THE FLEMING FUND COUNTRY GRANT

NEPAL

BACKGROUND

Since 2018, the Fleming Fund Country Grant for Nepal (FFCGN) aims to strengthen the capacity of human resources, laboratory and surveillance systems for antimicrobial resistance (AMR), antimicrobial use (AMU) and antimicrobial consumption (AMC) in human, animal, food and environment sectors through a One Health approach.

The Department of Health and Social Care (DHSC)'s Fleming Fund is a UK aid programme supporting up to 25 countries across Africa and Asia to tackle AMR, a leading public health threat across the world. The Fund invests in strengthening surveillance systems through a portfolio of country grants, regional grants, and fellowships managed by DHSC's partners.

The FFCGN is led by grantee FHI 360 Nepal Office in collaboration with the Government of Nepal's Antimicrobial Resistance Multi-sectoral Steering Committee (AMRMSC).

FFCGN AT A GLANCE

Funded by:
UK aid, the Fleming Fund

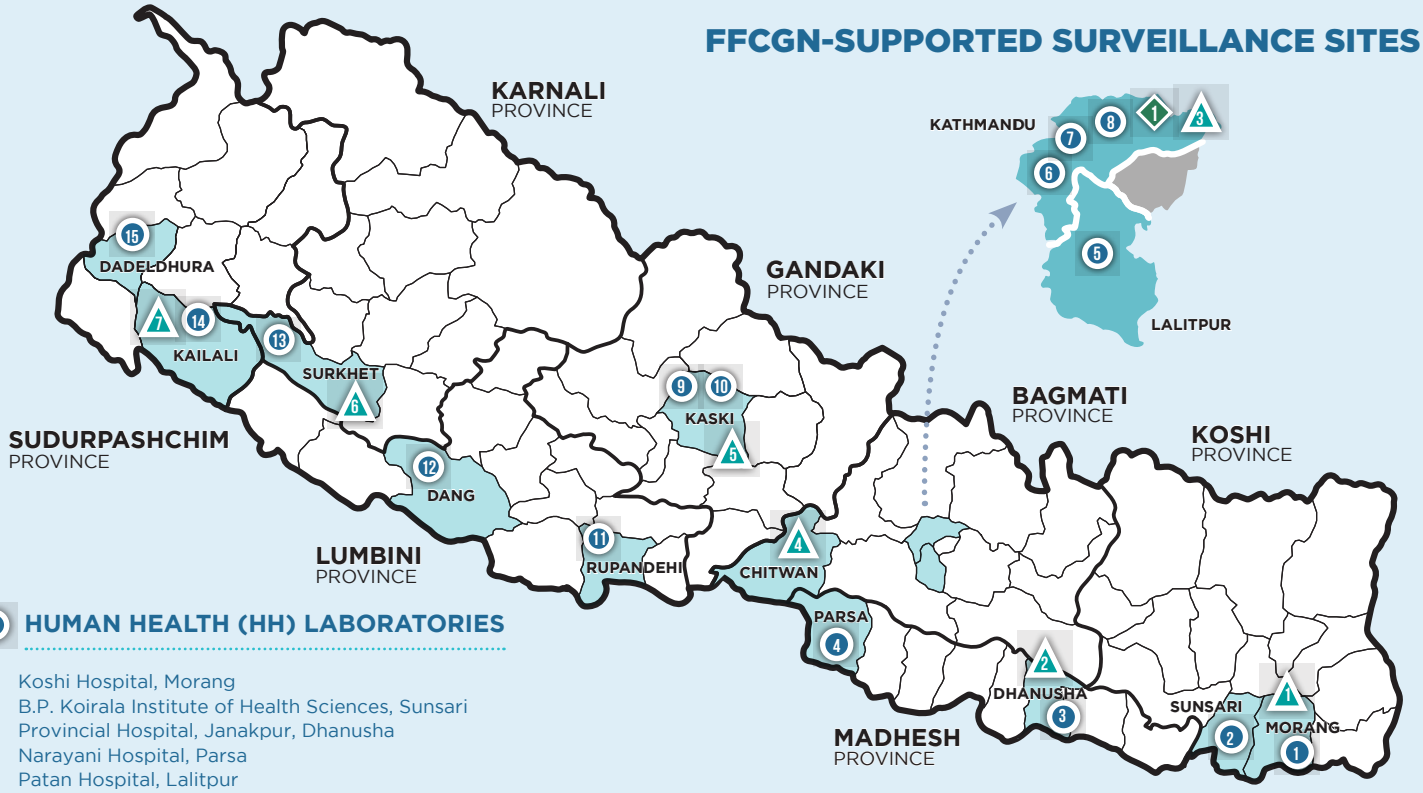
Managed by:
Mott MacDonald

Implemented by:
FHI 360 Nepal Office

Duration:
Aug 18, 2018–Dec 31, 2023

Budget:
£4.12 million

FFCGN-SUPPORTED SURVEILLANCE SITES



HUMAN HEALTH (HH) LABORATORIES

1 Koshi Hospital, Morang
2 B.P. Koirala Institute of Health Sciences, Sunsari
3 Provincial Hospital, Janakpur, Dhanusha
4 Narayani Hospital, Parsa
5 Patan Hospital, Lalitpur
6 Bir Hospital, Kathmandu
7 National Public Health Laboratory, Kathmandu
8 Tribhuvan University Teaching Hospital, Kathmandu
9 Pokhara Academy of Health Sciences, Kaski
10 Pokhara Manipal Teaching Hospital, Kaski
11 Lumbini Provincial Hospital, Rupandehi
12 Rapti Academy of Health Sciences, Dang
13 Province Hospital, Surkhet
14 Seti Provincial Hospital, Kailali
15 Dadeldhura Hospital, Dadeldhura

ANIMAL HEALTH (AH) LABORATORIES

1 Veterinary Laboratory, Morang
2 Veterinary Laboratory, Dhanusha
3 Central Veterinary Laboratory, Kathmandu
4 National Avian Laboratory, Chitwan
5 Veterinary Laboratory, Kaski
6 Veterinary Laboratory, Surkhet
7 Veterinary Laboratory, Kailali

FOOD LABORATORY

1 Department of Food Technology and Quality Control, Kathmandu

ACTIVITIES

Promotion of a One Health approach for AMR surveillance

- Facilitated the signing of a Memorandum of Understanding (MoU) between the Ministry of Health and Population (MoHP), Nepal and the UK DHSC for the Fleming Fund support on AMR containment.
- Functional AMRMSC and National Technical Working Committee (NTWC).
- Formed and operationalised six technical working groups (TWGs) across human, animal and food sectors.
