FINAL REPORT

2024/2025

Fleming Fund Country Grant for Nepal - Phase II
Group for Technical Assistance

September, 2025

Acknowledgement

The Group for Technical Assistance (GTA) expresses its heartfelt gratitude to FHI 360 for its guidance, technical support, and continuous partnership throughout the implementation of the Fleming Fund Country Grant for Nepal (FFCGN). The collaboration and encouragement from FHI 360 were instrumental in translating project goals into sustained progress.

We extend our sincere appreciation to the Government of Nepal (GoN), particularly the Ministry of Health and Population (MoHP), and the Ministry of Agriculture and Livestock Development (MoALD), for their leadership and ownership. Within these ministries, we gratefully acknowledge the contributions of the Quality Standards and Regulation Division (QSRD), the Department of Drug Administration (DDA), the Department of Food Technology and Quality Control (DFTQC), the Department of Environment (DoE), the Department of Livestock Services (DLS), the Veterinary Standard and Drug Regulatory Laboratory (VSDRL), the National Public Health Laboratory (NPHL), and the Central Veterinary Laboratory (CVL). We also recognize the important role of regional laboratories in both the human and animal health sectors for their technical contributions and continued engagement in surveillance activities.

We are equally grateful to international and regional partners whose technical and institutional support enriched the implementation of this project. In particular, the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO), and the Fleming Fund regional grantees provided invaluable expertise, coordination, and learning platforms that strengthened the project's outcomes and integration within the broader One Health framework.

Our sincere thanks further go to the Antimicrobial Use (AMU) Point Prevalence Survey (PPS) sites, participating hospitals, veterinary institutions, academic bodies, as well as to veterinarians, paraveterinarians, health workers, farmers, and field teams, whose dedication and collaboration were essential in operationalizing surveillance activities and ensuring data of high quality.

This collective achievement stands as a testament to the strength of partnerships and shared vision. GTA remains deeply appreciative of all contributors and looks forward to continued collaboration in advancing AMR containment and building a resilient surveillance system in Nepal.

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List of Abbreviations

AH	Animal Health
AMC	Antimicrobial Consumption
AMR	Antimicrobial Resistance
AMROH	Antimicrobial Resistance and One Health
AMS	Antimicrobial Stewardship
AMU	Antimicrobial Use
BPKIHS	B.P. Koirala Institute of Health Sciences
CPA SPARC	Commonwealth Pharmacists Association Surveillance and Prescribing Support for Antimicrobial Stewardship Resource Capacity Building
CSH	Civil Service Hospital
CVL	Central Veterinary Laboratory
DDA	Department of Drug Administration
DFTQC	Department of Food Technology and Quality Control
DH	Dadeldhura Hospital
DLS	Department of Livestock Services
DoE	Department of Environment

List of Abbreviations

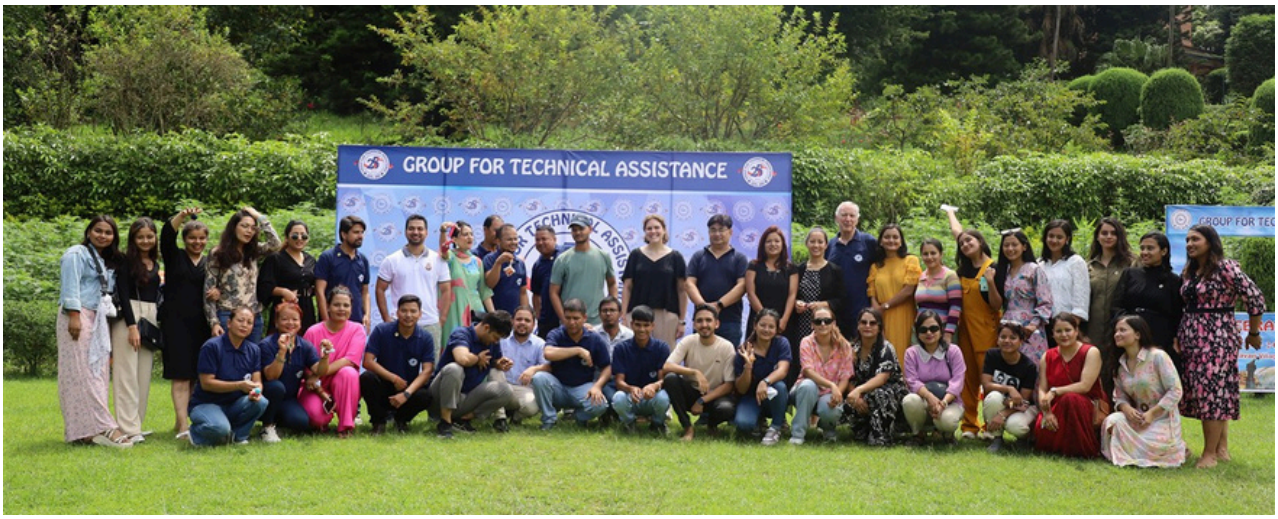
ESBL *E. coli*	Extended-Spectrum Beta-Lactamase *Escherichia coli*
FAO	Food and Agriculture Organization
FFCGN	Fleming Fund for Country Grant for Nepal
FHI360	Family Health International - 360
GIH	Grande International Hospital
GLASS	Global Antimicrobial Resistance and Use Surveillance System
GTA	Group for Technical Assistance
HAMS	Hospital for Advanced Medicine & Surgery
HH	Human Health
IEC	Information, Education, and Communication
KCH	Kanti Children's Hospital
KH	Koshi Hospital
LPH	Lumbini Provincial Hospital
MoHP	Ministry of Health and Population
MPH	Mahakali Provincial Hospital

List of Abbreviations

NADIL	National Avian Disease Investigation Laboratory
NAP	National Action Plan
NH	Narayani Hospital
NPHL	National Public Health Laboratory
PHJ	Provincial Hospital Janakpur
PPS	Point Prevalence Survey
QSRD	Quality, Standards and Regulation Division
RAHS	Rapti Academy of Health Sciences
SOP	Standard Operating Procedure
STIDH	Sukraraj Tropical and Infectious Disease Hospital
VL	Veterinary Laboratory
VSDRL	Veterinary Standards and Drug Regulatory Laboratory
WHO	World Health Organization
WAs	Work Areas

About GTA

Group for Technical Assistance (GTA) Nepal is a leading public health organization with over 25 years of experience advancing health across Nepal and South Asia. In close coordination with its sister entity, the GTA Foundation, it applies community-driven innovation, evidence-based advocacy, and strategic partnerships to address urgent health challenges. Its diverse portfolio spans immunization campaigns, antimicrobial stewardship (AMS), One Health surveillance, disaster preparedness, disease prevention, mental health, digital health and AI, capacity building, and public health research. GTA's work is grounded in strong collaborations with government bodies, international health agencies, research institutions, and local communities, ensuring both contextual relevance and global standards. Notable achievements include national cholera and typhoid vaccination drives, integration of TCV into Nepal's immunization program, and health system strengthening. GTA also supports Zero Suicide strategies in partnership with Nepal's MoHP, and serves as the regional Secretariat for AI-Sarosh and the Zero Suicide International Asia Alliance, leveraging AI to improve maternal health and promote suicide prevention across South Asia. Through innovation, research, and sustained collaboration, GTA continues to deliver impactful and scalable public health solutions across the region.



Project Description

Introduction

Antimicrobial resistance (AMR) is a leading global public health threat, affecting countries across all regions and income levels. Its drivers and consequences, however, are exacerbated by poverty and inequality, disproportionately affecting low and middle-income countries. In response, Nepal developed the National Action Plan on AMR (NAP-AMR) 2024-2028, emphasizing a one health approach integrating human, animal, and environment sectors to strengthen surveillance, stewardship, and policy interventions.

In alignment with NAP-AMR, GTA, as a local implementation partner of FFGCN Phase II, in collaboration with FHI 360, successfully implemented AMR, AMU, and antimicrobial consumption (AMC) activities across human, animal, environment, and food sectors in Nepal. The project engaged a wide range of national and provincial stakeholders, including the MoHP, MoALD, QSRD, DLS, DDA, DoE, DFTQC, NPHL, VSDRL, CVL, FF-supported laboratories and hospitals.

The project strengthened surveillance systems, enhanced technical and institutional capacity, generated evidence, and engaged multi-sectoral stakeholders in decision-making processes to combat AMR under the One Health approach.

Goal

To effectively manage and mitigate AMR by producing and disseminating high-quality data on AMR, AMU, and AMC in human health (HH), animal health (AH), environment, and food sectors, thereby informing and influencing policy and practice for sustainable and responsible antimicrobial use.

General objectives

- To generate quality AMR, AMU, and AMC data of HH and AH for strengthening surveillance systems
- To analyze and prepare a report of AMR, AMU, and AMC data
- To share comprehensive AMR, AMU, and AMC evidence and findings with stakeholders and decision-makers

Specific objectives

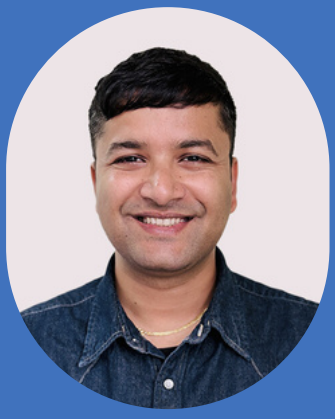
- To conduct one round of active AMR surveillance in poultry and cattle, including stakeholder workshops, data and sample collection, laboratory testing, and analysis to ensure robust AMR data in animals
- To establish a comprehensive farm-level AMU surveillance system across all seven provinces, focusing on responsible usage practices to reduce the risk of resistance emergence
- To execute a PPS at 12 healthcare sites to provide a snapshot of AMU in healthcare settings
- To implement integrated surveillance approaches, such as the ESBL E. coli Tricycle method, to gather high-quality AMR, AMU, and AMC data across HH, AH, and the environment
- To support DDA in collecting and reporting quality AMC data in HH and promoting responsible antibiotic use in healthcare settings
- To ensure timely electronic data collection and promptly disseminate AMR/AMU/AMC data to relevant stakeholders
- To engage provincial stakeholders in promoting rational drug use in the AH sector through workshops, awareness, and advocacy

Key Achievements

- Implemented one round of active AMR surveillance in poultry across seven provinces
- Conducted inventory management training for the microbiology laboratory staff at HH, AH, environmental, and food sites
- Regular maintenance and calibration of equipment across the FF supported sites
- Conducted AMU PPS across 12 hospitals (HH)
- Completed nationwide farm-level AMU surveillance across 660 poultry farms
- Trained pharmaceutical manufacturers, wholesalers, suppliers, vendors, and importers on using the WHO AMC Excel template for data collection, entry, and reporting to the Global Antimicrobial Resistance and Use Surveillance System (GLASS)
- Implemented joint surveillance across human, animal, and environment sectors under the One Health approach
- Conducted a consultative workshop for finalizing Information Education and Communication (IEC) materials; printed, and distributed IEC materials to poultry farmers, government institutions, and FAO
- Conducted a national-level one health conference on AMU, AMC, and AMR
- Developed an interoperability plan for the One Health database and shared it with QSRD, MoHP; delivered IT equipment to QSRD, MoHP

FFCGN Team - GTA

Core Team



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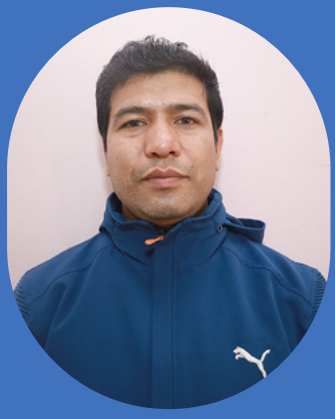

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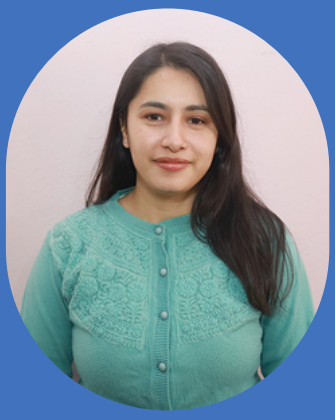

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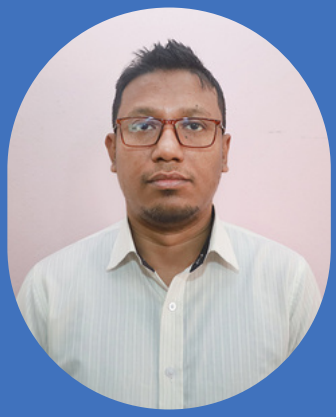

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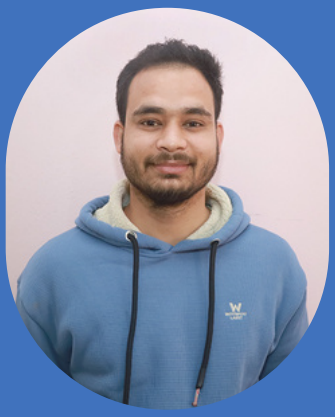

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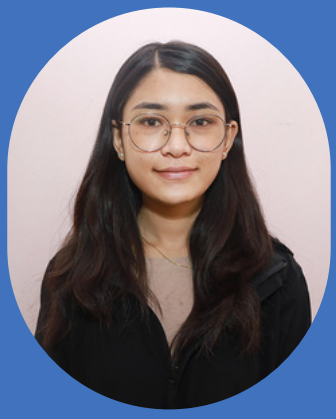

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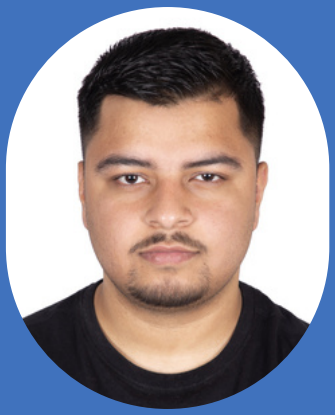

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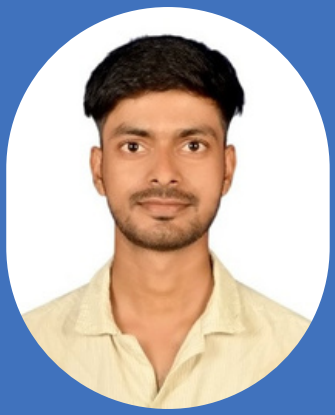

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Activities under FFCGN - GTA

Seven Work Areas (WAs)

- **WA 1.02 Active surveillance carried out in animals**
  - Active AMR surveillance in poultry
- **WA 1.03 Laboratories produce quality data**
  - Strengthening the capacity of laboratory staff to manage the inventory of equipment and consumables
  - Annual biosafety equipment calibration for participating laboratories and equipment parts maintenance
- **WA 1.05 AMU data gathered**
  - AMU PPS was conducted at 12 sites (HH)
  - Farm-level AMU survey in poultry in seven provinces (AH)
- **WA 1.07 AMC data gathered**
- **WA 1.09 Integrated surveillance carried out**
- **WA 3.01 Surveillance reports shared in-country**
  - National level one health conference on AMR, AMU, and AMC
- **WA 3.02 Surveillance reports used to inform practice**
  - More rational use of drugs by selected service providers and users (AH)
  - IT and consultancy support for strengthening the AMR secretariat and the NCC for developing a one health database, dashboard, and website

WA 1.02 Active surveillance carried out in animals

Active AMR surveillance in poultry

Strengthening surveillance in the animal sector is critical for understanding AMR patterns at the farm level and generating evidence to guide national policy and antimicrobial stewardship (AMS) interventions. GTA, in collaboration with CVL, facilitated active AMR surveillance in poultry, marking an important milestone in the surveillance of the animal sector.

