National Institute of Health
Newsletter
---- Islamic Republic of Pakistan ----
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Notification of Technical Working Group for revision of National Action Plan for Antimicrobial Resistance Containment and Infection Prevention and Control

Pakistan developed the first National Action Plan (NAP) on AMR in 2017 with the involvement of all the relevant stakeholders at the federal, provincial, and regional levels. This plan is built upon the objectives of GAP and National Strategic Framework, and through a systematic all-inclusive consultative process to ensure the ownership, agreement, and commitment of all stakeholders. The action plan mainly focuses on critical aspects like surveillance of AMR burden, effective stewardship program, and prudent use of antibiotics in all sectors with special emphasis on national awareness raising. After completing five years of the NAP, the next step is the revision of the document to prioritize the action plans for the coming years. To carry out this exercise, a Technical Working Group (TWG) has been formulated as recommended by relevant ministries/ institutes and organizations to support the process of revision and development of NAP.

As per the notification, the Chairman of TWG is Dr. Mumtaz Ali Khan while the detail of all members is as follows:

I	Chairman Dr. Mumtaz Ali Khan
II	Deputy DG/AMR focal point at MoNFSR&C, Islamabad
III	Dr. Omera Naseer, Senior Scientist National AMR& IPC Program - NIH
IV	Dr. Tamoor Hamid Chaudhary, Senior Scientific Veterinarian AMR - NIH
V	Ms. Numrah Safdar, Pharmacist National AMR& IPC Program - NIH
VI	Ms. Zurva Ashraf, Senior Scientific Officer – NIH Islamabad
VII	Ms. Saadia Ambreen, Scientific Officer, NIH - Islamabad
VIII	Dr. Obaidullah, Director of Pharmacy Service DRAP
IX	Dr. Abdul Quddus (Inspection Officer), IHRA-Islamabad
X	Mrs. Sana Rehman, RO-Health Research Institute - NIH
XI	Dr. Muhammad Abubakar (Senior Scientific Officer), MoNFSR&C NVL
XII	Dr. Hamid Irshad (PSO AHP, ASI PASRC – NARC) Islamabad
XIII	Dr. Riasat Waseeullah (National Project Coordinator – AMR), FAO
XIV	Dr. Mansoor Ali Wassan (Deputy Secretary IC), Ministry of Climate Change
XV	Dr. Hafiz Rasheed, (DG) PCRWR Islamabad
XVI	Mr. Mansoor Latif, inspector, DHO
XVII	Representative from Pharmacy Council of Pakistan
XVIII	Representative from Veterinary Medical Council
XIX	Ms. Farzana Zulfiqar, President Nursing Council
XX	Dr. Suleman Ahmed, Assistant Registrar, PMDC
XXI	Major Gen. Prof. Irfan Ali Mirza representative of CPSP
XXII	Representative from PPMA
XXIII	Representative from PIMS
XXIV	Dr. Summayia Nizaumddin SKMCH&RC Lahore
XXV	Prof. Dr. Bushra Mirza, Higher Education Commission
XXVI	Focal Person AMR – WHO Country Office
XXVII	Sobhan Qadir, Technical Advisor for Infection Control, Jhpiego
XXVIII	Dr. Nadeem Hassan, JSI
XXIX	Dr. Munnaza AMR Coordinator – Fleming Fund Country Grant
XXX	Dr. Farooq Tahir, Integral Global