- Collaborated with the government and other stakeholders to develop the National Action Plan for AMR.
- Provided human resource support to the AMR secretariat at the MoHP

Strengthening of bacteriology laboratories in human, animal and food sectors

- Microbiology laboratories upgraded to meet the Biosafety Level-2 (BSL-2) requirements through renovation, equipment and accessories support.
- Microbiology services enhanced through equipment and consumables support, laboratories systems upgraded from manual to automated, and reference laboratories equipped with state-of-the-art technologies.
- Human capital strengthened through skillbased learning in four sectors: human, animal, food and environment.
- Reference laboratories supported to participate in International External Quality Assessment Scheme (EQAS) and sentinel surveillance sites in National EQAS.

Promotion of good microbiology laboratory practices through technical assistance, alongside development and implementation of guiding documents (protocols, laboratory manuals, bench aids, posters and booklets) across all sectors

Management of AMR surveillance data

- Data generation and sharing across all three sectors streamlined with data-digitisation support; signing of MoUs between National Public Health Laboratory (NPHL) and sentinel surveillance sites; use of national protocol and standard data sharing template.
- Implementation of Robotic Process Automation (RPA) for data sharing from sites to NPHL.
- Upgrading and expansion of Laboratory Information Management System (LIMS) in veterinary laboratories.

Initiation of AMR surveillance in food sector by Department of Food Technology and Quality Control

Support for reporting to the Global Antimicrobial Resistance and Use Surveillance System (GLASS) and the World Organisation for Animal Health (WOAH)

- Upgrading and validation of the Post Marketing Surveillance software at the Department of Drug Administration (DDA).
- Development of AMU/AMC data management and reporting software at the Veterinary Services and Drug Regulatory Laboratory (VSDRL).

Generation of baseline AMU data in human and animal health

- The MoHP launched the AMU surveillance in human health from a point prevalence survey (PPS) at six tertiary care hospitals in Bagmati, Gandaki, Karnali and Koshi provinces.
- National AMU surveillance plan for animals developed.
- The VSDRL generated baseline data for AMU in poultry from a farm-based survey in broiler and layer populations in the Kathmandu valley, followed by a nationwide survey in broilers.
- Antibiotic distribution pathway mapped for human and animal health sectors.