Firstly, a coordination meeting was conducted at CVL on 12th December 2024, with active participation of key stakeholders from DLS, VSDRL, FAO, and the FFCGN team. The meeting discussed and planned for the implementation of the active AMR surveillance in poultry.

Following this, a coordination and orientation meeting was held at CVL on 19th and 20th January 2025, engaging representatives from DLS, participating veterinary laboratories, FAO, and the FFCGN team. The meeting oriented seven participating laboratories for the implementation of surveillance and discussed surveillance strategies, data collection methodologies, and collaborative mechanisms between CVL and other participating laboratories. In addition, the FFCGN team consulted with the participating laboratories on the required consumables to implement the surveillance. Based on this discussion, the consumables were drafted and later finalized in close consultation with CVL and the FFCGN team. GTA procured and distributed the consumables to all the participating laboratories on 26th March, 2025.

Based on the laboratory Standard Operating Procedure (SOP), a need-based microbiology laboratory placement training was conducted on 8th–13th June, 2025. The training provided comprehensive knowledge and practical skills in bacterial culture, identification, antimicrobial susceptibility testing (AST), and biosafety protocols, data reporting, and emphasized standardization of laboratory practices across sites.

WA 1.02 Active surveillance carried out in animals

Following the training, sample collection and processing were started. The sample collection has been completed at CVL, NADIL, VL Biratnagar, and VL Surkhet and continues at all laboratories except VL Janakpur. The implementation at VL Janakpur has been delayed due to the transfer of trained microbiology laboratory staff, leaving the sanctioned post vacant. GTA coordinated with CVL to conduct on-site training for the available staff. However, it was further postponed as staff were engaged in outbreak investigation and management of lumpy skin disease in the catchment area. CVL is planning to conduct the training soon, after which the surveillance activities will continue. The catchment area, the allocated number of samples, and samples collected (as of September 2025) are summarized as follows:

Table 1. Catchment areas for active AMR surveillance

Surveillance sites (Laboratories)	Catchment areas (Districts)	No. of samples	Samples collected till September 2025
CVL	Kathmandu, Bhaktapur. Lalitpur, Kavrepalanchowk, Dhading, Nuwakot	120	120
National Avian Disease Investigation Laboratory (NADIL)	Chitwan, Makwanpur, Nawalparasi	100	100
VL Biratnagar	Morang, Sunsari, Jhapa	55	55
VL Janakpur	Dhanusha, Siraha, Bara	55	Not started

WA 1.02 Active surveillance carried out in animals

Surveillance sites (Laboratories)	Catchment areas (Districts)	No. of samples	Samples collected till September 2025
VL Pokhara	Kaski, Tanahun, Lamjung	90	6
VL Surkhet	Surkhet, Dang, Banke	80	80
VL Dhangadhi	Kailali, Kanchanpur	65	30
Total number of samples		**565**	**391**

WA 1.02 Outcomes

- Trained 6 microbiology laboratory staff of participating veterinary laboratories for conducting active AMR surveillance in poultry
- Ongoing data collection under active AMR surveillance in poultry

WA 1.03 Laboratories produce quality data

Strengthening the capacity of laboratory staff to manage the inventory of equipment and consumables

Quality data relies on well-functioning laboratories with robust technical capacity. GTA, in collaboration with NPHL, CVL, DFTQC, and DoE, strengthened laboratory capacity for the management of the inventory of equipment and consumables across the HH, AH, food, and environment sectors.

The orientation package on inventory management and equipment maintenance was developed in consultation with NPHL, CVL, DFTQC, and DoE. It includes an instruction manual for paper-based laboratory inventory management, an instruction manual for equipment maintenance and calibration, printed log sheets, and a PowerPoint presentation. The orientation package was designed to enhance and strengthen the technical capacity to manage the inventory of equipment and consumables and user-end maintenance of equipment so as to ensure its optimal performance. Based on the package, GTA conducted on-site orientation to 65 microbiology laboratory staff across 11 microbiology laboratories covering the HH, AH, food, and environment sectors.

Table 2. Orientation on inventory management and equipment maintenance

Sectors	Sites	Date of orientation	No. of Participants
Environment	DoE	9th March, 2025	4
Food	DFTQC	12th March, 2025	4
AH (1 site)	VL Surkhet	16th March, 2025	3

WA 1.03 Laboratories produce quality data

Sectors	Sites	Date of orientation	No. of Participants
HH (8 sites)	Dadeldhura Hospital (DH)	16th March, 2025	7
	Koshi Hospital (KH)	16th March, 2025	5
	B.P. Koirala Institute of Health Sciences (BPKIHS)	17th March, 2025	10
	Narayani Hospital (NH)	19th March, 2025	6
	Provincial Hospital Janakpur (PHJ)	21st March, 2025	5
	Western Regional Hospital (WRH)	20th March, 2025	8
	Bir Hospital	27th March, 2025	7
	Patan Hospital	28th March, 2025	6
Total no. of participants			**65**

Annual biosafety equipment calibration for participating laboratories and equipment parts maintenance

Annual biosafety equipment calibration

The calibration of the biosafety cabinet was conducted at 16 FF supported laboratories across HH, AH, and food sites. Calibration significantly reduced downtime and equipment failure. In addition, GTA developed and disseminated a user manual for equipment maintenance and calibration to encourage good practices beyond the project period.

WA 1.03 Laboratories produce quality data

Biosafety cabinets were assessed at the 17 sites and calibration was successfully completed at 16 sites. The sites where biosafety cabinets were assessed are as follows:

- Bir Hospital, Kathmandu
- Tribhuvan University and Teaching Hospital, Kathmandu
- Department of Food Technology and Quality Control, Kathmandu
- Patan Hospital, Lalitpur
- B.P. Koirala Institute of Health Sciences, Dharan
- Koshi Hospital, Biratnagar
- Provincial Hospital, Janakpur
- Narayani Hospital, Birgunj
- National Avian Disease Investigation Laboratory, Chitwan
- Western Regional Hospital, Pokhara
- Veterinary Laboratory, Pokhara
- Lumbini Provincial Hospital (LPH), Butwal*
- Surkhet Hospital, Surkhet
- Veterinary Laboratory, Surkhet
- Seti Provincial Hospital, Dhangadi
- Veterinary Laboratory, Dhangadi
- Dadeldhura Hospital, Dadeldhura

*Note: Upon the assessment of the biosafety cabinet at Lumbini Provincial Hospital (LPH), Butwal, it was found that the blower was not working, and upon troubleshooting, a board fault was found. Due to this reason, validation could not be performed.

Equipment parts maintenance

GTA conducted equipment maintenance and inventory management activities actively throughout the project period to enhance laboratory efficiency and sustain the laboratory functionality across FF supported sites. Firstly, GTA established contact with focal persons, ensuring sustained coordination at all sites.

WA 1.03 Laboratories produce quality data

Regular monthly follow-ups were conducted to monitor the operational status of the equipment and initiate timely repair and maintenance. A total of 99 equipment breakdowns were reported across 18 sites. Of these, 68 (68.7%) were successfully resolved. The timely maintenance of the equipment contributed to the delivery of consistent and high-quality microbiological data across the sites. The sites where maintenance activities were conducted are listed below:

- Bir Hospital, Kathmandu
- Central Veterinary Laboratory, Kathmandu
- National Public Health Laboratory, Kathmandu
- Tribhuvan University and Teaching Hospital, Kathmandu
- Department of Food Technology and Quality Control, Kathmandu
- Patan Hospital, Lalitpur
- B.P. Koirala Institute of Health Sciences, Dharan
- Koshi Hospital, Biratnagar
- Narayani Hospital, Birgunj
- National Avian Disease Investigation Laboratory, Chitwan
- Western Regional Hospital, Pokhara
- Veterinary Laboratory, Pokhara
- Lumbini Provincial Hospital, Butwal
- Veterinary Laboratory, Surkhet
- Veterinary Laboratory, Biratnagar
- Seti Provincial Hospital, Dhangadi
- Veterinary Laboratory, Dhangadi
- Dadeldhura Hospital, Dadeldhura

WA 1.03 Outcomes

- Developed an orientation package on inventory management and equipment maintenance for microbiology laboratories across sectors
- Conducted orientation for building sustainable technical capacity to manage the inventory of equipment and consumables (microbiology) across sectors
- Maintained the optimum usage of equipment across FF supported sites

WA 1.05 AMU data gathered

AMU PPS was conducted at 12 sites (HH)

Monitoring AMU in hospitals is fundamental to improving AMS and reducing the risk of AMR. To generate reliable baseline evidence on AMU and prescribing practices, GTA, in close coordination with QSRD, MoHP, conducted AMU PPS across 12 hospitals.

Following the ethical approval from NHRC, GTA, in close coordination with the FFCGN team, discussed and finalized the implementation plan for AMU PPS activities. Following this, coordination meetings were conducted at 7 sites to plan for the orientation and data collection.

Table 3. Site- specific coordination for the AMU PPS

AMU PPS sites	Date of coordination	No. of participants
Civil Service Hospital (CSH)	4th Oct, 2024	20
Dadeldhura Hospital (DH)	8th Oct, 2024	20
Grande International Hospital (GIH)	21st Oct, 2024	21
HAMS Hospital (HAMS)	23rd Oct, 2024	21
Kanti Children's Hospital (KCH)	22nd Oct, 2024	20
Mahakali Provincial Hospital (MPH)	6th Oct, 2024	20
Sukraraj Tropical and Infectious Disease Hospital (STIDH)	24th Oct, 2024	20

WA 1.05 AMU data gathered

In November 2024, GTA oriented the consultants on AMU PPS methodology, questionnaires, and field implementation. Following the orientation, GTA coordinated with focal persons assigned at each site and finalized the list of data collectors. The sites assigned data collectors, ensuring representation from doctors, nurses, pharmacists, and laboratory staff. One of the major objectives of engaging hospital staff as data collectors was to build the sustained technical capacity of the hospital staff to independently conduct AMU PPS. At each site, the survey started with orientation to data collectors and pilot testing on Sunday, followed by data collection from Monday to Friday. The survey was first initiated from STIDH. The pilot testing at STIDH highlighted minor areas for improvement in the questionnaire and data entry sheet, which were promptly revised before rolling out data collection across other sites. On 3rd January, 2025, a debriefing meeting was conducted at QSRD, MoHP, update stakeholders on the progress of ongoing AMU PPS activities, to share and discuss preliminary findings from 4 AMU PPS sites, the upcoming field implementation and monitoring plan.

Data collection was completed at all sites by the first week of February 2025. Upon the completion of data collection, GTA developed a detailed data analysis plan, discussed and finalized it with the FFCGN team, and analyzed the site-specific data accordingly. Dissemination was conducted at all sites. Dissemination involved sharing the site-specific findings and recommending key stakeholders, including the hospital management team, head of the department, doctors, nurses, laboratory staff, and pharmacists, ensuring that the findings were effectively communicated to improve AMS practices. The details of the AMU PPS activities are shown in the table below.

Table 4. Orientation and data collection in the AMU PPS sites

Sites	Date of Orientation	No. of participants	Data collection period	No. of data collectors	Total data collected
STIDH	Dec 1, 2024	25	Dec 2, 2024	12	12
CSH	Dec 8, 2024	25	Dec 9 - 13, 2024	12	108

WA 1.05 AMU data gathered

Sites	Date of Orientation	No. of participants	Data collection period	No. of data collectors	Total data collected
HAMS	Dec 15, 2024	25	Dec 17 - 18, 2024	12	50
GIH	Dec 22, 2024	25	Dec 23 - 27, 2024	12	85
NH	Dec 29, 2024	25	Dec 30, 2024– Jan 3, 2025	12	135
PHJ	Jan 5, 2025	25	Jan 6 - 10, 2025	12	98
DH	Jan 5, 2025	25	Jan 6 - 8, 2025	12	37
MPH	Jan 12, 2025	25	Jan 13 - 15, 2025	12	37
KH	Jan 13, 2025	25	Jan 14 - 17, 2025	12	143
RAHS	Jan 19, 2025	25	Jan 20 - 23, 2025	12	119
LPH	Jan 26, 2025	25	Jan 27 - 31, 2025	12	245
KCH	Feb 2, 2025	25	Feb 3- 7, 2025	11	130

Table 5. Site- specific dissemination of the AMU PPS

Sites	Date of Dissemination	No. of participants
STIDH	Jan 30, 2025	25
CSH	Mar 27, 2025	25
HAMS	Mar 26, 2025	25

WA 1.05 AMU data gathered

Sites	Date of Dissemination	No. of participants
GIH	Mar 10, 2025	25
NH	Mar 19, 2025	25
PHJ	Mar 21, 2025	25
DH	Mar 16, 2025	25
MPH	Mar 10, 2025	25
KH	Mar 17, 2025	25
RAHS	Mar 19, 2025	25
LPH	Mar 21, 2025	25
KCH	Mar 25, 2025	25

Following the completion of the site-specific dissemination, the compiled data of all the AMU PPS sites were analyzed. The manuscript is being drafted for journal publication.

Farm-level AMU surveillance in poultry in seven provinces (AH)

Farm-level AMU survey in poultry was conducted with the objective of assessing the situation of AMU in commercial broiler farms across seven provinces of Nepal.

The process started with a coordination meeting at VSDRL on 23rd September, 2024. The meeting, attended by stakeholders from DLS, VSDRL, CVL, and FAO, discussed the draft protocol for the AMU survey in poultry. Following the subsequent discussions and revisions,

WA 1.05 AMU data gathered

the government endorsed the protocol, enabling the finalization of survey sites, selection of local field enumerators, and development of a field implementation plan.

Orientation for the local field enumerators (veterinarians) from the predefined survey sites was conducted on 13th and 16th December 2024 at VSDRL. The enumerators were oriented about the methodology, questionnaire, data collection using Kobo Toolbox, and its data entry procedures, followed by pilot testing on the same day. Subsequently, data collection was started.