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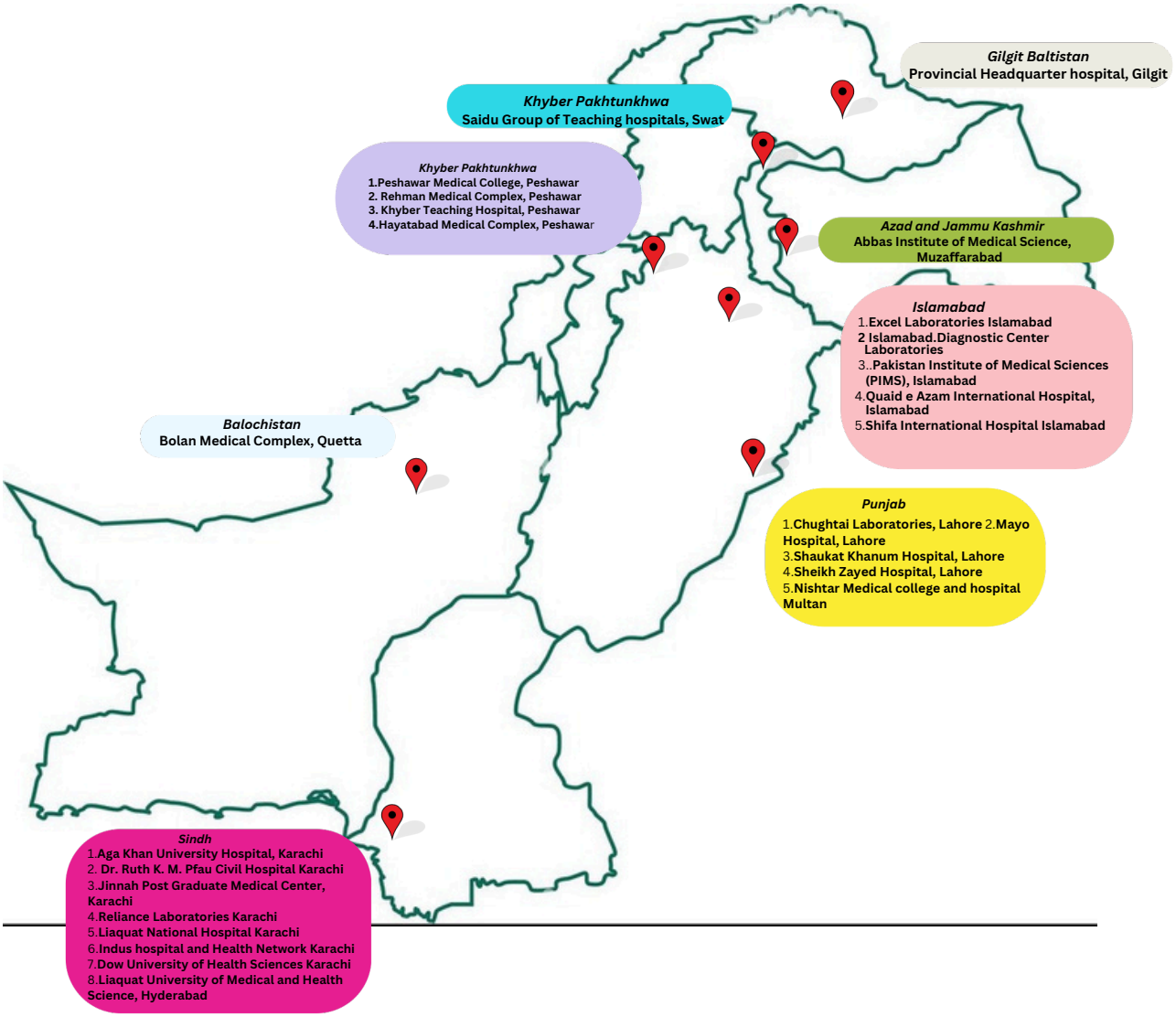
Human Health

Participation in Global Antimicrobial Resistance and Use Surveillance System (GLASS)

The National Institute of Health (NIH) has submitted the AMR data on human health to the Global Antimicrobial Resistance and Use Surveillance System (GLASS). Pakistan has been participating in the GLASS platform since 2017 and through the contribution of AMR surveillance sentinel sites, NIH was able to submit AMR data on the WHO GLASS platform for 2022.

List of laboratories contributed to National AMR Surveillance for Year 2022 [Sentinel Sites]



For the reporting period January-December 2022, data of a total of 229,617 non-duplicate isolates from 26 surveillance sites/laboratories were received.

The most frequently reported pathogens were *E. coli* (36 %), followed by *K. pneumoniae* (12%) *S. aureus* (10 %), and *P. aeruginosa* (7%).

