



QUARTERLY Antimicrobial Resistance (AMR)

NewsLetter

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Formulation of Technical Working Group for Revision of Drugs Rules:

Ensuring the wise use of antimicrobials; only when required, is of utmost importance in the present era of emerging resistance. To achieve optimized antimicrobial AMR use, existing rules for antimicrobials sales need to be revised on regular basis. Similarly, schedules particularly Schedule D and E containing antibiotics should be revised with the addition of more antibiotics by looking at the current resistance trends against them.



A technical working group (TWG) was constituted for the revision of drug rules and drug schedules with a special focus on antibiotics. It covers all important regulatory sectors such as the Ministry of Health, Drug Regulatory Authority of Pakistan (DRAP), Animal Husbandry Commission (AHC), Chief Inspectors of drugs and Secretaries' quality control board.

As per the notification, the Chairman of TWG is the Executive Director of NIH while the detail of all members is as follows:

i.	Executive Director, NIH Islamabad
ii.	Chief PHLD, NIH Islamabad
iii.	Deputy DG/ AMR focal point at MoNHSR&C, Islamabad
iv.	Chief Drugs Control and Traditional Medicine Division, NIH Islamabad
v.	Focal person AMR/AMC, DRAP
vi.	Admin member of Technical Working Group, DRAP
vii.	Animal Husbandry Commissioner, MoNFS&R
viii.	Pharmacist, AMR- NIH Islamabad
ix.	Senior Scientist Veterinarian AMR-NIH, Islamabad
x.	Secretary Provincial Quality Control Board (PQCB), Islamabad
xi.	Secretary Provincial Quality Control Board (PQCB), Punjab
xii.	Secretary Provincial Quality Control Board (PQCB), Sindh
xiii.	Secretary Provincial Quality Control Board (PQCB), Baluchistan
xiv.	Secretary Provincial Quality Control Board (PQCB), KP
xv.	Secretary Provincial Quality Control Board (PQCB), AJ&K
xvi.	Secretary Provincial Quality Control Board (PQCB), GB
xvii.	Chief Inspector of Drugs, Islamabad
xviii.	Drugs Controller, Punjab
xix.	Chief Inspector of Drugs, Sindh
xx.	Chief Inspector of Drugs, Baluchistan
xxi.	Chief Inspector of Drugs, KP
xxii.	Chief Inspector of Drugs, AJ&K
xxiii.	Chief Inspector of Drugs, GB
xxiv.	Co-opted member (s)