This nationwide farm-level AMU survey will serve as a critical baseline to design rational AMU interventions, promote AMS, and guide evidence-based policies to combat AMR.

Table 6. Coverage of the AMU survey in poultry

SN	Provinces	Survey districts	Farm size by districts	Number of enumerators
1	Koshi	Jhapa	29	2
		Ilam	10	
		Morang	38	2
		Udaypur	25	1
2	Madhesh	Saptari	11	1
		Sarlahi	22	1
		Siraha	17	1
		Mahottari	14	1

WA 1.05 AMU data gathered

SN	Provinces	Survey districts	Farm size by districts	Number of enumerators
3	Bagmati	Dhading	49	3
		Chitwan	73	3
		Makwanpur	33	2
		Sindhuli	20	1
		Kavre	55	3
4	Gandaki	Tanahu	20	2
		Gorkha	12	
		Lamjung	12	
		Nawalparasi East	17	1
5	Lumbini	Nawalparasi West	16	1
		Banke	23	1
		Bardiya	24	1
		Rupandehi	10	1
		Kapilvastu	11	

WA 1.05 AMU data gathered

SN	Provinces	Survey districts	Farm size by districts	Number of enumerators
6	Karnali	Rukum West	10	1
		Salyan	10	1
		Surkhet	29	1
		Dailekh	10	1
7	Sudur-paschim	Doti	10	1
		Kailali	30	1
		Kanchanpur	20	1
Total			**660**	**35**

Note: This initiative was led by VSDRL under DLS, and jointly implemented by the FFCGN team and the FAO.

WA 1.05 Outcomes

- Trained 300 hospital staff for conducting AMU PPS
- Conducted AMU PPS in 12 sites (HH)
- Collected 1212 patient-level AMU PPS data from 12 sites (HH)
- Conducted site-specific dissemination of AMU PPS findings at 12 sites
- Implemented farm-level AMU survey in poultry across 660 farms covering 29 districts across 7 provinces
- Trained 35 veterinarians for conducting AMU survey in poultry

WA 1.07 AMC data gathered

GTA, in collaboration with the DDA, WHO, and the FFCGN team, conducted 2 days of training on the use of the WHO AMC Excel template for data collection, entry, and reporting to GLASS. The training held on 18th-19th March 2025, was specifically tailored for DDA staff, pharmaceutical manufacturers, wholesalers, vendors, suppliers, and importers. The training provided practical guidance on standardized data collection, entry, and reporting of AMC data, with emphasis on minimizing errors and ensuring completeness. A total of 150 representatives were trained, enhancing the sector's capacity to generate reliable AMC data for national and global reporting to the GLASS. The training also helped foster collaboration among government stakeholders, pharmaceutical manufacturers, wholesalers, vendors, suppliers, and importers, creating a shared understanding of their roles in AMU and AMR surveillance systems.

In addition, GTA supported a one-year renewal of the SSL key of the DAMS software at DDA.

WA 1.07 Outcomes

- Trained a total of 150 participants, including DDA staffs, pharmaceutical manufacturers, wholesalers, vendors, suppliers, and importers on using the WHO AMC Excel template for data collection, entry, and reporting to GLASS
- Supported reporting AMC data (2023) to GLASS

WA 1.09 Integrated surveillance carried out

In alignment with the strategic objective of the NAP-AMR to strengthen AMR surveillance and research, the GoN, with support from the FFCGN, has successfully initiated the country's first joint AMR surveillance framework (integrated surveillance) under the one health approach. This initiative will facilitate the early detection and estimation of ESBL-Ec emergence, strengthen multisectoral collaboration, and support evidence-based policymaking to combat AMR.

A series of activities was carried out to operationalize this framework. An introductory meeting conducted on 12 September 2024 engaged key stakeholders from QSRD, DLS, NPHL, VSDRL, CVL, FAO, and WHO. The meeting discussed implementing joint surveillance for ESBL E. coli under the One Health framework across human, animal, and environmental sectors. Following the introductory meeting, a draft proposal was developed and discussed with each sector. A discussion meeting was conducted on 7th January, 2025, to discuss methodologies across sectors. The meeting led to the formation of technical teams across human, animal, and environmental sectors to work out sector-specific methodologies. This was followed by a series of consultation meetings and sector-specific meetings to refine and align methodologies, SOPs, and sampling strategies.

The protocol finalization workshop on 20 February 2025 reached consensus on SOP modifications and formalized the joint surveillance protocol across sectors. Following this, GTA facilitated site-specific consultations with human sampling sites on 14th March, 2025 (Bir Hospital, Paropakar Maternity and Women's Hospital, and Kathmandu Model Hospital). The finalized protocol was subsequently submitted for ethical approval to the Nepal Health Research Council (NHRC) and the institutional review committee of human sampling sites.

Upon receiving ethical approval from NHRC and support letters from human sampling sites, a list of consumables was prepared in close consultation with all sectors, including NPHL, CVL, DoE, and the FFCGN team. Based on the list, the consumables were procured and distributed to the respective sites.

WA 1.09 Integrated surveillance carried out

A detailed orientation on joint surveillance protocol was held on 7th July, 2025, ensuring clarity and consistency in the implementation of surveillance activities across sectors. Since the microbiology laboratory at DoE was recently established, and upon recognizing the knowledge gaps in implementing AMR surveillance, GTA conducted a week-long intensive microbiology training at DoE in close coordination with CVL, NPHL, DoE, and the FFCGN team. The training was facilitated by NPHL and was conducted from 6th – 11th July 2025. Following these preparatory steps, monthly sample collection was initiated across all sectors.

GTA, in collaboration with NPHL, has ensured continuous monitoring and supportive supervision across the surveillance sites. The first monthly debriefing meeting was conducted on 19th August 2025 with the active participation of stakeholders from NPHL, DoE, CVL, and human sampling sites, showing strong commitment. Under the leadership of NPHL, regular updates/findings will be disseminated through virtual or physical monthly debriefing meetings. This will facilitate smooth implementation, experience sharing, best practices, and evidence-based decision-making.

The collaborative efforts undertaken in the development and implementation of the joint surveillance mark a significant step toward strengthening AMR surveillance in Nepal. This will serve as a foundation for future AMR initiatives, contributing to evidence-based policy decisions and a strengthened one health approach.

Surveillance activities will continue until March 2026, with the FFCGN team at FHI 360 taking forward ongoing support and coordination.

WA 1.09 Outcomes

- Developed a detailed and harmonized protocol for conducting joint surveillance
- Ongoing data collection across human, animal, and environment sectors

WA 3.01 Surveillance reports shared in-country

National level one health conference on AMR, AMU, and AMC

With the theme of "Bridging Perspectives, Building Resilience One Health Approach to Contain AMR", GTA successfully conducted the one health conference on 24-25 March 2025 in Kathmandu, with support from FHI360 Nepal.

Prior to the main event, a pre-conference workshop on "Developing and interpreting antibiograms" was held on 23rd March 2025. The workshop enhanced technical capacity in generating and analyzing antibiograms through hands-on exercises using Excel and SPSS.

The conference brought together over 200 national and international delegates representing stakeholders from HH, AH, the environment, food, academia, civil society, and development partners. The two-day landmark event provided a platform to advance Nepal's one health response to AMR by fostering cross-sectoral dialogue, sharing national, regional, and global experiences, and promoting coordinated actions.

High-level dignitaries from the MoHP, Nepal Association of Clinical Microbiologists (NACM), and WHO emphasized the urgent need for multisectoral collaboration, evidence-driven policies, and sustained investment in AMR containment. A keynote address by Prof. Dr. Nitish Debnath (USAID Chief of Party for One Health Activity, Bangladesh) showcased regional best practices, while plenary and technical symposiums highlighted governance, evidence generation, prevention and control, and stakeholder responsibilities.

The sessions explored country experiences from Vietnam, Cambodia, and Bangladesh, alongside Nepal's progress on AMR surveillance, AMS, food safety, and regulatory frameworks. Technical presentations addressed cutting-edge topics, including syndromic testing, antifungal resistance, AMR in immunocompromised patients, animal health surveillance, vaccines, diagnostic stewardship, and the role of climate change in AMR dynamics. In addition, oral and poster sessions provided a platform for researchers and practitioners to share emerging evidence from Nepal.

WA 3.01 Surveillance reports shared in-country

A key achievement of the conference was the strengthened one health network, fostering greater collaboration among ministries, regulatory bodies, professional associations, universities, early career researchers, and development partners. The conference also emphasized community engagement, youth participation, and sustainable financing mechanisms as essential pillars for long-term AMR containment.

By convening national and international experts, the conference not only reinforced Nepal's commitment to the one health approach but also positioned the country as an active contributor to the regional and global AMR agenda.

Resolutions of the conference

Strengthening One Health Coordination and Governance

Nepal will embed the One Health approach into AMR governance by fostering intersectoral collaboration and accountability. Efforts will focus on harmonizing policies across ministries, engaging stakeholders from grassroots to leadership, and leveraging global platforms to align with international best practices and funding opportunities.

Surveillance for Informed Action

To improve AMR surveillance, the government will integrate funding into core health and agriculture budgets and expand microbiology lab infrastructure. Dedicated roles for microbiologists in food safety and environmental health will be created, and surveillance data will be actively translated into policy and action.

Promoting Judicious Use of Antimicrobials

Nepal will mandate stewardship programs in all healthcare settings and formally recognize the role of MD Clinical Microbiologists. Regulations will be enforced across sectors to ensure rational antimicrobial use, with clear guidelines for production and disposal. Access to essential medicines and preventive measures like WASH and vaccination will be prioritized.

WA 3.01 Surveillance reports shared in-country

Enhancing Awareness, Education, and Capacity Building

AMR education will be embedded in national curricula, with coordinated efforts across ministries, universities, and professional bodies. Public awareness campaigns and capacity-building initiatives will be scaled up to foster a culture of responsible antimicrobial use and resilience against AMR.

Sustained Policy Engagement

Regular meetings with policymakers will be convened to maintain momentum and ensure that commitments made during the conference translate into tangible actions. This ongoing engagement will reinforce the urgency of AMR and support long-term implementation of the One Health strategy.

WA 3.01 Outcomes

- Conducted national-level one health conference

WA 3.02 Surveillance reports used to inform practice

More rational use of drugs by selected service providers and users (AH)

GTA developed a set of IEC materials focusing on poultry farming practices, biosecurity measures, common poultry diseases, AMR, AMU, and the importance of prudent antibiotics use to strengthen awareness and promote rational use of antimicrobials in poultry production.

The process began with a consultative workshop on 2nd March 2025, engaging government stakeholders (DLS, CVL, and VSDRL), poultry practitioners, veterinary technicians, and poultry farmers. The workshop provided a participatory platform for discussing the content and design of IEC materials. The participants jointly identified the priority themes, contents, and messaging strategies to ensure that the IEC were practical, farmer-friendly, impactful, and inclusive, while also addressing critical knowledge gaps on AMR and AMU.

Subsequent technical discussions with government stakeholders refined the design and content as well as discussed the distribution channels of the IEC materials, which were finalized and endorsed by the meeting held at DLS on 23 March 2025. GTA developed three types of IEC materials: flip-chart, calendar, and informative record-keeping book. The materials were printed and distributed to the poultry farmers, government institutions (including DLS, VSDRL, CVL, livestock services training centers based in the provinces), and FAO.

IT and consultancy support for strengthening the AMR secretariat and the NCC for developing a one health database, dashboard, and website

GTA developed an interoperability guideline and data architecture plan for the One Health database and shared it with QRSD, MoHP, and the FFCGN team at FHI 360. Additionally, IT equipment for the One Health database was delivered to QSRD, MoHP. The list of equipment is as follows:

- Dell PowerEdge R750xs Rack Mount Server
- All-in-One PC HP 27 Inch
- HP Color Printer

WA 3.02 Surveillance reports used to inform practice

- HP-Aruba Switch CX 6200
    - 24G CL4 POE 4 SFP+370 Switch 24 port
    - 10G SFP+ LC SR 300m OM3 MMF Transceiver
- Firewall FortiGate (50 G BDL-950-12)
- UPS with Battery Set
- Installation, Setup, Testing, Cabling, and server configuration
- Cable with accessories
- NAS Storage 32 TB
- Midea Brand Floor Stand AC
- Temperature/Humidity Sensor
- Smart Door Lock (fingerprint access control)
- Fire extinguisher

WA 3.02 Outcomes

- Conducted workshops for veterinarians and agro-vet owners for promoting rational AMU
- Developed, printed, and distributed IEC materials to poultry farmers, government institutions, and FAO
- Developed an interoperability guideline and data architecture plan for one health database and shared with QRSD, MoHP, and the FFCGN team at FHI 360
- Delivered IT equipment for the One Health database to QSRD, MoHP

Value for Money

The Fleming Fund grant prioritized efficient resource allocation, cost-effectiveness strategies, and sustainable impact in the implementation of project activities. Through strategic partnerships, strengthened institutional ownership, and capacity building at central, provincial, and institutional levels, GTA ensured that resources were used effectively to deliver sustained benefits for AMR containment in Nepal.

Collaboration with partners

Close collaboration with the WHO, FAO, Antimicrobial Resistance and One Health (AMROH), Commonwealth Pharmacists Association Surveillance and Prescribing Support for Antimicrobial Stewardship Resource Capacity Building (CPA SPARC), and other regional grantees minimized duplication of efforts, optimized available resources, and harmonized the surveillance efforts with regional and national strategies. For instance, a nationwide AMU survey in poultry was jointly implemented with FAO, covering enumerator training, field mobilization, monitoring, supportive supervision, and comprehensive data analysis. Similarly, AMC training on data collection, entry, and reporting to GLASS was conducted in coordination with WHO, while the IEC material development workshop was jointly organized with the regional AMROH team covering AMROH's components in the same workshop. The joint surveillance protocol was developed through technical consultations with AMROH, WHO, and FAO. Engagement of FF fellows and local institutions helped strengthen laboratory capacities, particularly in AMR testing. By pooling resources, knowledge, and technical expertise, the project delivered a broader, cost-effective, and sustainable impact.

Sustainability and ownership

Sustainability of project activities and outcomes remained a central focus throughout implementation. GTA actively engaged government stakeholders at the central, provincial, and institutional levels, ensuring alignment of project activities with Nepal's NAP-AMR. This approach promoted institutional ownership and integration of project activities into existing government systems.

Value for Money

Key initiatives, including active AMR surveillance in poultry, farm-level AMU surveillance, and joint surveillance across human, animal, and environment sectors, are now integrated within routine surveillance frameworks by the government. Notably, two AMU PPS sites, GIH and HAMS, showed strong commitment by developing an AMS framework, while other sites expressed willingness to integrate AMS into their hospital policies, as a part of the IPC committee, following the completion of surveys.