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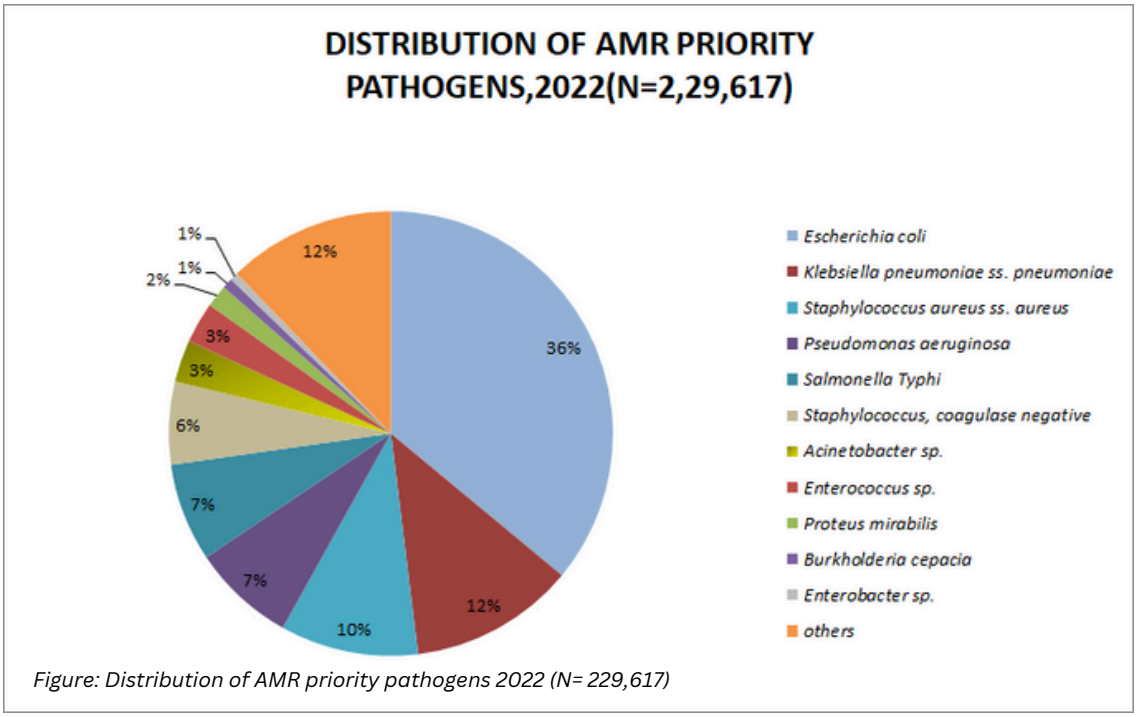

Figure: Distribution of AMR priority pathogens 2022 (N= 229,617)

AMR Surveillance Data *Pseudomonas aeruginosa*

For the year 2022, a total of 26 sentinel sites reported 17,263 isolates of *Pseudomonas aeruginosa*. Over 35% (N=6,100) of all *Pseudomonas aeruginosa* pathogens were isolated from pus specimens and around 22% (N=3848) from urine specimens. The most tested and reported antibiotics are piperacillin-tazobactam 90%, Ceftazidime 85%, Amikacin 84%, ciprofloxacin 78, and gentamicin 74% of isolates from all specimen sources. Resistance in *Pseudomonas aeruginosa* range from 21% for Piperacillin Tazobactam to 36 % for ciprofloxacin and 34% for ccefepime.

***Pseudomonas aeruginosa* (N=17263)**

Code	Antibiotic name	Number	%R	%I	%S
TZP	Piperacillin/Tazobactam	15339	21.0	2.2	76.9
CAZ	Ceftazidime	14724	26.9	0.4	72.7
FEP	Cefepime	10591	34.1	1.1	64.8
IPM	Imipenem	11799	28.4	0.9	70.7
MEM	Meropenem	10899	27.4	0.7	71.9
AMK	Amikacin	14493	25.8	0.6	73.5
GEN	Gentamicin	12855	32.6	0.5	66.9
TOB	Tobramycin	9276	25.6	3.6	70.8
CIP	Ciprofloxacin	13526	36.5	1.7	61.8

One-day meeting on the National Integrated Stewardship Program for Antimicrobial, Infection Prevention, Diagnostic (AID) in Healthcare settings.