Second National Meeting of TWG to Review the Progress

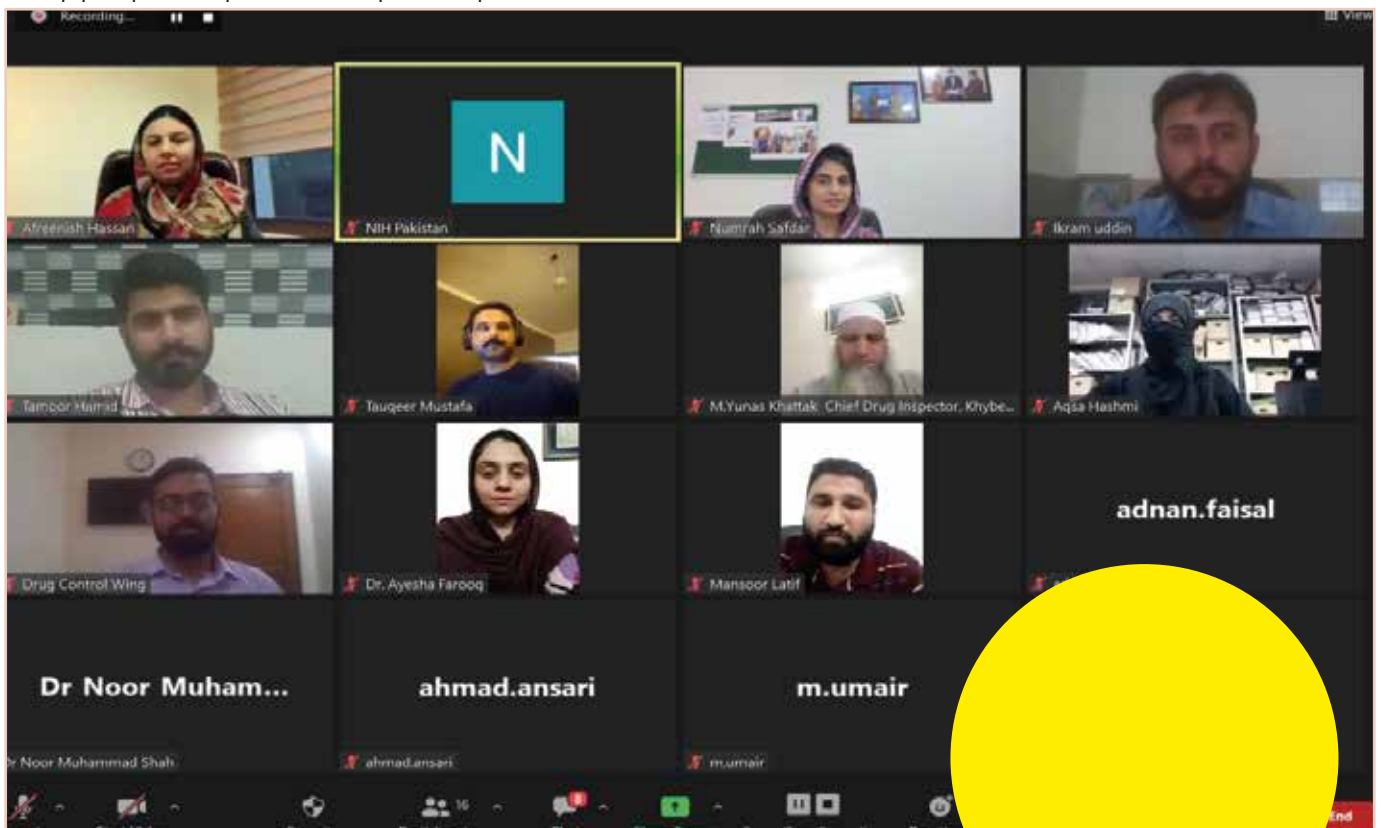
In order to review the progress of the Technical Working Group of AMR-IPC Program, the NIH organized a virtual meeting on 11th July 2022 with the Technical Working Group. The meeting concluded with the following recommendations:

- Drug schedules should be revised by adding pharmacological classes instead of individual names of antibiotics.
- Record for maintenance of the antibiotics should be mandatory for retailers as applicable for narcotics.
- Dispensing of Over the Counter (OTC) antibiotics must be banned.
- Appropriate pattern of prescription should

be followed for antibiotics. This could be implemented in collaboration with Pakistan Medical and Dental Council (PMDC) and Islamabad Health Regulatory Authority (IHRA).

- There must be standard treatment guidelines that should be followed by all health professionals.

As a follow up, an in-person meeting would be called at the NIH for the preparation of a revised document that would then be endorsed by the Secretary Quality Control Board (QCB). The same rules would be applied for dispensing antibiotics, all over Pakistan.



Progress Review Meeting for AMR Surveillance Pilot in Healthy Food Animals

To share the key findings of national AMR surveillance in healthy food animals with national and provincial AMR focal persons and to identify the possible way forward for proficient surveillance, a meeting was organized by Fleming Fund Country Grant Pakistan in collaboration of the Animal Husbandry Commissioner, MNFS&R at Islamabad. The progress was shared with the participants from all the provincial livestock departments who were encouraged to keep sharing the samples.

Consultative Meeting to Deliberate on Key Elements of the National Surveillance Strategy for AMR in Animal Food

Fleming Fund Country Grant in collaboration with AHC, the Ministry of National Food Security & Research (MoNFS&R) organized a consultative meeting to deliberate on the key elements of the National Surveillance Strategy for AMR in Animal Food Environments. Pakistan is ahead of its neighbours in South Asia in mapping the AMR surveillance in the animal health sector. Representatives from all provincial livestock departments, academia, federal institutes (NVL, NARC, NIH) and private poultry and dairy practitioners

participated in deliberations. Chelsey Shivley, Antimicrobial Resistance Coordinator at USDA Animal and Plant Health Inspection Service (APHIS) highlighted the "Monitoring of Antimicrobial Use and Resistance in Animals in the U.S.", and it was noticed that Pakistan is also working in line with the U.S. plan. Dr. Muhammad Akram (Animal Husbandry Commissioner) concluded a session, requesting all veterinarians for rational use of medication.