To facilitate and secure the long-term continuity, GTA conducted extensive capacity-building activities. Comprehensive training and orientation programs were provided to veterinarians, laboratory staff, hospital staff, doctors, nurses, pharmacists, pharmaceutical manufacturers, suppliers, wholesalers, vendors, importers, and local health officials, equipping them with technical skills to independently sustain surveillance and stewardship activities.

By fostering strong collaboration between government institutions and partners, GTA ensured that robust systems, skilled human resources, and institutional ownership are in place to sustain surveillance activities and reporting beyond the project implementation.

Activities Adjustments and Continuity

WA 1.02 Active surveillance carried out in animals

Active AMR surveillance in poultry

The surveillance in poultry was scheduled for completion by September 2025. Despite initial delays due to protocol finalization, administrative processes, and unforeseen political unrest, significant progress has been made, with the majority of sample collection and processing underway across participating veterinary laboratories. Most of the surveillance sites have completed sample collection by the end of September 2025. Remaining sites are expected to complete it by November 2025, ensuring robust data for guiding AMR interventions in poultry.

Active AMR surveillance in cattle

The approval process for the protocol of active AMR surveillance in cattle required more time than initially anticipated, resulting in a delay in the initiation of survey activities. Additionally, due to budgetary constraints in Year 2, only a limited number of priority activities were continued.

WA 1.09 Integrated surveillance carried out

Joint surveillance was initially planned as a short-term survey, employing an approach similar to the tricycle method. Following consultations with key government stakeholders, WHO, FAO, and AMROH, the model was revised as a longitudinal surveillance approach. This adjustment allows for continuous monitoring of ESBL-Ec emergence across human, animal, and environment sectors, generating robust data to support evidence-based decision-making and policy development.

Activities Adjustments and Continuity

Finalizing methodologies and harmonizing protocols required extensive discussions and coordination with human, animal, and environment sectors. While the process slightly shifted the timeline for initiating field activities, it fostered ownership and commitment among the participating sectors, laying the foundation for sustainability.

The initial surveillance plan outlined three sampling rounds aligned with July, August, and September 2025. In alignment with the Nepali calendar, field implementation was adapted by NPHL, with sampling commenced in Shrawan 2082 (late July 2025) and continuing successfully across all sectors.

WA 1.05 AMU survey in poultry and AMU pilot survey in dairy cattle

The approval process for the protocol of the AMU pilot survey in dairy cattle required more time than initially anticipated, resulting in a delay in the initiation of survey activities. Additionally, due to budgetary constraints in Year 2, only a limited number of priority activities could be continued.

WA 3.01 Surveillance reports and data sharing

Under this work area, activities including workshops, development of bulletins and IEC materials, and website content hosting were continued by FHI360 Nepal.

Monitoring and Supervision

Continuous monitoring and supportive supervision were integral components of FFCGN to ensure the effective and timely implementation of surveillance activities across human, animal, and environment sectors. GTA, in close coordination with key government stakeholders (including QSRD, DLS, CVL, VSDRL, NPHL, and regional laboratories), the FFCGN team at FHI 360, and FAO, implemented a structured monitoring framework. This framework emphasized adherence to standardized protocols, quality data collection, and provision of on-site technical support.

Field-level monitoring

Field level monitoring was focused on compliance of surveillance activities with protocols, progress assessment, and identification of site specific challenges.

Active AMR surveillance in poultry: GTA, CVL, and the FFCGN team at FHI 360 conducted regular site visits to participating laboratories. Activities included verification of protocol compliance, tracking progress against surveillance targets, and addressing operational challenges.

AMU PPS: In close collaboration with QSRD, field level monitoring was conducted covering all stages of AMU PPS activities, including orientation, data collection, and dissemination. This reinforced adherence to standardized PPS methodologies, and ensured timely, consistent and quality data collection.

AMU survey in poultry: In close consultation with VSDRL, FAO, and FFCGN team at FHI 360 GTA developed a monitoring plan stratified by baseline AMU performance. Monitoring teams assessed farm-level AMU practices, and reviewed the quality of real time data. Findings from the monitoring visits informed immediate refinements in field implementation.

Joint surveillance: Sector-specific monitoring and supportive supervision are being conducted by NPHL, CVL, and DoE to maintain laboratory and data quality. Additionally, NPHL

Monitoring and Supervision

provided technical supervision to DoE during the initial 3 months, facilitating smooth operationalization of laboratory procedures.

Technical monitoring

Technical oversight was strengthened through the systematic use of results framework, logical framework, key performance indicators, activity tracker sheets, and data quality assurance measures. This approach enabled real-time monitoring of progress against the proposed timeline and ensured high-quality outputs.

For the AMU PPS, daily data review, multi-level validations with the FFCGN team at FHI 360, and timely feedback loops with consultants ensured completeness, consistency, and accuracy of data. Similarly, for the AMU survey in poultry, real-time data collection, and validation were conducted using Kobo Toolbox. In addition, weekly consultation meetings, and structured feedback to data enumerators ensured that discrepancies were promptly identified and resolved ensuring quality and reliable data.

The integrated monitoring strategy ensured adherence to standardized protocols, timely implementation of activities, and enhanced the quality, consistency, and reliability of surveillance data across human, animal, and environment sectors.

Challenges

Despite significant achievements, the project encountered several operational challenges.

- Frequent turnover of government officials prolonged decision-making and the approval of protocols and key documents. This was addressed through continuous engagement and strengthened communication to streamline processes and ensure timely adjustments.
- Administrative approvals took longer than expected, slowing the execution of project activities. GTA worked closely with the FFCGN team at FHI 360, and once approvals were received, activities were promptly initiated to minimize further delays.
- Procurement and distribution of laboratory consumables affected the timely implementation of active AMR surveillance in poultry. Through close coordination with CVL and other participating laboratories, the surveillance activities were successfully realigned, even amidst sudden political unrest.
- Data collection for the AMU survey in broilers was delayed in the hilly areas, as farmers had not initiated poultry farming during the peak winter season. Since the study required a complete production cycle, data collection commenced once farming activities resumed.

These challenges highlighted the importance of flexibility, consistent communication, and coordination for the effective implementation of project activities.

Conclusion

The implementation of the project under the Fleming Fund Country Grant for Nepal represents an important milestone in advancing AMR, AMU, and AMC surveillance within a One Health framework. GTA, working closely with government stakeholders and the FFCGN team at FHI 360, translated project objectives into action by building systems, generating evidence, and fostering collaboration across HH, AH, environmental, and food sectors.

A major contribution was the operationalization of active AMR surveillance in poultry, which established structured monitoring at farm and laboratory levels. This was complemented by nationwide farm-level AMU surveillance, generating essential evidence on antibiotic practices in poultry animals. In the HH sector, GTA successfully coordinated and implemented AMU PPS across 12 hospitals, producing critical insights into antibiotic use trends and prescribing practices. In parallel, capacity-building efforts enhanced skills for antimicrobial surveillance, laboratory strengthening, and inventory management, ensuring that technical expertise is more widely available at institutional, provincial, and national levels.

The project also pioneered joint surveillance that bridged human, animal, and environmental domains, an essential step towards operationalizing the One Health vision of NAP-AMR. Convening the national One Health conference created an unprecedented platform for multisectoral dialogue, bringing together stakeholders to align strategies and share lessons learnt. In addition, GTA facilitated the development and dissemination of targeted IEC materials tailored for poultry farmers, thereby contributing to improved awareness and responsible antibiotic use at the community level.

Despite several challenges, the project maintained steady progress. This was made possible through consistent coordination with government stakeholders, close technical collaboration with FHI 360, FF regional teams, in-country partners like WHO and FAO, and the adaptability of GTA's implementation team. By addressing operational barriers without compromising on deliverables and timelines, the project ensured that progress remained on track.

Conclusion

Collectively, these achievements mark a significant strengthening of Nepal's national capacity to address AMR. The evidence generated has improved understanding of AMU patterns, the systems established have expanded surveillance coverage, and the institutional capacities developed have laid the groundwork for sustained implementation. Moving ahead, embedding these systems within government structures, investing in continuous workforce development, ensuring intersectoral collaboration, and securing reliable financing will be critical to safeguarding and expanding the progress achieved. The foundation built by this project provides a strong platform for Nepal to accelerate integrated AMR surveillance and contribute to regional and global efforts in combating AMR.

Annexes

Annex I	Photo Gallery
Annex II	Activity Tracker Sheet
Annex III	Detailed Implementation Plan
Annex IV	Monitoring and Evaluation Plan

ANNEX I
Photo Gallery

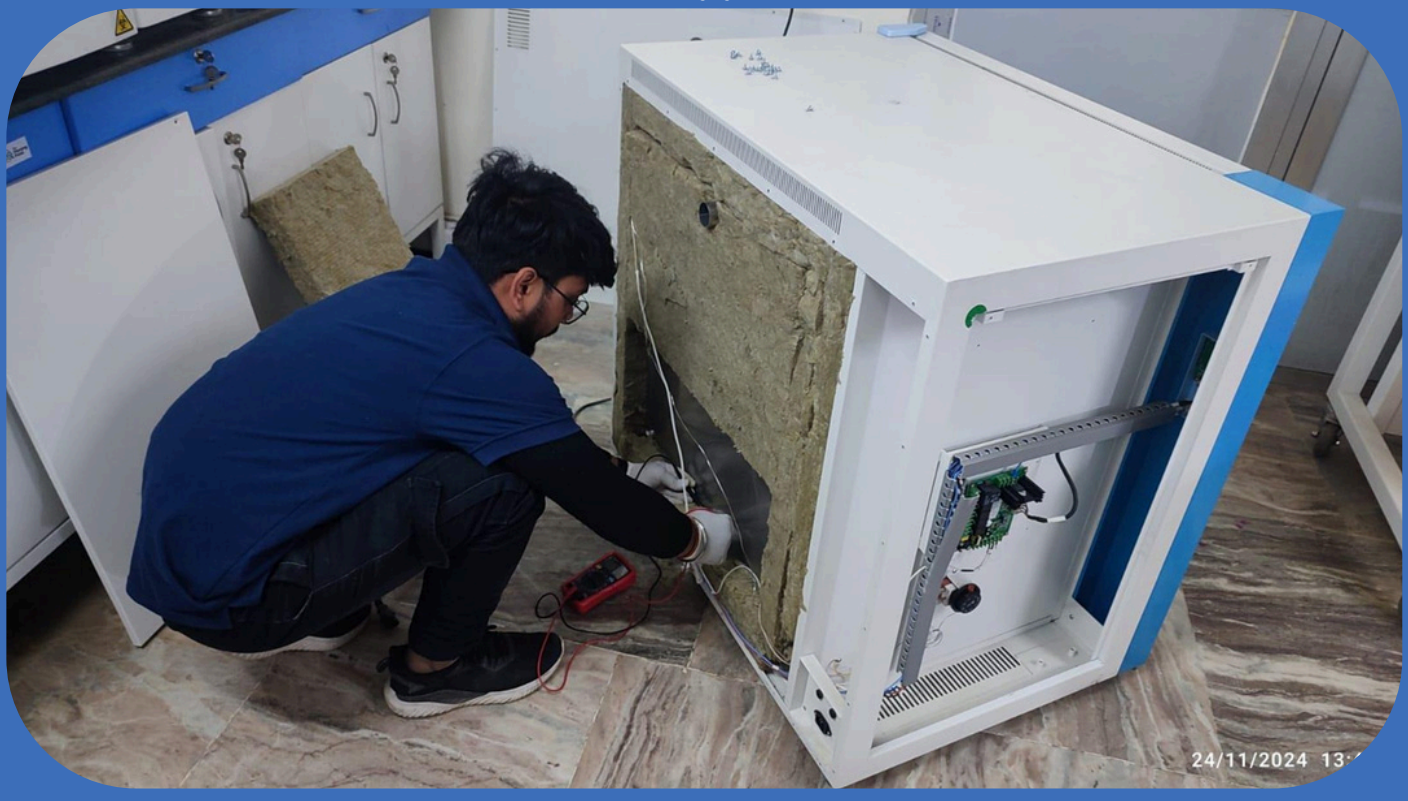
WA 1.02 Active surveillance carried out in animals

Laboratory placement training for participating veterinary laboratories conducted at Central Veterinary Laboratory, Kathmandu

Cecal sample collection from a slaughterhouse at Biratnagar, Morang

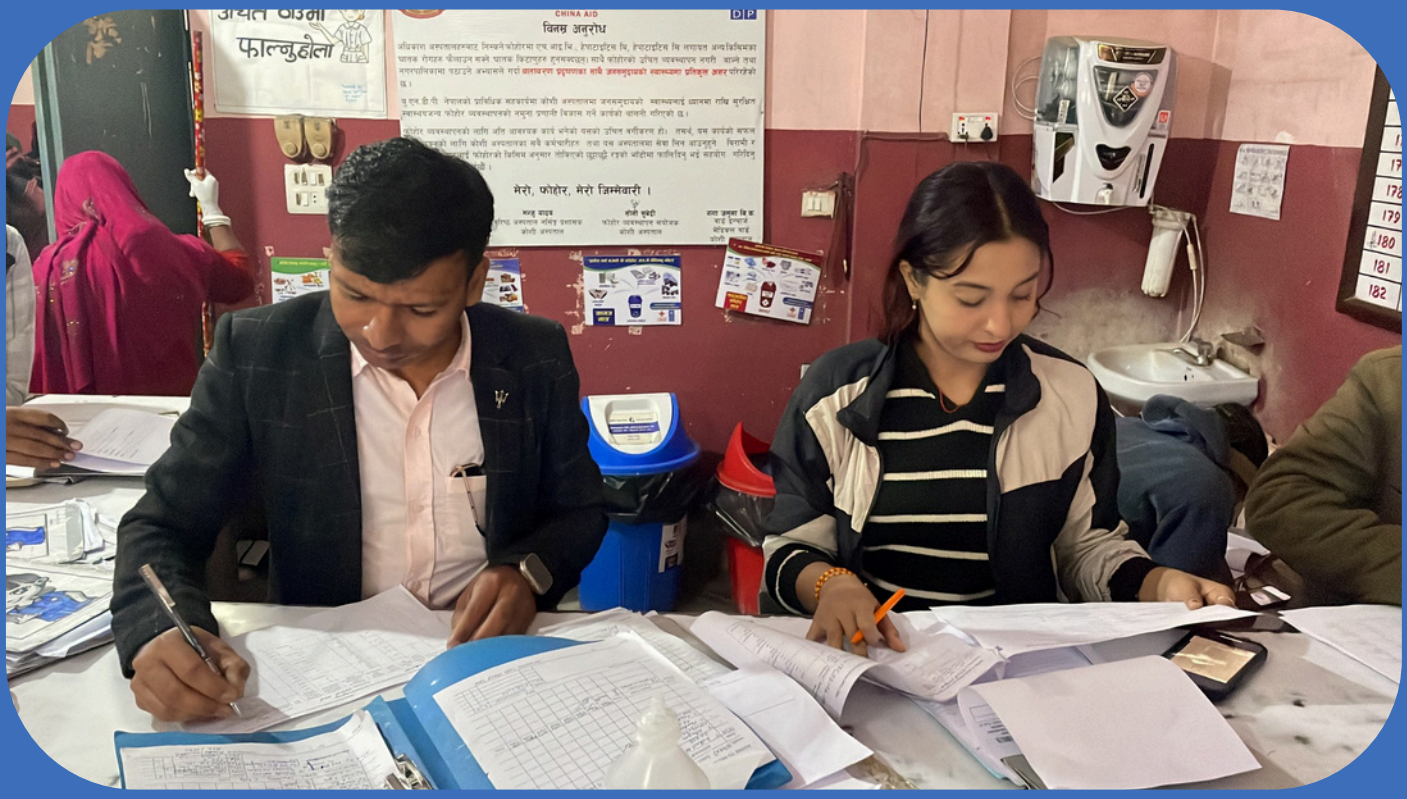
WA 1.03 Laboratories produce quality data

