Research and Publications:**
 - Publishing peer-reviewed research articles on antimicrobial use in commercial broiler chicken production and related topics.
- **Private Sector Engagement:**
 - Engaging private sector labs in the animal health sector in both passive surveillance of diseased food animals and active surveillance in the aquaculture sector to address their lack of focused work on AMR.
- **Expansion to Aquaculture Sector:**
 - Strengthening the aquaculture sector (which currently does not carry out AMR work) by developing a national AMR surveillance strategy and initiating a pilot study on AMR surveillance in aquaculture.
- **National External Quality Assurance Scheme:**
 - Providing technical and consumables support to conduct two rounds of the National External Quality Assurance Scheme. This scheme will enable the national reference laboratories to provide quality assurance services to the sentinel laboratories nationwide.

Looking Ahead

The FFCGP is a testament to the power of international collaboration in addressing global health challenges. The program is paving the way for Pakistan to become a leader in combating antimicrobial resistance by building robust AMR surveillance systems, fostering multisectoral coordination, and promoting evidence-based decision-making. As Phase 2 progresses, the continued support from the UK Department of Health and Social Care and the collaborative efforts of DAI and its partners will be crucial in ensuring the sustainability and impact of these initiatives, ultimately contributing to the global fight against AMR.

*Author: Tabitha Afzal Imdad, Communications Specialist, DAI Pakistan, Fleming Fund Country Grant
Contributors: Dr. Abdul Rehman, Muhammad Faheem, Saba Tariq and Dr. Qadeer Ahsan*