Consultative Meeting to Regulate AMR Surveillance Plan for Aquaculture

Antimicrobial resistance in aquaculture has an impact on human health as well as on the production of aquaculture. After taking several initiatives on AMR in the livestock sector supported by Fleming Fund Country Grant, keeping in view the role of fisheries in food safety & security, MoNFS&R has taken another lead to devise a plan for AMR surveillance in aquaculture. Against this backdrop, a meeting was held to deliberate on the AMR surveillance plan for aquaculture. All provincial fisheries departments, academia, Fisheries Development Board, and Fisheries and Aquaculture Program (NARC) attended the meeting for deliberations on the matter. Key components of the AMR surveillance plan were identified to prepare the draft document.



Advocacy Meeting with Pakistan Veterinary Medical Council for AMR & Antimicrobial Use (AMU) Contents in Veterinary Curriculum

To discuss the current approved Doctor of Veterinary Medicine (DVM) curriculum with a focus on AMR and propose the AMR-related contents in the DVM curriculum, an advocacy meeting with Pakistan Veterinary Medical Council (PVMC) was held at Islamabad under the chair of Animal Husbandry Commissioner. During the event, Dr Miftahul Islam Barbaruah (Veterinary

Workforce Development Consultant, India) virtually presented “The Quest for an Ideal Veterinarian in the AMR Context” which was followed by priority AMR-related topics by the participants. Dr M. Akram (AHC) stated that for making prudent use of antimicrobials in the field, it is imperative to train veterinary students at academic institutes.

Consultative Meeting for Deliberation on Draft National Veterinary Laboratory Guidelines and Policies

For diagnostic harmonization of major zoonotic diseases including AMR, the National Laboratory Networking Group (NLNG) was notified by M/o NFS&R in 2020. To draft the national veterinary laboratory guidelines and policies, a consultative meeting was organized by MoNFS&R and Fleming Fund Country Grant. Laboratory personnel from all

major provincial veterinary laboratories, veterinary university diagnostic laboratories, federal veterinary laboratories and other relevant personnel attended the meeting to deliberate on their relevant part of the document. For the policy component, elite veterinarians from federal and provincial departments were also invited.



Inauguration of Microbiology Section of National Reference Laboratory for Poultry Diseases (NRLPD)

Honourable Federal Secretary MNFS&R Cap (R) Muhammad Asif and Mr. Nicholas Adkin, Deputy Director (GHS) Dept of Health & Social Care, UK inaugurated the microbiology section of the National Reference Lab for Poultry Diseases (NRLPD) NARC on 8th June 2022. NRLPD is the National Reference Centre for AMR in Poultry developed under Fleming Fund Country Grant Pakistan. Dr Farooq Tahir (Technical Advisor - Fleming Fund) highlighted the prime accomplishments under Fleming Fund Country Grant Pakistan in the veterinary sector. On this occasion Animal Husbandry Commissioner, Member (Animal Sciences Division) PARC, Director Animal Sciences Institute NARC, Director General NVL, and the representatives from UK HSA, Dept of Health & Social Care and DAI-Pakistan along with NRLPD officials were also present.



Farmers Day with Arid Agriculture University Rawalpindi

The animal health team of Fleming Fund Country Grant collaborated with the Department of Clinical Sciences, Faculty of Veterinary and Animal Sciences, PMAS Arid Agriculture University Rawalpindi to conduct a farmers' day at Sohan Rawalpindi which is a dense area for dairy farming. During the session, a free medical camp was arranged for farmers and the program team conducted awareness sessions for more than 50 DVM students and dairy farmers on antibiotic resistance, biosecurity, herd health management and transboundary animal disease control to minimize the use of antibiotics. Awareness material was provided to all farmers and veterinary students.