Orientation on inventory management at BPKIHS, Dharan



Biomedical Engineer assessing the breakdown equipment at Dadeldhura Hospital, Dadeldhura

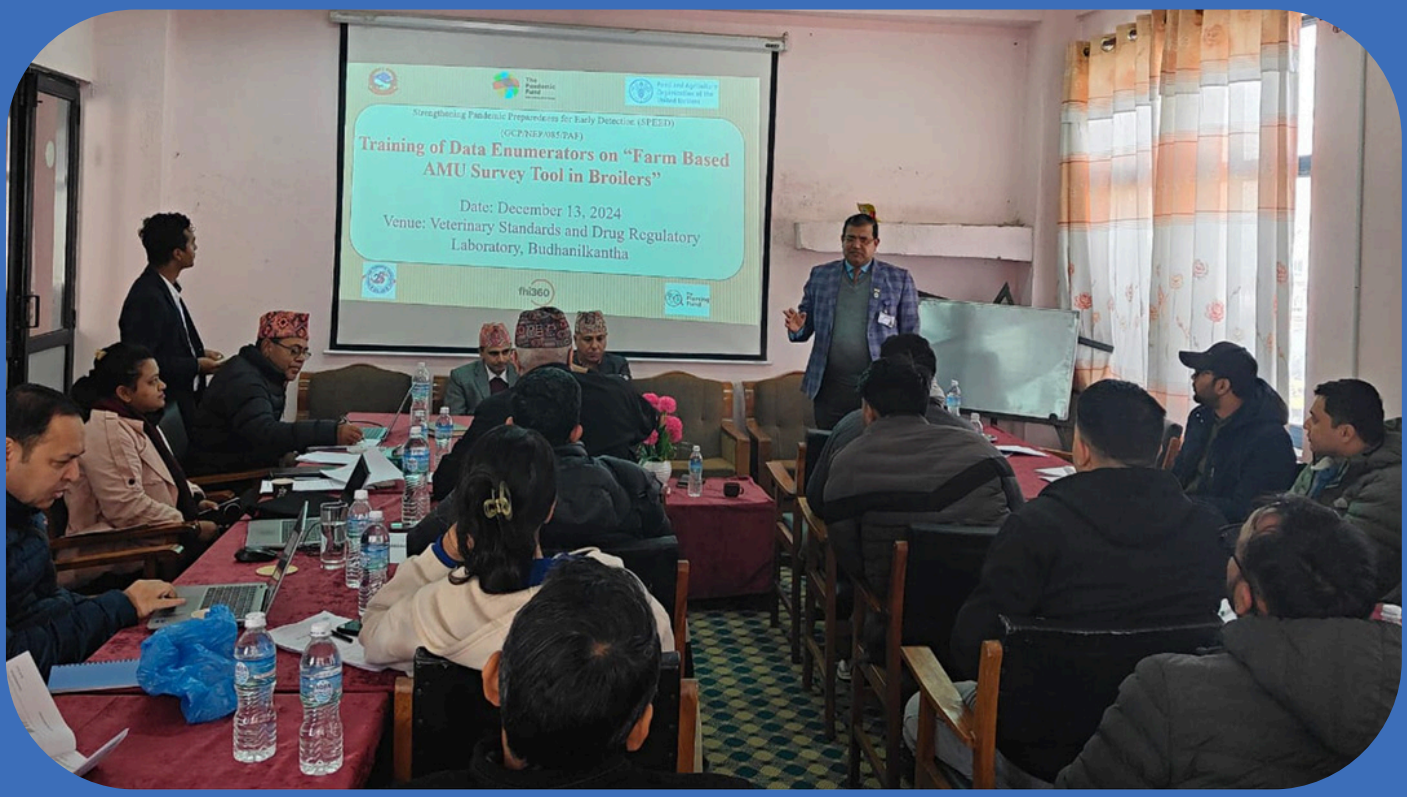
WA 1.05 AMU data gathered



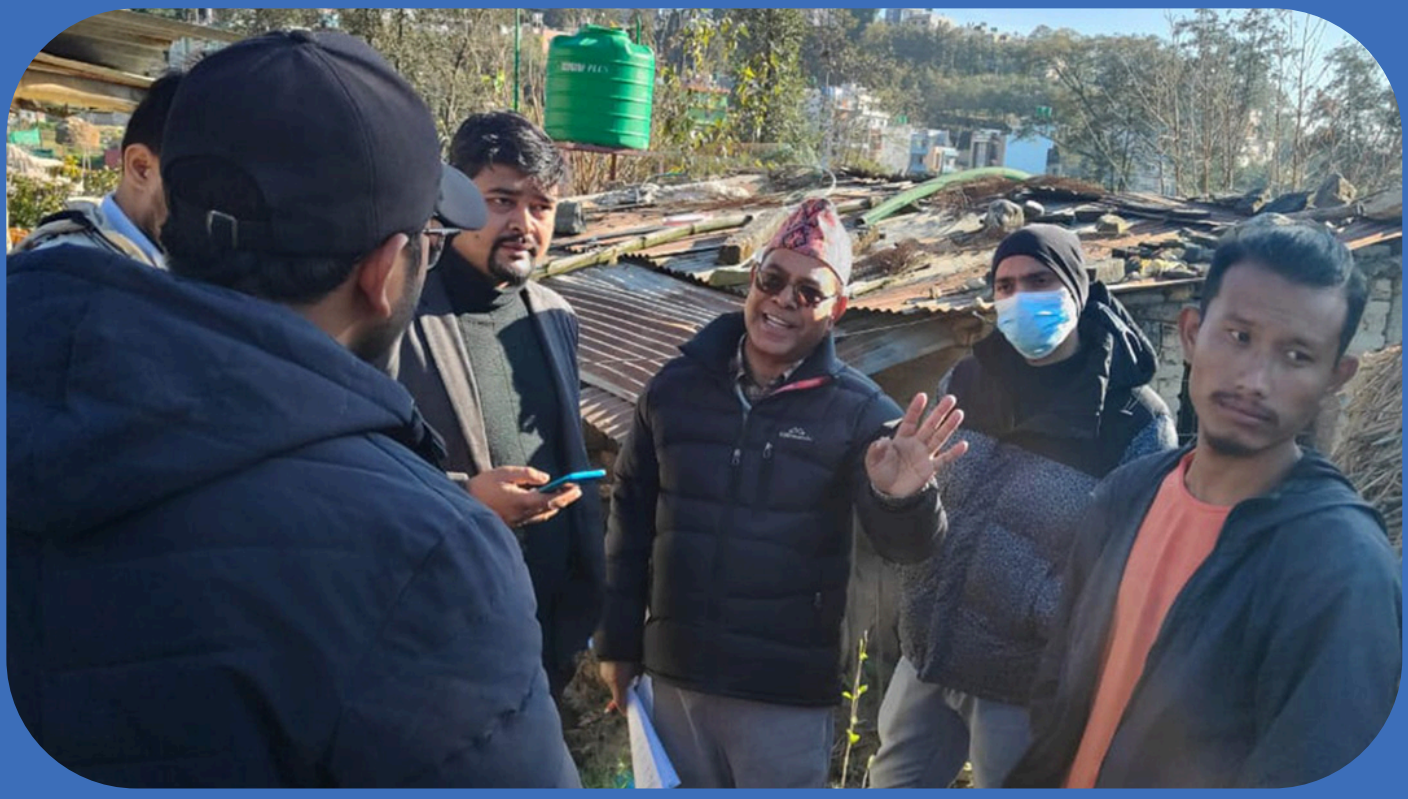
Data collection on AMU PPS at Koshi Hospital, Biratnagar

Orientation to data collectors on AMU PPS at Lumbini Provincial Hospital, Lumbini

WA 1.05 AMU data gathered



Dr. Umesh Dahal (Former DG, DLS) delivering welcome remarks during training of data enumerators for AMU survey in broiler at VSDRL, Kathmandu



On-site orientation to enumerators during pilot testing of AMU survey in broiler farm at Budanilkhantha, Kathmandu

WA 1.07 AMC data gathered

Training on using the WHO AMC Excel template for GLASS reporting at Everest Hotel, Kathmandu

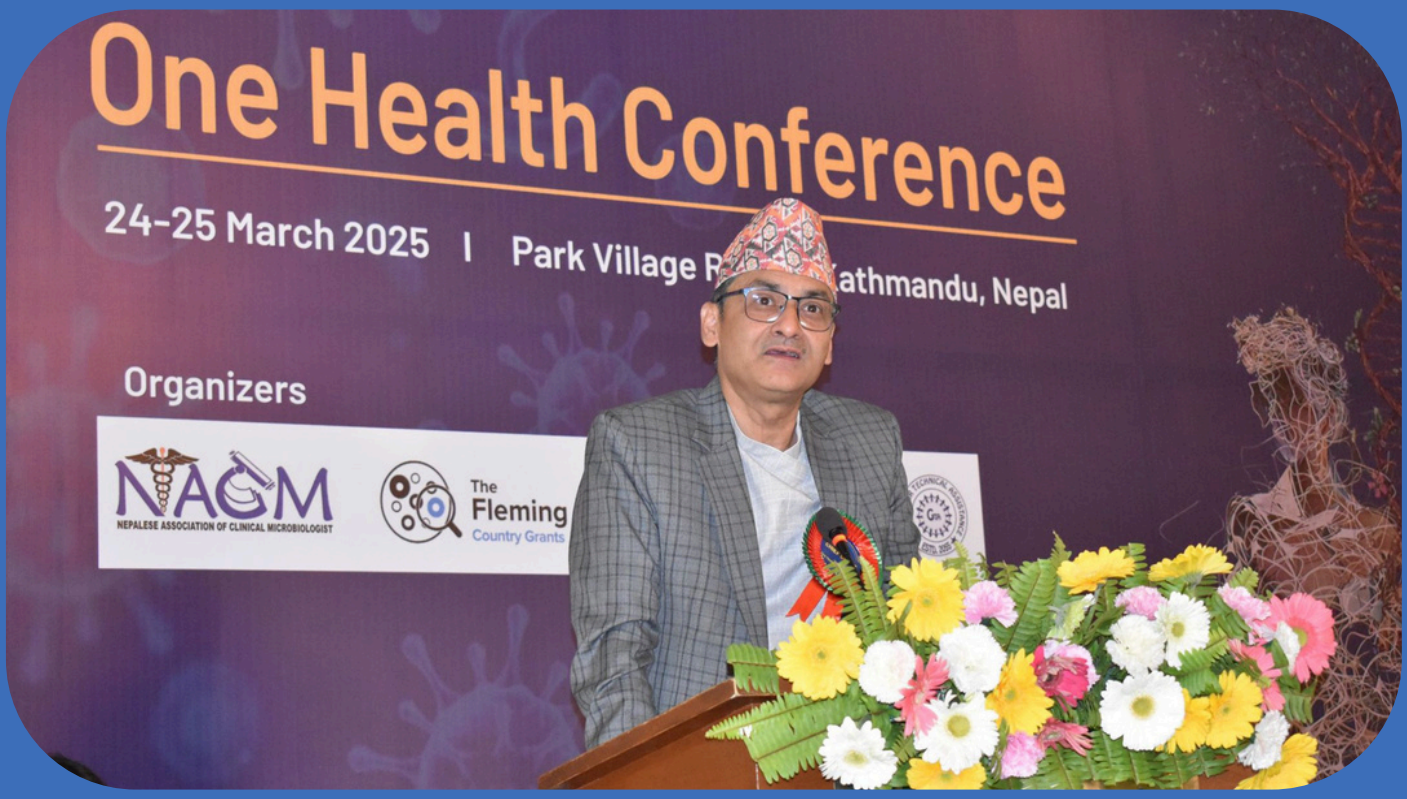
Participants of the training on the WHO AMC Excel template for GLASS reporting at Everest Hotel, Kathmandu

WA 1.09 Integrated Surveillance carried out

Orientation to human, animal, and environment sectors for conducting joint surveillance at NPHL, Kathamndu

Water sample (upstream) collection at Mulkharka, Kathmandu

WA 3.01 Surveillance reports shared in-country



Dr. Bikash Devkota (Secretary, MoHP) delivering welcome remarks at Park Village, Kathmandu

Participants attending One Health conference at Park Village, Kathmandu

WA 3.02 Surveillance reports used to inform practice

Meeting on development of One Health AMR database at QSRD, MoHP, Kathmandu

GTA's Program Director addressing participants about rational use of Antibiotics at Shangrila Blue Hotel, Lalitpur

ANNEX II
Activity Tracker Sheet

The Fleming Fund

Activity Tracker Sheet (FFCGN Phase II-GTA)