A coordination meeting was organized by the National Institute of Health (NIH) Islamabad in collaboration with Fleming Fund-DAI to introduce the National Integrated Stewardship Program in Healthcare settings. The aim is to initiate its implementation covering a maximum number of healthcare facilities in Pakistan to reduce the burden of antimicrobial resistance. The National Integrated Stewardship for Antimicrobial Resistance, Infection Prevention & Diagnostics (AID) was launched by the NIH in collaboration with the Ministry of National Health Services Regulations and Coordination (MONSHR&C), Islamabad Health Regulatory Authority (IHRA), the Fleming Fund Country Grant Pakistan and allied stakeholders in May 2023.

Recommendations

- Development & implementation of National policy for Integrated Antimicrobial, Infection Prevention & Diagnostic (AID) Stewardship
- Formulation/Implementation of strategic framework for AMS with M&E
- Formation & notification of AMS & IPC stewardship committees within HCFs
- Dissemination of results of pilot study of integrated AID Stewardship to all stakeholders Tailored Interventions & activities in HCF

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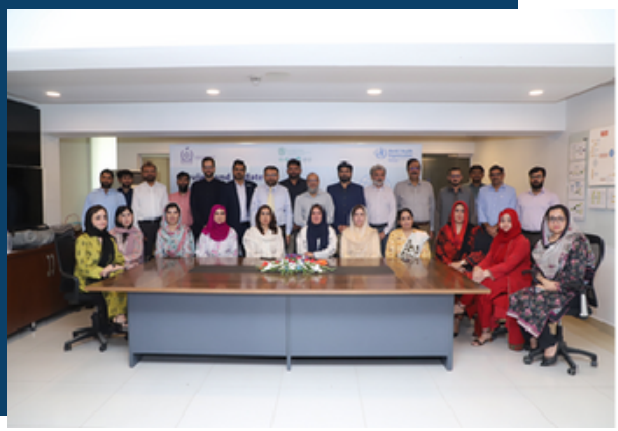
Meeting of Technical Working Group (TWG) for Revision and update of AMR National Action Plan

The National Institute of Health in collaboration with WHO has convened the first meeting of TWG on 13 June 2024 for the revision of NAP. TWG members from all the relevant sectors participated in the meeting. The objectives of the meeting were to review the progress on the existing NAP and to discuss the methodology for the revision and update. During the meeting, TWG members provided feedback on the situational analysis regarding existing AMR structures, policies, resources, capacities, and activities related to NAP implementation. Moreover, challenges and future priorities were also highlighted concerning each strategic priority.



Animal Health

Meeting of Technical working group for formulating AMR Surveillance Strategy in Environment The Fleming Fund Country Grant Team arranged a consultative meeting of major stakeholders in drinking and wastewater and food production settings on 30th April 2024 in Pakistan Council for Research in Water Resources (PCRWR). The stakeholders from PCRWR, Water Sanitation and Hygiene (WASH) Unit Ministry of Climate Change and Environmental Coordination (M/O CC&EC), Animal Husbandry Commissioner, National Veterinary Laboratory and Animal Sciences Institute attended the meeting. The composition of a Technical Working Group (TWG) with membership from the Water, Food production, Human Health, Animal Health and Environment, representing both the Public and Private Sectors, Academia, and Research Organizations and its Terms of References (TORs) for formulating AMR Surveillance Strategy in Environment were discussed and finalized. The same is notified from PCRWR vide No. PCRWR/NWQL-2024/AMR dated May 02, 2024.

Consultative workshop for deliberation on National Surveillance Strategy for AMR in Aquaculture

The Animal Husbandry Commission in collaboration with The Fleming Fund Country Grant Pakistan organized a consultative workshop for deliberation on the National Surveillance Strategy for Antimicrobial Resistance (AMR) in Aquaculture on May 21st, 2024, in Islamabad. Aquaculture is a rapidly growing industry that currently accounts for almost half of the fish used for human consumption worldwide. Fisheries production is of the top 10 export commodities in Pakistan that share 1% of the country's total GDP. Passage of antimicrobial resistance genes and resistant bacteria from aquatic to terrestrial animal husbandry and the human environment and vice versa can have detrimental effects on both human and animal health and aquatic ecosystems.