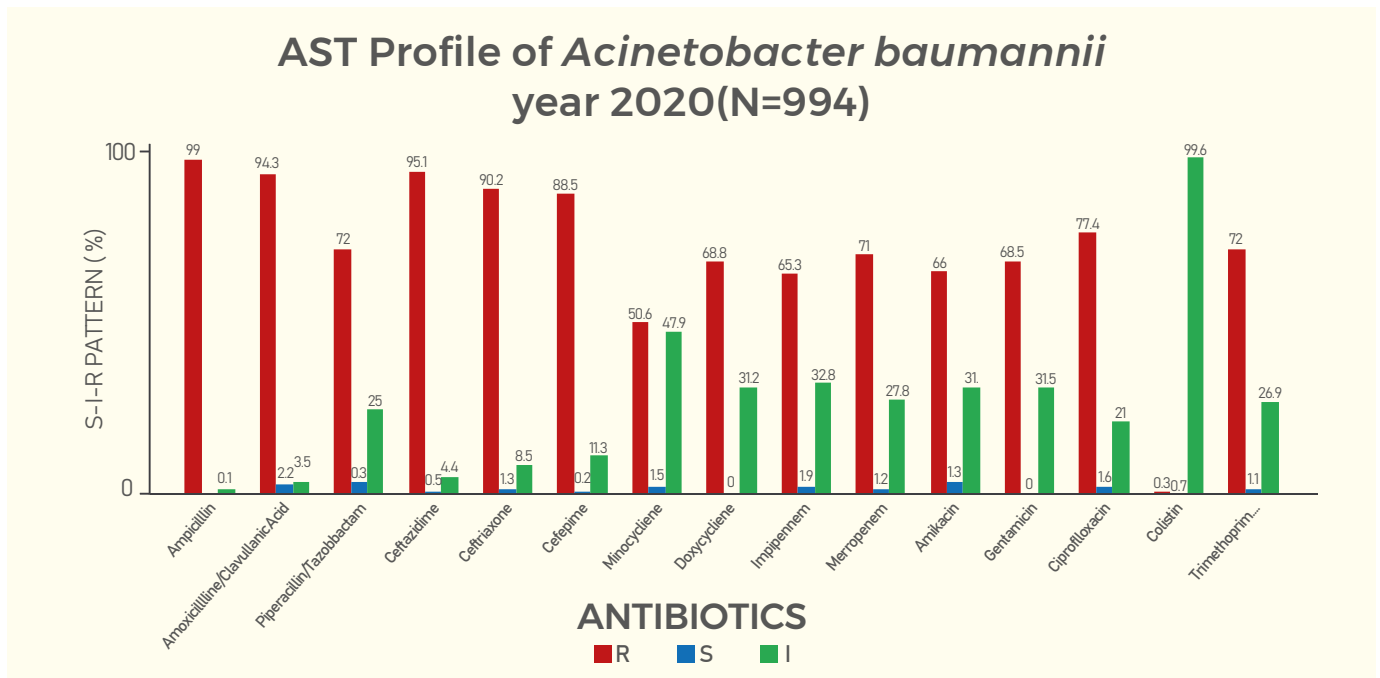
Awareness Session on AMR, AMU, Transboundary Animal Diseases (TADS) and Herd Health Management with DVM Students

The Fleming Fund Country Grant and MNFS&R, in collaboration with respective academic institutes, have conducted awareness seminars for DVM students at KBCMA College of Veterinary and Animal Sciences Narowal, College of Veterinary and Animal Sciences Jhang, and the University of Agriculture Faisalabad on May 7 & 31 and June 2 & 3, 2022 respectively. The students were assessed, pre-session and post-session, for their knowledge of AMR/AMU. According to this assessment, there was significant improvement in the learning of students. Dr Usman Zaheer, Dr Javaria Alam, and Dr Sami Ullah Khan talked about the importance of antimicrobial resistance/use and what actions are being taken at the national level to tackle this issue.



Surveillance Data

AMR Surveillance Data- Human Health:



A total of 1931 isolates of *Acinetobacter species* were reported from 15 sentinel laboratories. Among these 994 isolates were identified as *Acinetobacter baumannii*. The antimicrobial susceptibility profile of *Acinetobacter baumannii* show high-level resistance towards cephalosporins (Ceftazidime 95.1%, cefepime 88.5%, ceftriaxone 90.2 %) and combination beta-lactam/beta-lactamase inhibitor (Amoxicillin-clavulanic 94.3%, Piperacillin-tazobactam 72%) which are considered as first-line therapeutic options for susceptible isolates. Similarly, the Carbapenems showed high resistance (Lmipenem 65.3%, Meropenem 71%). Among Tetracyclines, 68.8% were resistant to doxycycline and 50.6% were resistant to minocycline. Likewise, 66% and 68% of the isolates were resistant to amikacin and gentamicin respectively.