Category	Activity code	Sub-code	Item	Progress	Remarks	Learning Questions: What went well?	Learning Questions: What didn't went well
WA1.02 - Active surveillance carried out in animals	1.02.1		One round of active AMR surveillance in Poultry is implemented	ONGOING SAMPLE COLLECTION AND PROCESSING ACROSS PARTICIPATING LABORATORIES	One round of the coordination meeting was conducted in CVL on 12th December 2024. Coordination and Orientation on Active AMR Surveillance with Participating Laboratories was conducted on January 19th and 20th January 2025, at CVL. Distributed consumables for AMR surveillance to all veterinary laboratories on 26th March 2025 Conducted microbiology laboratory placement training on Active AMR Surveillance in Poultry for participating laboratories from 8th -15th June, 2025 The sample collection has been completed at CVL, NADIL, VL Biratnagar, and VL Surkhet and continues at all laboratories except VL Janakpur.	Coordination and Orientation meeting was timely conducted for regional veterinary laboratory. Consumables provided to all the laboratory in time.	Initially, there was some delay in supplying consumables to the participating laboratories due to the administrative hurdles. Once the consumables were supplies, AMR Surveillance in poultry initiated but, could not be completed in expected timeframe due to the sudden political unrest. In addition to these, surveillance at VL Janakpur has been delayed due to the transfer of trained microbiology laboratory staff, leaving the sanctioned post vacant. GTA was actively coordinating with CVL to resolve this gap, and the surveillance is expected to begin shortly.
		1.02.1.1	Coordination meeting with DLS, CVL and VSDRL				
		1.02.1.2	Coordination with participating laboratories (Poultry)				
		1.02.1.3	Conduct orientation among participating laboratories (Poultry)				
		1.02.1.4	Field Work for active surveilane in poultry (planned for 7 sites)				
	1.02.2		One round of active AMR surveillance in Cattle is implemented	NOT STARTED			The approval process for the protocol of active AMR survey in cattle required more time than initially anticipated, resulting in a delay in the initiation of survey activities. Additionally, due to budgetary constraints in Year 2, only a limited number of priority activities could be continued, and this survey activity was deferred.
		1.02.2.1	Conduct orientation among participating laboratories (Cattle)				
		1.02.2.2	Field Work for active surveillane in Cattle (initially pilot for 2 sites)				
	1.02.3		Field visit, Monitoring and supportive supervision visits (2 times)				
	1.02.4		Report writing and Sharing finding's and factsheet				
			Stakeholders meeting				
WA1.03 - Laboratories produce quality data	1.03.1		Strengthening the capacity of laboratory staff to manage the inventory of equipment and consumables	COMPLETED		Establishing contact with focal person at the participating laboratories improved efficiency and compliance for equipment maintenance and training activities.	
		1.03.1.1	Consultant for 1 orientation package development and ppt development for orientation on inventory management		Contact established with certified calibrator, Biomed engineer deployed Canducted inventory management training at different HH, AH, food, and environment sites, including,		
		1.03.1.2	Conduct training to Lab and logistics staff on equipment management and inventory management (all sector laboratories)		DoE, DFTQC, Western Regional Hospital (WRH), Surkhet VL, Dadeldhura Hospital, Koshi Hospital, BPKIHS, Narayani Hospital, Janakpur Hospital, Patan Hospital, and Bir Hospital Maintenance activities conducted at most of the sites including CVL, Koshi Hospital, VL Biratnagar, Narayani Hospital, NPHL, Bir Hospital, DFTQC, Western Regional Hospital (WRH), Dadeldhura Hospital, Seti Provincial Hospital, VL Surkhet, and VL Dhangadi		
	1.03.2	1.03.2	Annual biosafety equipment Calibration for participating laboratories and Equipment parts maintenance cost (HH, AH, food)		The calibration of biosafety cabinet was assessed at 17 sites and completed at 16 sites across the country. GTA has drafted a manual for equipment maintenance and calibration.		Upon the assessment of the biosafety cabinet at Lumbini Provincial Hospital, Butwal, it was found that the blower was not working, and upon troubleshooting, a board fault was found. Due to this reason, validation could not be performed.
WA1.05 - AMU data gathered	1.05.1		AMU PPS conducted at 12 sites	COMPLETED		Frequent communication and coordination with the focal persons at AMU PPS sites contributed for smooth execution of AMU PPS activities across all sites.	Due to cold season, the survey could not be started in the hilly area which delayed the timely completion of the survey.
		1.05.1.1	Coordination meeting with MOHP for AMU PPS		On 3rd January, 2025, debriefing meeting on AMU PPS was conducted at QSRD, MoHP.		
		1.05.1.2	Coordination meeting among 12 sites for AMU PPS (HH)		Coordination meeting conducted at 7 sites Completed orientation at all AMU PPS sites		
		1.05.1.3	Conduct orientation among hospital staffs on AMU PPS for all sites (12)		Completed data collection at all AMU PPS sites Conducted dissemination activities at all		
		1.05.1.4	Data Collection for AMU PPS		sites		
		1.05.1.5	Site specific dissemination (HH)				
	1.05.2		Farm Level AMU surveillance in Poultry in seven provinces (AH)			The timely completion of orientation, enumerator selection and site selection facilitated the early start of the survey.	
			Coordination meeting with VSDRL and relevant stakeholders (2)		Conducted Coordination meeting with VSDRL and DLS		
		1.05.2.1	Conduct Staff orientation for farm level AMU surveillance (AH) - Virtual		Conducted orientation to field enumerators on 13th and 16th of December in VSDRL		
		1.05.2.2	Data collection		Completed data collection on farm level AMU surveillance at all 660 farms.		
		1.05.2.3 1.05.2.4	Monitoring and supportive supervision in Poultry		GTA, in close collaboration with VSDRL, FAO & regional veterinary Laboratories conducted field monitoring and supportive supervision throughout the data collection period.		
		1.05.2.5	Training for enumerators regarding AMU surveillance for dairy cattle				
		1.05.2.6	Data collection				
		1.05.2.7	Monitoring and supportive supervision in cattle				
	1.05.3		Report Writing + Sharing finding's and factsheet		AMU PPS clean set of data, analyzed results, and report has been shared with FHI 360 Regarding AMU survey in poultry, clean set of data and analyzed results has been shared with FHI 360. Report writing is ongoing and will be submitted by the end of November		
WA1.07 - AMC data gathered	1.07.1		Quality HH AMC data gathered and reported (HH)	COMPLETED	Conducted 2 days training on using WHO antimicrobial consumption (AMC) excel template for data collection, entry, and reporting to GLASS to pharmaceutical manufacturers, retailers, wholesalers, vendors, and importers on 18th and 19th March 2025		
		1.07.1.1	Coordination meeting with DDA for stakeholder engagement, and discussion about data reporting formats				
		1.07.1.2	Training for DDA staffs (20)				
		1.07.1.3	Training for Manufacturers (80)				
		1.07.1.4	Training for Importers (90) - 2 trainings				
WA1.09 - Integrated surveillance carried Out	1.09.1		AMR data produced from various approaches to integrated surveillance including tricycle (OH)	ONGOING DATA COLLECTION ACROSS SECTORS			A delay in obtaining ethical approval from Bir Hospital due to the unavailability of a reviewer from the hospital's ethics review committee. The monthly estimated number of rectal swabs from PMWH has not been met due to a lower-than-expected number of eligible participants at PMWH (≥37 weeks of gestation, residing in Kathmandu valley) and the reluctance of pregnant women to provide rectal swabs, driven by concerns about possible risks such as induced labor. There was a slight delay in performing the second round of sampling at CVL due to the temporary staffing gap responsible for microbiological processing and unstable political conditions in the country.
		1.09.1.1	Coordination meeting with all sectors for development and finalization of protocol for integrated surveillance, site selection (HH, AH, environment and relevant stakeholders)		Developed draft of proposal and shared with government stakeholders Conducted inception meeting 7th January 2025 with active participation from QSRD, NPHL, CVL, DoE, FAO, and WHO Conducted discussion meeting on 10th January 2025 among tecnical working group (including participants from NPHL, CVL, DoE, FAO, and WHO) Received NHRC ethical approval on 8th May, 2025 Drafted list of consumables in coordination with government and the FFGCN team at FHI 360, procured on March, and distributed to NPHL, CVL, and DoE shortly.		
		1.09.1.2	Protocol Finalization Workshop		Conducted protocol finalization workshop on 20th February 2025. Based on workshop and sector specific inputs, proposal, SOP and questionnaire was revised.		
		1.09.1.4	Orientation on survey protocol		On 14th March, 2025, meeting and orientation to human sampling sites (Bir Hospital, Paropakar Maternity and Women's Hospital and Kathmandu Model Hospital) was conducted at NPHL. On 6th - 11th of July 2025, microbiology training for conducting joint surveillance was held at Department of Environment. On 19th August, 2025, first debriefing meeting was conducted at NPHL, with active participation across human, animal, and environment sectors.		
		1.09.1.5	Data collection		The original surveillance plan outlined three sampling rounds aligned with July, August, and September 2025. However, delays in initiating field activities required shifting to the Nepali calendar. Sampling commenced in Shrawan 2082 (late July 2025). By September 2025, two rounds had been completed; the third round is still ongoing. As the data collection is still ongoing, the FFCGN team at FHI 360 will continue the support for surveillance and report writing.		
	1.09.2		Report Designing and Editing				
WA3.01 - Surveillance reports shared in-country	3.01.1	3.01.1	AMR/AMU/AMC data shared with the sites, respective stakeholders and practictioners (HH, AH, Aqua, Environment, Food)				
		3.01.1.1	National Dissemination of AMR AMU AMC (associated cost - Indicative of participants outside of the Kathmandu Valley)	NOT APPLICABLE			
		3.01.1.2	National Level One Health Conference on AMR AMU AMC (Support to government)- 2 days (2 day conference)	COMPLETED	One Health conference was conducted on 24th and 25th March, 2025. The conference was a significant platform for exchanging knowledge, exploring new approaches, and building collaborative frameworks for addressing antimicrobial resistance.		
WA3.02 - Surveillance reports used to inform practice	3. 02. 1		More rationale use of drugs by selected service providers and users (AH)	COMPLETED			
		3.02.1.1	Coordination meeting with central Vet. Hospitals and vet. Hospital of 7 provinces		Not applicable		
		3.02.1.2	Workshop for IEC material finalization (2) - vet, para. Vet. Farmers as applicable		Conducted workshop for IEC material development on 02 March 2025 with active participation of government officials, poultry practioner, and farmers		
		3.02.1.3	Printing and Designing of IEC Materials		Finalized IEC materials in close consultation with relevant stakeholders, printed IEC materials and distributed to farmers and government insitutions		
		3.02.1.4	Printing and Designing of Treatment Guidelines (AH)		Not applicable		
		3.02.1.5	IT and consultancy support for stregthening AMR secretariat and NCC for developing One health database, and website		Conducted One Health AMR database development meeting on 29th December, 2024 Consultants have been hired and work is underway on the architectural and detailed implementation plans. IT equipment has been delivered to the Quality Standard and Regulation Division (QSRD) at the Ministry of Health and Population (MoHP).		

ANNEX III
Detailed Implementation Plan

FFCGN_GTA_Detailed Implementation Plan

Activity	Responsible person	Steps	Detailed Description	Timeline	ExpectedOutput	Result Sought	Support Needed	Deadline
WA1.02 Active AMR surveillance in poultry and cattle Objective: To conduct one round of active AMR surveillance in poultry and cattle across seven provinces, with comprehensive data collection, analysis, and dissemination.	DLS, CVL, Participating labs	Coordination	• Prepare agenda and materials. • Schedule meeting dates • Meeting with DLS, CVL • Identify key lab representatives • Meeting with participating laboratories • Share roles and responsibilities	M1 M1 M2 M2 M2 M2	• Established a focal person • Documentation of meeting outcomes. • Refined working protocol • Updated inventory list in lab	• Stakeholders informed about AMR status in poultry and cattle. • Improved AMR awareness and control measures.	Final Working protocol from FHI	Q2,2025
		Initiation Of Active AMR Surveillance in Poultry and Cattle.	Surveillance Sites: Sample collection sites are identified. Site Selection Criteria: In high chicken-producing regions and high cattle farming area. -Ensure geographic coverage Bacteria selection: Selection of 4-5 bacteria that can cause zoonotic and human infections. Antimicrobial selection: Selection of 8-12 antimicrobials (covering as many antimicrobial classes as possible) that have significance in both animals and humans. Finalizing surveillance protocol. Finalizing lab SOP: Design protocol for sample collection, sample transport, culture, identification, and AST tailored as per the working protocol. Training for lab staff: Train lab staff for lab investigation as per working protocol. Training for field teams: Train field workers for data collection.		• Defined sample site. • Defined study bacteria. • Defined study antimicrobials. • Defined AST protocol. • Trained lab staffs		CVL, DLS, Veterinary Assistant needed.	
		Conduct Active AMR surveillance in poultry.	Sample Collection: • Design a sampling plan for broilers and layers. • Design a sampling plan for cattle. • Define the sample to be collected • Prepare a sample collection form	M3-M9	• Defined sample collection SOP • Sample data • AST reports		SOP for lab	

			• Prepare SOP for sample collection and transport • Pilot sample collection in each sample site for • cattle. • Train sample collection staff Prepare a sampling timetable Sample processing: • Conduct sample processing and AST in labs. Report of AST.					
		Data collection and analysis	Data collection and analysis: Collect AST and sample data from the • participating labs. • Compile the raw data from the participating labs. • Curate the data. • Analysis of compiled data. • Statistical analysis of final data. • Deriving findings of the AMR surveillance.	M3-M9	• Raw AMR data from participating labs • Curated data. • Data analysis result. • Statistical findings. • Findings of the AMR surveillance.			
		Dissemination Of AMR Surveillance Results	• Prepare a comprehensive report detailing findings from AMR surveillance. • Organize dissemination workshops with stakeholders. Publication of the findings	M10-M11	• Report of the AMR surveillance. • Published article on findings of the surveillance.			
WA1.03: Laboratories Produce Quality Data: Objective: To strengthen the capacity of laboratory staff to manage the inventory of equipment and consumables (microbiology) for producing quality data.	NPHL, GTA, participating labs	Coordination	• Prepare agenda and materials. • Schedule meeting dates • Meeting with NPHL on inventory management. • Discuss package development and SOP needs. • Meeting with lab staff and/or storekeepers of all participating labs	M2	• Established a focal person in NPHL. • Established a focal person in participating lab • Updated inventory list • Defined minimal inventory requirements.	• Microbiology equipment management and inventory processes standardized across sites. • Improved efficiency and compliance.		
		Developing tools and packages	• Develop and refine tools for inventory management. • Develop and review draft SOP with stakeholders. • Finalize SOP for inventory management.	M3-M4	• Tools used for inventory management. • SOP for inventory management.			
		Recording of faulty equipment	• Recording of the required or faulty equipment and/or spare parts.	M6-M14	• Full functioning equipment and inventory in participating labs.			