The representatives from the Ministry of Food Security & Research, Pakistan Agriculture Research Council, Provincial Fisheries Departments, academia (including UVAS, PMAS-UAAR, and Abdul Wali Khan University), as well as partners like FAO, the Pakistan Fisheries Society, and private fish farmers attended the meeting. The primary objective was to refine the draft "National Surveillance Strategy for AMR in Aquaculture" for its incorporation into Pakistan's AMR National Action Plan. Discussions focused on selecting high-priority fish species, production systems, geographic locations, and bacterial diseases. Additionally, participants determined the sampling framework, reviewed existing AMR testing, and discussed the engagement of public and private sectors in AMR surveillance. Emphasis was also placed on supporting a One Health approach, integrating efforts across human, livestock, fisheries, and environmental sectors. The workshop successfully fostered a collaborative environment and the participants agreed on a pilot project for active AMR surveillance in the aquaculture sector. The workshop successfully achieved the desired outcomes of strengthening the national strategy and enhancing coordination among the stakeholders to manage antimicrobial resistance in aquaculture, promoting a comprehensive approach to public health and environmental sustainability.

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Policy Brief: Addressing antimicrobial resistance in Pakistan

A Policy Brief, based upon study of nationwide surveillance in Healthy Food Animals was launched by the Animal Husbandry Commissioner, Ministry of National Food Security & Research with support of The Fleming Funds Country Grant Pakistan on 31st May 2024. Pakistan has a large population of 219 million livestock that is under extreme pressure for high production. If antibiotics are misused, it puts them at high risk for developing drug resistance. These resistant bugs don't just stay in animals rather contaminate the environment, food products and plants that ultimately affect human health and vice versa, particularly pathogens that are transferable (zoonotic) from animals to humans. To address the growing concerns of AMR around the world, Ministry of Food Security & Research collaborated with Fleming Fund Country Grant and conducted a nationwide surveillance in healthy animals.

For the project Cattle/buffalo and poultry populations were targeted with the objectives to enhance all facets of AMR surveillance in Pakistan and baseline estimates of the prevalence of AMR in target bacteria from healthy slaughtered poultry and large ruminants using a panel of antimicrobials used in humans and animals. Resistance to antimicrobials deemed as critically important in human medicine were frequently detected in bacteria from both animal host species. Of important concern, resistance to highest priority antimicrobials including ciprofloxacin and ceftazidime were detected in E. coli and Salmonella, as well as vancomycin-resistant Enterococcus spp. (poultry only)Praising the efforts of DAI's Fleming Funds project's Dr. Muhammad Akram Animal Husbandry Commissioner MNFS&R said that AMR has emerged as a major health concern across the globe including Pakistan, resulting in an alarming increase in the burden of infections due to multi-drug resistant organisms, while limiting the choice of antimicrobials for treatment. AMR results mortality and economic losses in animal's sector. He appreciated the support of Fleming Fund for containment of AMR in low- and middle-income countries including Pakistan. The Team Lead for The Fleming Funds Country Grant Pakistan, Dr. Qadeer Ahsan on the occasion explained salient achievements of FF project during Phase-1 from 2019 to 2023 and elaborated broad thematic areas of the project support during Phase-2 from 2024 to 2025 including production and analysis of quality AMR/AMC and burden of disease data, sharing quality data with decision-makers and sustainability. He also said that it is high time we as practitioners realize the importance of this subject and make amends in correcting our course of veterinary practices and regulatory compliance.

AHC and Team Lead FF jointly emphasized the importance of implementing targeted interventions based on the report's recommendations, enhancing surveillance activities, and fostering collaboration at federal and provincial levels. Sustainable funding mechanisms to be developed to ensure the long-term effectiveness of AMR surveillance activities in the animal sector.

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