Laboratory Assessments of AMR Sentinel Sites from the Veterinary Sector:

A technical team of AMR-NIH in collaboration with Ministry of MoNFS&R carried out laboratory assessments of the Livestock department all around Pakistan. On the nominations from Animal Husbandry Commissioner's office, five peripheral laboratories (one from each province) were assessed using the dedicated WHO's Laboratory Assessment Tool (LAT). The objective of the activity was to assess the lab capacities and active engagement the of the veterinary sector ensure active engagement of the veterinary sector.

The initial findings of the activity revealed that, in the animal of activity explored that, in the animal health sector, the majority of peripheral laboratories have basic capacities to undertake the identification and AST of bacteria. However, this provides an opportunity to build a



Gilgit Baltistan Veterinary Laboratory, Gilgit Livestock and Dairy Development Department Gilgit Baltistan

harmonized methodology for these services across the sector which can be aligned with

human health. Infrastructure was generally found acceptable with most sites have backup-up power and access to distilled water. However, the majority of provincial diagnostic facilities have a high sampling load from district labs with very limited equipment to support bacteriology.

Safety was an issue in most laboratories due to a lack of both equipment and processes. All animal health laboratories are currently using paper-based recording systems. As suggested earlier, this also presents an opportunity to introduce similar or identical laboratory information management systems for the animal health sector laboratories.

Workshop for Detection of Carbapenemase-producing Enterobacteriaceae with One Health Approach:

The NIH in collaboration with the National Veterinary Laboratory (NVL) and the Pakistan Council for Research of Water Resources (PCRWR) conducted three days of training workshops on the project “Improving the Tricycle protocol: upscaling to national Monitoring, detection of CPE and WGS pipelines for One Health Surveillance (TRIuMPH)” protocol. Training included didactic sessions and laboratory-based hands-on practice along with a sampling strategy. The project is being implemented in Islamabad, Lahore and Peshawar. A total of 25 laboratory personnel (Laboratory managers/supervisors and technologists) from the Human, Animal and Environmental health sectors attended the training.

TRIuMPH project is a joint collaboration between National Institute for Public Health and the Environment (RIVM, Netherland) and Tricycle participating countries including Pakistan.



Mentoring Session on Basic Microbiology

The Fleming Fund Country Grant, with the official support of the Ministry of National Food Security & Research, organized 3 days mentoring session (18th to 21st July 2022) for Provincial Disease Diagnostic Laboratory Lahore staff on basic microbiological techniques. The participants were trained on sample collection, labeling, transportation, bacterial isolation, identification processes, AMR data management. They were also acquainted with laboratory quality management systems.



AMC/AMU Pharmacy Surveillance Fellowship

Ms. Atifa Mushtaq is working as a scientist in the Drugs Control and Traditional Medicine Division (DCTMD) of the National Institute of Health since 2018. She is a pharmacist by profession and has been **(nominated as an AMC/AMU Fleming fellow in a pharmacy surveillance program)** for monitoring antimicrobial use and consumption in healthcare settings in Pakistan. The DCTMD acts as the country's reference lab for quality drug Testing under Section 22(5) of The Drugs Act, 1976 thereby functioning as the sole appellate laboratory for testing medicines in Pakistan.

As a part of the work plan in AMC/U pharmacy surveillance, she has done training at Peter Doherty Institute (PDI) University of Melbourne, Australia. The training covered data analyses, data presentation/visualization techniques and strategic communication skills along with discussions on various opportunities with Australian researchers and activities as stipulated in the workplan with the mentors.



MESSAGE: AMR FOCAL PERSON POULTRY, PUNJAB



Antimicrobial Resistance (AMR) is increasing every year both in the animal and human sectors. Increasing food demand of humans encourages the fast growth and high production of the animal sector and to achieve maximum yield goals, we are getting away from the natural procedures.

Punjab is a major contributor to animal production in Pakistan. Punjab province is also partnering with federal authorities and Fleming Fund Country Grants on collaborative projects. Punjab is also a pioneer in the formulation of legislation to regulate poultry production activities across the province. These legislations include AMR control as a key component.

A lot of work has to be done in future control AMR. The AMR is not just a laboratory-based disease control or organism-specific project. We need very strong communication, and understanding with all the stakeholders including veterinarians, producers and

customers to combat the challenges of AMR.

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