			• Reporting to the FHI for procurement.				purchase	
		Orientation and training on logistic management	• Develop and review draft orientation package with stakeholders. • Training lab staff including storekeepers about standard inventory management systems. • Training on manual inventory management including the use of inventory cards, inventory ledger, spreadsheets, and manual audits. • Hands-on sessions on inventory management system. • Print and distribute SOP to participating labs. • Upload digital versions to the NPHL portal.	M5-M9	• Trained lab staff in logistics and inventory management. • Established a manual inventory management system. • SOP disseminated to relevant sites.		FHI facilitation	
WA1.03: Laboratories Produce Quality Data:		Calibration	• Initial calibration of the equipment before the start of the surveillance. • Train staffs on reporting procedures. • Establish reporting template. • A monthly update on the working status of equipment and maintenance needs. • Ensure timely calibration of the equipment. • Regular performance evaluations of equipment to identify potential issues. • Prompt maintenance of the equipment. • Consultant support for maintenance. • Establish a clear communication channel for reporting issues and requesting support. • Monitor and document all maintenance activities and outcomes. • Implement preventive maintenance measures to extend equipment lifespan. • Provide training to staff on proper equipment usage and maintenance procedures. • Regularly review and update maintenance protocols to ensure optimal performance.	M2-M14	• Calibrated and functioning equipment. • Updated list of working status of equipment of participating labs. • Regularly updated and reviewed monthly status reports.	• Consistent and optimal use of microbiology equipment. • Reduced downtime and equipment failure.	Biomed engineer	
WA1.05: AMU Data Gathered: Objective: To conduct Antimicrobial Use (AMU) Point	MoHP, GTA, Participating Sites	PPS preparation	• Finalize the list of AMU PPS sites in collaboration with QSRD, and MoHP. • Obtain NHRC approvals for ethical compliance. • Meeting with 12 AMU PPS sites.	M2-M4	• Defined PPS sites • Ethical approval. • Established a focal person in 12 AMU PPS sites	• Enhanced understanding of AMU practices. • Data-driven improvements in antimicrobial use.	FHI	Q3, 2025

Prevalence Survey (PPS) at 12 sites.								
		Orientation	• Preparation of orientation ppt • Conduct detailed orientations and site-specific • training sessions for GTA staff and consultants. • Distribute relevant materials • Schedule orientations at each site. Conduct detailed orientations and site-specific training sessions on AMU PPS in 12 sites.	M4	• Trained on-site lab staff • Established AMU PPS system		FHI facilitation	
		Conduct AMU PPS survey	• Deploy 4 pharmacists in 12 sites : Fill the AMU WHO form for data collection in each site for 6 days. Disseminate weekly preliminary data analysis result on 7th day in the site.		• AMU PPS survey data from 12 sites			
		Data collection and analysis of AMU PPS	Data collection and analysis: • Collect data from all 12 sites. • Compile the raw data from 14 sites. • Curate the data. • Analysis of compiled data. • Statistical analysis of final data. • Deriving findings of the AMU PPS.	M10-M12	• Raw AMU PPS data from • participating labs • Curated data. • Data analysis result. • Statistical findings. Findings of the AMU PPS.		Data analyst	
	AH Team, GTA	Dissemination Of AMU PPS Results	• Prepare a comprehensive report detailing findings from AMR surveillance. • Organize dissemination workshops with stakeholders. • Publication of the findings	M12-M14	• Report of the AMR surveillance. • Published article on findings of the surveillance.		Report Writing consultant	
AMU survey in poultry and AMU pilot survey in dairy cattle Objective: To conduct AMU survey in poultry and pilot survey in cattle across selected sites, with comprehensive data collection, analysis, and dissemination.	VSDRL, DLS, GTA	Coordination	• Meeting with VSDRL and DLS to update the • survey plan and obtain site approvals. • Finalization of survey sites in poultry and AMU sites. Obtain approval for survey sites.	M2-M5	• Established a focal person • Refined working protocol	• Improved understanding of AMU in poultry and dairy cattle. Data-driven • recommendations for AMU practices.	FHI facilitation	Q3, 2025
		AMU survey	• Initiate the AMU survey in poultry to monitor and	M6	• Start of the survey system			

			practice. • Initiate the pilot AMU survey in dairy animals concurrently.	M9				
		Data collection and analysis	Data collection and analysis: • Data collection from poultry once the survey is initiated. • Data collection from cattle once the pilot AMU survey is initiated. • Compile the raw data from the surveys. • Curate the data. • Analysis of compiled data. • Statistical analysis of final data. • Deriving findings of the surveys.	M11-M13	• Raw survey data from study sites • Curated data. • Data analysis result. • Statistical findings. • Findings of the surveys.		Data analyst support	
		Dissemination Of Survey Results	• Prepare a comprehensive report detailing findings from the survey. • Organize dissemination workshops with stakeholders. • Publication of the findings	M11-M13	• Report of the survey. • Published article on findings of the survey.		Writing consultant	
WA1.07 AMC data gathered Objective: To gather and report Quality Human Health (HH) AMC data for 2023 and 2024	DDA, GTA, Stakeholders	Coordination	• Meetings with DDA to discuss data recording formats and software requirements. • Meetings with manufacturers, importers, and distributors. • Engage and establish data collection protocols.	M1-M3	• Established a focal person • Refined working protocol	• Quality AMC data available for national and global reporting. • Improved antimicrobial consumption tracking.	FHI facilitation	Q3, 2025
		Data collection	• Develop and distribute data collection tools • Initiate the collection of AMC data for FY 2024 using an Excel template with input from all relevant parties. • Obtain AMC data for the year 2024 from manufacturers and importers in an appropriate format. • Report the collected data to DDA for inclusion in the Global Antimicrobial Resistance and Use Surveillance System (GLASS). • For FY 2024, collect AMC data using specialized software in the required format from manufacturers and importers. • Compile and submit evidence of reported AMC	M1-M14	• AMC data		Pharmacist	

			data to GLASS, including photos or emails, within a specified deadline. • Ensure timely and accurate reporting of AMC data to maintain compliance with GLASS requirements.					
WA1.09 Integrated surveillance carried out Objective: To effectively carry out integrated surveillance for Antimicrobial Resistance (AMR) by developing, implementing, and analyzing data from various approaches, including the Tricycle (One Health) method, ensuring the production of high-quality AMR data.	GTA, MoHP, Stakeholders	Coordination	• Meeting with representatives from HH, AH, the environment sector, and other stakeholders to revise, adapt • Develop and finalize a comprehensive protocol for integrated surveillance. • Selection and finalize study sites.	M1-M3	• Established a focal person • Refined working protocol • Defined Study sites	• Enhanced understanding and coordination of AMR surveillance across sectors. • Data-driven policy and practice improvements.	FHI facilitation	Q3, 2025
		Ethical approval	• Approval from NHRC for ethical compliance	M5-M7	• Ethical approval		FHI facilitation	
		Integrated surveillance	• Ensure all processes, including sample collection, transportation, processing, and reporting, are thoroughly documented. • Implement the integrated surveillance study as per the finalized protocol.	M8-M11	• Start of the survey system			
		Data collection and analysis	Data collection and analysis: • Data collection from different sectors once the surveillance is initiated. • Compile the raw data from the surveillance. • Curate the data. • Analysis of compiled data. • Statistical analysis of final data. • Deriving findings of the surveillance.	M8-M13	• Raw surveillance data • Curated data. • Data analysis result. • Statistical findings. • Findings of the surveillance.		Data analyst support	
		Dissemination Of Surveillance Results	• Prepare a comprehensive report detailing findings from the surveillance. • Organize dissemination workshops with stakeholders. • Publication of the findings	M14	• Report of the surveillance. • Published article on findings of the surveillance.		Writing consultant	

WA3.01: Surveillance Reports and Data Sharing Objective: To ensure effective dissemination and utilization of AMR (Antimicrobial Resistance), AMU (Antimicrobial Use), and AMC (Antimicrobial Consumption) data among stakeholders, practitioners, and the public through various channels, including online platforms, printed materials, and workshops and conference.	GTA, IT Team, Stakeholders	Workshops	• Workshop at province level to share AMR/U/C data • Workshop at national level to share AMR/U/C • Actively share AMR/U/C data through workshops • Use workshops as key platforms for information exchange and discussion among stakeholders.	M11-M12	• Disseminated data to relevant stakeholders	• Enhanced accessibility and visibility of AMR/AMU/AMC data. • Increased stakeholder engagement and awareness	FHI facilitation	Q3, 2025
		Bulletin	• Design bulletin to incorporate AMR/U/C data • Print bulletin • Regularly disseminate the AMR newsletter and AMU bulletin.	M4-M14	• Bulletin on AMR/U/C		Editing and Designing Consultant, Offset print designer	
		IEC materials	• Include information, education, and communication (IEC) materials distribution. • Design and print IEC materials. • Consistently repeat dissemination efforts to maintain high levels of awareness and knowledge.	M6-M11	• IEC materials		Editing and Designing Consultant, Offset print designer	
		Hosting content	• Host content related to AMR/U/C on respective departmental websites. • Share and upload updated data to relevant stakeholders to enhance accessibility and engagement. • Monitor website updates and accessibility	M4-M12	• Updated data hosting in departmental portals.			
AMR/U/C data sharing with stakeholders across sectors (Water, food, environment)		AMR/U/C dissemination	• Disseminate the findings of AMR/U/C study	M10-M12	• Dissemination of findings	• Enhanced accessibility and visibility of AMR/U/C data. • Increased stakeholder engagement and		Q3, 2025

						awareness		
		Conference	• Organize a One Health conference to facilitate wider sharing of information.	M10-M12	• One Health conference		FHI facilitation	
		Bulletin	• Design bulletin to incorporate AMR/U/C data • Print bulletin • Regularly disseminate the AMR newsletter and AMU bulletin.	M4-M14	• Bulletin on AMR/U/C		Offset print designer	
		IEC materials	• Include information, education, and communication (IEC) materials distribution. • Design and print IEC materials. • Consistently repeat dissemination efforts to maintain high levels of awareness and knowledge.	M6-M11	• IEC materials		Offset print designer	
WA3.02: Surveillance Reports Used to Inform Practice Objective: Promote the rational use of drugs among selected service providers and users by utilizing surveillance reports, providing treatment guidelines, and conducting targeted training and feedback activities.	AH	Coordination	• Meeting with CVH, medical experts, and hospitals • Review and finalize comprehensive treatment guidelines based on AMR surveillance data.	M5-M9 M8-M11	• Established a focal person • Treatment guidelines		FHI facilitation	Q3, 2025
		Treatment guideline and data review	Treatment Guidelines: • Ensure guidelines are formatted for both print • and mobile app compatibility. Mobile app integration: Upload treatment guidelines into a designated mobile application. • Offset printing of treatment guidelines • Training for prescribers on accessing and utilizing • the guidelines. • Ensure convenient access to standardized protocols for veterinary practitioners. Review data from each hospital and provide feedback	M8-M9	• Updated treatment guideline dissemination in printed form. • Guidelines accessible via. Mobile app.	• Prescribers have easy access to standardized treatment guidelines. • Increased adherence to rational drug use practices.	IT consultant	

		Workshops with Veterinary Practitioners and Agro Vet Owners on Promoting Rational Use	• Identify Participants: Select veterinary practitioners and Agro vet owners who will benefit from the workshops. • Develop Curriculum: Create workshop materials focused on rational drug use and AMR. • Schedule and Venue: Arrange dates, secure venues, and handle logistics for the workshops. • Conduct Workshops: Facilitate interactive sessions, presentations, and Q&A segments to engage participants. • Distribute Materials: Provide workshop attendees with relevant materials and collect feedback for future improvements.	M8-M9	• Biannual workshops conducted. • Trained veterinary practitioners and Agro vet owners • Dissemination of findings	• Enhanced knowledge and implementation of rational drug use practices. • Reduction in inappropriate drug prescriptions and usage.		
		Review and Analyze AMU Data from Hospitals and Provide Feedback	Meetings for AMU Data Collection: • Meetings with central veterinary hospitals and one veterinary hospital in each of the seven provinces. • Data Collection: Gather AMU data from participating hospitals on a quarterly basis. • Data Analysis: Analyze the collected data to identify usage patterns, trends, and areas needing improvement. • Feedback Report Preparation: Create detailed feedback reports highlighting key findings and recommendations. • Disseminate Feedback: Share the feedback reports with hospital administrations and prescribers. • Recommend Strategies: Suggest actionable strategies based on the analysis to improve AMU practices.	M8-M11	• Quarterly AMU data reviewed and analyzed. • Feedback reports distributed to hospitals.	• Hospitals receive actionable insights to optimize antimicrobial use. • Improved antimicrobial prescribing practices.		
		Share AMU Surveillance Findings for Improvement in Prescribing and Use	• Compile Findings: Aggregate AMU surveillance data into comprehensive reports. • Dissemination Channels: Share findings through the CVL and VSDRL websites, newsletters, and workshops. • Stakeholder Engagement: Organize meetings or forums to discuss the findings with key stakeholders. • Monitor Implementation: Track the adoption of recommendations from the surveillance findings.	M12-M14	• AMU surveillance findings widely shared. • Integrated into prescribing and usage practices.	• Improved prescribing practices informed by up-to-date surveillance data. Enhanced rational • use of antimicrobials, contributing to the fight against AMR.		

			• Update Reports: Regularly update surveillance findings with new data and insights.					
		IT support	Collaboration for IT Support: • Provide IT support for strengthening the AMR secretariat and National Coordination Committee (NCC). • Develop a One Health database, dashboard, and website.	M4-M14			IT consultants	
Report writing			A comprehensive report including technical and financial details	M13-M14	• Project report		Writing consultant	Q3, 2025

ANNEX IV
Monitoring and Evaluation Plan

Fleming Fund Country Grant Nepal (FFCGN), Group for Technical Assistance (GTA)

Monitoring & Evaluation Plan

August 2024

Contents

Acronyms

AMR	Antimicrobial Resistance
AMC	Antimicrobial Consumption
AMU	Antimicrobial Use
AH	Animal Health
DDA	Department of Drug Administration
DFTQC	Department of Food Technology and Quality Control
DoEnv	Department of Environment
FF	Fleming Fund
FFCGN	Fleming Fund Country Grant for Nepal
GLASS	Global Antimicrobial Resistance and Use Surveillance System
GESI	Gender Equity and Social Inclusion
GTA	Group for Technical Assistance
HH	Human Health
NHRC	National Health Research Council
NPHL	National Public Health Laboratory
PPS	Point Prevalence Survey
RG	Regional Grantees
QSRD	Quality Standard and Regulation Division
VSDRL	Veterinary Standards and Drug Regulatory Laboratory
WHO	World Health Organization
GLAMR	Global Learning in Antimicrobial Resistance
IEC	Information, Education, and Communication

1 Introduction

1.1 Purpose of this plan

The purpose of this Monitoring and Evaluation (M&E) plan is to outline the systematic approach for assessing the performance and impact of the FFCGN, ensuring alignment with its objectives, and guiding informed decision-making. This plan is prepared by Group for Technical Assistance (GTA) to serve as a comprehensive guide for both internal and external stakeholders, including project managers, FHI 360, and Mott MacDonald Limited / Secretary of State for Health of the United Kingdom.