Technical assistance for AMR and AMU data sharing at global level

- The NPHL reported AMR surveillance data from 2018–2023 to GLASS, increasing the number of sites reporting from one site in 2018 to 25 in 2023.
- The VSDRL reported AMU/AMC data to WOAH from 2018–2019 in Option 1 (baseline information and antimicrobial class) and 2020–2023 data in Option 3, which also included animal group data.
- The DDA reported AMC data from 2019–2022 to GLASS-AMC.

Completed active AMR surveillance in poultry at four veterinary laboratories.

Stakeholder engagement to ensure AMR/AMU/AMC data uptake for AMR containment through:

- Improvement in the quality of interactions between the laboratory and clinicians.
- Engagement of food and feed industries to adopt good manufacturing practices.
- Interactions with agro-vets on rational use and dispensing of antibiotics.

Development of human capacity for AMR/AMU/AMC surveillance

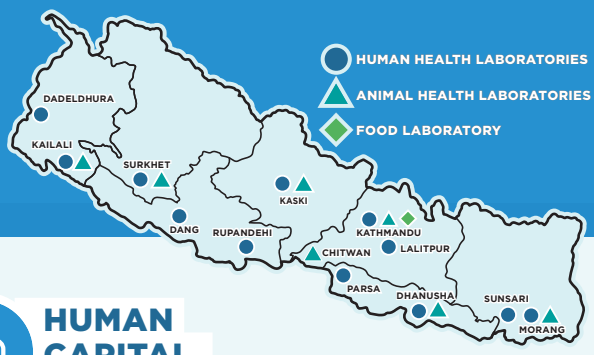
- Upskilled laboratory professionals for processing of samples and data management for AMR surveillance.
- Strengthened capacity for conducting AMU surveillance at six tertiary care hospitals.
- Strengthened capacity for conducting active AMR surveillance in poultry at four veterinary laboratories.
- Strengthened capacity of manufacturers, importers and DDA to manage AMC data for GLASS-AMC reporting.

Sharing of AMR/AMU/AMC surveillance data at local, national and global levels

THE FLEMING FUND COUNTRY GRANT FOR NEPAL

ACHIEVEMENTS

AUGUST 2018–DECEMBER 2023



FOUNDATION BUILDING

AMRMSC and **NTWC** formed and functioning

6 TWGs formed and functioning

MoUs signed between NPHL and HH sites for AMR data sharing

HUMAN CAPITAL STRENGTHENING

789 males

740 females

SURVEILLANCE SYSTEMS DEVELOPMENT

23 laboratories strengthened

18 laboratories renovated

20 laboratories supported to meet BSL-2

16 technical documents developed

20 HH surveillance sites supported with RPA system for AMR data sharing

506 laboratory equipment provided

22 surveillance sites in three sectors along with DDA, MoHP and VSDRL provided with IT equipment

5 HH surveillance sites upgraded from manual to automated blood culture system

MALDIToF-MS* and **VITEK-2** installed at NPHL and CVL

** Matrix-Assisted Laser Desorption Ionization Time of Flight, Mass Spectrometry*

Completed **active AMR surveillance** in **poultry**

Initiated **active** and **passive AMR surveillance** in **food sector**

Laid groundwork for **AMR surveillance** in **environment**

Software upgraded for AMC surveillance at DDA and developed for AMU/AMC surveillance at VSDRL

7 veterinary laboratories supported with LIMS

RATIONAL USE OF ANTIMICROBIALS

37 events on strengthening laboratory clinic interface

National List of **Essential Veterinary Medicines**

AMU survey in poultry farms

AMU PPS at **6** hospitals in **4** provinces

SWOT analysis for antimicrobial stewardship at **4** hospitals

National Antibiotic **Treatment Guidelines** 2023

Engagement with **professional associations** and **private sectors**

DATA DISSEMINATION

25 surveillance sites'AMR data reported to GLASS

10 events for AMR, AMU and AMC findings dissemination

3 provincial AMR workshops

WOAH AMU/AMC reporting upgraded to **Option 3**

AMC data (2019–2022) reported to GLASS-AMC

Launched **AMR newsletters**

The Fleming Fund Country Grants

UKaid from the British people

fhi360

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The views expressed in this publication are those of the FHI 360 and not necessarily those of the UK DHSC or its Management Agent, Mott MacDonald.