The primary audience for this M&E plan includes project staff responsible for implementation, donors interested in tracking progress and outcomes, and key stakeholders across all sectors (HH, AH, etc). The plan's purpose is to ensure that all involved parties can effectively monitor key indicators, assess progress, measure success, and make necessary adjustments based on data-driven insights. This M&E framework ultimately aims to enhance accountability, transparency, learning, and sustainability throughout the project's life.

1.2 Organisation background

Group for Technical Assistance (GTA), a pioneering non-profit organization established in Nepal in 1998, stands at the forefront of public health, education, environment, and development initiatives. With a community-centered approach, GTA's seasoned experts bring extensive experience across a wide range of sectors, including public health, epidemiology, vaccination, antimicrobial stewardship (AMS), One Health, and more. GTA's comprehensive expertise also encompasses quality assurance, organizational development, systems strengthening, health supply chain management, and capacity building.

GTA's success is bolstered by strong collaborations with national bodies such as the Ministry of Health and Population (MoHP) and the Nepal Agricultural Research Council (NARC), as well as international partnerships with esteemed organizations like WHO, UNICEF, and Henry Ford Health. This vast network enables GTA to influence and support critical health and development efforts both locally and globally.

In the realm of Antimicrobial Resistance (AMR) and AMS, GTA has over a decade of proven experience, having implemented numerous projects to enhance health service quality at both the hospital and community levels. Their partnership with Henry Ford Health on over 10 AMR and Infection Prevention and Control (IPC) projects, including the training of more than 750 healthcare workers, underscores their capability to deliver impactful, large-scale programs.

GTA's track record includes innovative initiatives such as the Global Learning in Antimicrobial Resistance (GLAMR) and WHO Toolkit Assessments, demonstrating their adaptability to evolving public health challenges. Their commitment to improving healthcare services in Nepal is evident in their strategic and effective project execution.

As a trusted partner of FHI 360, GTA plays a critical role in field implementation, logistics, and management, focusing on generating high-quality data on AMR, Antimicrobial Use (AMU), and Antimicrobial Consumption (AMC). Through detailed monitoring and evaluation plans, GTA ensures that this data is effectively analyzed and communicated to decision-makers, driving meaningful improvements in public health outcomes.

Objectives of the M&E Plan

a. To Track timely completion of planned activities such as AMR and AMU surveillance in animal health, human health, and environmental sectors. The monitoring process will identify bottlenecks and risks early to inform adjustments in the implementation approach.

b. To Measure the extent to which the project contributes to improved understanding and practices regarding AMR, AMU, and AMC at national and sub-national levels. The evaluation will focus on the impact of surveillance data on policy-making and practice changes among stakeholders.

c. To Ensure data collected across surveillance sites is accurate, consistent, and reliable. A focus will be placed on strengthening digital tools and processes for real-time data collection, management, and analysis.

d. To Foster an adaptive management approach where project strategies are refined based on evidence and insights from the M&E system. Lessons learned will be documented and shared to improve program implementation.

e. To Provide key stakeholders, including government agencies, health professionals, and development partners, with timely information on project progress, challenges, successes, and recommendations for future programming.

Project Tile: Fleming Fund Country Grant for Nepal Phase II

Starting Date	August 1, 2024 – September 30, 2025
Duration	14 months
Prime recipient	FHI 360, Nepal
Sub-recipient	Group for Technical Assistance
Target Area	HH, AH, EN, Food, Environment
Beneficiaries	Stakeholders
Funding Agency	Mott MacDonald Limited / Secretary of State for Health of the United Kingdom
Goal	To effectively manage and mitigate AMR by producing and disseminating high-quality data on AMR, AMU, and AMC in Human health (HH), Animal Health (AH), and the environmental sector, thereby informing and influencing policy and practice for sustainable and responsible antimicrobial use.

2 Results Framework

LEVEL	DESCRIPTION		
Goal	To effectively manage and mitigate AMR by producing and disseminating high-quality data on AMR, AMU, and AMC in Human Health (HH), Animal Health (AH), and the environment sector, thereby informing and influencing policy and practice for sustainable antimicrobial use.		
Impact	Improved AMR, AMU, and AMC surveillance systems and practices across human, animal, and environmental health sectors in Nepal, contributing to more effective and informed policy interventions at the national and local levels.		
Outcome	Quality AMR, AMU, and AMC data generated and utilized for decision-making.	Effective dissemination of surveillance data and findings to stakeholders.	Strengthened capacity of laboratories and health systems to manage AMR challenges.
Output	- Active AMR surveillance conducted in poultry and cattle, with findings reported. - AMU surveillance implemented at farm level in seven provinces.	• AMU PPS conducted at 12 healthcare sites. • Integrated AMR surveillance conducted and findings disseminated.	- Data shared through departmental websites, workshops, and conferences. - Treatment guidelines for rational antimicrobial use printed and uploaded in mobile apps for wider utilization.

3 Logical Framework

LEVEL	PROJECT SUMMARY	INDICATORS	MEANS OF VERIFICATION	RISKS / ASSUMPTIONS
Goal	To effectively manage and mitigate Antimicrobial Resistance (AMR) by producing and disseminating high-quality data on AMR, Antimicrobial Use (AMU), and Antimicrobial Consumption (AMC) in Nepal.	- Reduction in AMR rates in humans and animals. Improved policies and practices based on AMR data. Quality AMR, AMU, and AMC	- National AMR/AMU/AMC reports. Policy changes and implementation.	- Continued support and collaboration from stakeholders. - Stable political and economic conditions.
Outcomes	1. Strengthened surveillance systems for AMR, AMU, and AMC. 2. Enhanced data sharing and utilization for informed decision-making.	- data generated and analyzed. - Number of stakeholders engaged and informed. Reports on AMR in poultry	- Surveillance reports and data analyses. - Meeting minutes and stakeholder feedback.	- Effective coordination among partners. - Availability and accuracy of data.
Outputs	- Active AMR surveillance reports. - Farm-level AMU surveillance system established. - Point prevalence survey conducted. Integrated surveillance data.	- and cattle. - Farm-level AMU data across provinces. - PPS results from 12 sites. - Integrated AMR data collected.	- Surveillance reports and PPS findings. - Data collection and analysis records.	- Timely completion of activities. - Effective stakeholder engagement and data collection processes.
Activities	1. Conduct AMR surveillance in poultry and cattle. 2. Establish AMU surveillance system. 3. Perform point prevalence survey. 4. Implement integrated surveillance approaches.	- Number of surveillance rounds completed. - Number of sites surveyed. - Data collected and reported.	- Activity reports and surveillance data. - Training and workshop records.	- Logistical challenges in data collection. - Training and capacity building effectiveness.

4 Indicators

Indicators Table

Indicator	Definition	Purpose	Baseline	Target	Data Collection	Tool	Frequency	Responsible	Reporting	Quality Control
Reduction in AMR rates	The percentage decrease in antimicrobial resistance rates in humans and animals.	To measure the effectiveness of AMR management efforts.	Current AMR rates (to be established)	X% reduction	AMR surveillance reports	Surveillance data system	Annually	Surveillance team	National AMR/AMU/AMC reports	Regular audits of data accuracy
Improved and policies and practices	The implementation of new or improved policies and practices based on AMR data.	To assess the impact of AMR data on policy-making.	Current policy initiatives	Number of new/updated policies	Policy anddocuments implementation records	Policy tracking system	Annually	Policy team	Policy changes and implementation	Verification of policy documents and practices
Quality AMR, AMU, and AMC data generated	The quality and completeness of AMR, AMU, and AMC data collected and analyzed.	To evaluate the reliability and usefulness of the data.	Current data quality (to established)	X% improvement	Data quality assessments	Data quality monitoring system	Routinely	Data management team	Surveillance reports and data analyses	Regular data audits and validation
Number of stakeholders and engaged and informed	The count of stakeholders actively involved and informed about AMR, AMU, and AMC efforts.	To gauge stakeholder engagement and information dissemination.	Current engagement level (to be established)	Number of stakeholders	Stakeholder engagement records	Engagement tracking	Biannually	Stakeholder engagement team	Meeting minute and stakeholders feedback	Regular review of engagement activities
Active AMR surveillance reports	The issuance and quality of AMR surveillance reports.	To ensure continuous monitoring and reporting of AMR.	Number of reports currently issued (to be established)	Number of active reports	Surveillance report data	Report generation system	Monthly	Surveillance team	Surveillance reports	Regular review and verification of reports
Farm-level AMU surveillance system established	The establishment and functionality of a surveillance system for antimicrobial use on farms.	To monitor and evaluate antimicrobial use on farms.	Current system status (to be established)	Fully established system	System setup and operational records	System monitoring tools	Annually	Farm surveillance team	Farm-level AMU data across provinces	Regular checks on system functionality data accuracy
Point prevalence survey conducted	Completion and quality of point prevalence surveys.	To assess antimicrobial use prevalence at selected sites.	Current survey completion rate (to established)	Surveys conducted at all 12 sites	Survey results and analysis	Survey data system	Once per survey	Survey team	PPS results from 12 sites	Quality checks and data validation
Integrated AMR data collected	The collection and integration of AMR data from various sources.	To ensure comprehensive data integration for AMR analysis.	Current data integration level (to be established)	Fully integrated data	Data integration records	Data integration system	Monthly	Data integration team	Integrated AMR data collected	Regular integration reviews and data audits

5 Data Management

5.1CollectionandQualityAssurance

Data Collection Methods:

a. Active Surveillance: Continuous collection of data from participating laboratories and field sites focusing on AMR testing in animal samples (poultry and cattle) and human health settings. This will involve bacteriological testing, antibiotic susceptibility testing, and pathogen identification.

b. Point Prevalence Surveys (PPS): The PPS will be conducted at selected healthcare facilities to measure the point-in-time use of antimicrobials, focusing on the most commonly used drugs and their indications. This method will also capture data on prescribing practices and adherence to guidelines.

c. Farm-Level Surveys: Surveys at farm-level settings will capture information on AMU practices, including types of antimicrobials used, dosage, duration, and compliance with veterinary guidelines/protocols.

d. Stakeholder Consultations: Regular consultations meetings will be held, including veterinary officers, healthcare providers, and regulatory bodies, will provide insights into barriers and facilitators of effective AMU and AMR management.

e. Electronic Data Collection Systems: Data will be collected using digital platforms designed to ensure real-time data capture, quality checks, and integration across different sites. Field teams will be trained on using tablets or mobile applications for seamless data entry and submission.

Data Quality Assurance:

a. *Standard Operating Procedures (SOPs):* SOPs will be established for each data collection activity to ensure consistency across sites. These will cover sample collection, storage, transportation, and testing procedures.

b. *Routine Data Quality Audits (RDQA):* RDQAs will be conducted on a routine basis (immediately after data collection and while compiling the data) to verify the accuracy, completeness, and reliability of data collected. This will involve cross-checking reported data against source documents and site visit reports.

c. *Data Validation Workshops:* In-house and field level data validation (immediately and during compilation) will be done with surveillance teams and laboratory staff to review data, resolve discrepancies, and improve data entry practices.

d. *Feedback Loops:* Timely feedback will be provided to field teams to address any identified data quality issues, ensuring corrective actions are taken promptly.

5.2 Analysis and Reporting

Analysis

a. Data Analysis: Data will be analyzed using statistical software (e.g., STATA, SPSS) to identify trends in AMR patterns, AMU behaviors, and compliance with guidelines. Cross-tabulations, frequency distributions, and inferential statistics will be used to generate insights.

b. Qualitative Data Analysis: Thematic analysis will be applied to qualitative data from KIIs, FGDs, and observation reports to identify recurring themes, challenges, and opportunities for improvement.

***Note**: ****The cleaned data will be provided by GTA to the FHI 360 team, who will then be responsible for analyzing the final data. GTA will subsequently be responsible*

*for producing a report based on the analyzed data****.*

c. Data Visualization: Dashboards and infographics will be created to present data in an accessible and user-friendly format for stakeholders. Data visualizations will include trend graphs, maps of surveillance coverage, and risk factor heatmaps etc.

Reporting

a. Monthly Progress Reports: These will include a brief account of activity implementation, challenges encountered, and immediate actions taken.

b. Quarterly and Final Reports: Comprehensive reports will summarize achievements against targets, provide performance trends, and highlight lessons learned. The final report will highlight the overall outcome of the project, including success stories, unintended outcomes, and sustainability prospects.

5.3 Privacy

Group for Technical Assistance (GTA) is committed to protecting the privacy and confidentiality of all individuals and organizations involved in the Fleming Fund Country Grant for Nepal Phase II project. This privacy statement outlines our approach to safeguarding the personal and sensitive information collected during the Monitoring and Evaluation (M&E) processes.

1. Data Collection and Use GTA will collect data as outlined in the M&E plan, including but not limited to information from active surveillance, point prevalence surveys (PPS), farm-level surveys, and stakeholder consultations. The data collected will be used solely for the purposes of monitoring and evaluating the project's impact, assessing progress, and informing decision-making processes. Personal identifiable information (PII) will only be collected if it is essential for these purposes, and all data will be handled with the highest level of confidentiality.

2. Data Storage and Security All data collected will be securely stored in encrypted digital systems with restricted access to authorized personnel only. GTA will implement robust security measures to prevent unauthorized access, data breaches, or loss of data. This includes the use of secure servers, encryption technologies, and regular security audits.

3. Data Sharing and Disclosure GTA will only share data with project partners, including FHI 360 and Mott MacDonald Limited / Secretary of State for Health of the United Kingdom, as necessary for the successful implementation of the project. Any data shared with external parties will be anonymized and aggregated to ensure that no personal identifiable information is disclosed. GTA will not sell, trade, or otherwise transfer any collected data to third parties without explicit consent unless required by law.

4. Data Retention GTA will retain the collected data only for at least 7 years to fulfill the objectives of the M&E plan and comply with legal obligations. Once the data is no longer needed, it will be securely deleted or anonymized to prevent any misuse.

5. Rights of Individuals Individuals whose data is collected have the right to access their information, request corrections, or demand deletion of their data at any time. Requests should be directed to GTA's data manager, and GTA will respond promptly to ensure that these rights are upheld.

6. Compliance and Accountability GTA is committed to complying with all applicable data protection laws and regulations. Regular training will be provided to project staff on data protection and privacy practices to ensure that all activities align with legal and ethical standards. GTA will also conduct regular reviews of its privacy practices and make necessary adjustments to maintain the highest standards of data protection.

Group for Technical Assistance (GTA)

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