



NATIONAL INSTITUTE OF HEALTH

ISLAMIC REPUBLIC OF PAKISTAN



Antimicrobial Resistance (AMR) Quarterly Newsletter

2020
Volume IV

World Antimicrobial Awareness Week (WAAW)

World Awareness Week 2020, from 18 – 24 November 2020 commemorates the public health concern of antimicrobial resistance (AMR). Several activities were organized in collaboration with the Fleming Fund Country Grant Pakistan, the World Health Organization, the National Institute of Health, Animal Husbandry Commissioner Office (AHC) of Ministry of National Food Security and Research (MoNFSR) and the Ministry of Climate Change (MoCC).



One Health Approach for AMR Surveillance in Pakistan Strengths, Gaps and Opportunities

Panelists included Dr Muhammad Salman, Chief, PHLD; Dr Khalid Naeem, One Health Expert, NARC; Madam Farzana Altaf, Environmental Health Expert, Director General, EPA; and Dr Ejaz Khan, Infectious Disease Specialist, Shifa Hospital.

“ There is an urgent need to expand the AMR surveillance network, including the private sector and the environmental health sector for informed AMR policy making. ”

Dr Khalid Naeem, One Health Expert

Antimicrobials: Handle with Care

The NIH along with OIE and the Fleming Fund Country Grant Pakistan organized an Article competition for students. The submitted articles were reviewed by experts from human and animal health sectors. Winners received a shield, cash prize and an internship opportunity at one of the national reference laboratories: NIH, NVL and NRLPD.

Joint 1st Position: Waqas Hussain Shah and Zainab Farooq from The University of Haripur.

2nd Position: Dr Fatima Sharif, Department of Pathology, Shifa International Hospital

Joint 3rd Position: Nabeel Ahmed, University of Agriculture, Faisalabad & Fakhira Ikhtlaq, Quaid-i-Azam University Islamabad



World Antimicrobials Awareness Week 2020



Analyzing AMR Trends in Pakistan

150 participants attended the webinar which observed trends in AMR Surveillance Data (2017-2019). The data has been maintained by the AMR Surveillance System (PASS), organized by the NIH in collaboration with the WHO.

Learning by Doing

Capacity Development Activities in Human and Animal Health

The national reference laboratories for human and animal health continue to gain support from the Fleming Fund Country Grant Pakistan. Capacity development activities have been expanded into the environmental health sector and provincial human and animal laboratories as well. Over 160 lab personnel were trained in various aspects of microbiology testing, data reporting and laboratory biosafety & biosecurity across Pakistan.



1. AMR Advanced Training

The Fleming Fund Country Grant Pakistan organized AMR advanced training in collaboration with Aga Khan University (AKU) for the staff of the National Institute of Health (NIH), the National Veterinary Laboratory (NVL) and the National Reference Laboratory Poultry Diseases (NRLPD).

2. Mentorship and Support Sessions for Sentinel Labs

The Fleming Fund Country Grant Pakistan in collaboration with the NIH supported capacity development in AMR detection and surveillance for the Bolan University of Medical and Health Sciences (BUMHS), Quetta; Dr Ruth Pfau Civil Hospital, Karachi; and the Jinnah Post Graduate Medical Center (JPMC), Karachi.



3. WHONET for AMR Data Management

DAI Pakistan conducted WHONET Trainings for the Ministry of Climate Change (MoCC) and animal health sentinel sites. The trainings were led by Dr Usman Zaheer of the Fleming Fund Country Grant Pakistan with the assistance provided by Dr John Stelling, the creator of WHONET.



4. Staff Credentialing Workshop

Technical experts from the Aga Khan University supported the National Institute of Health in staff credentialing, as an essential step in obtaining ISO 15189 readiness at Ramada Hotel, Islamabad.



5. Workshop on Patient and Occupational Safety

Organized by the Centre for Occupational and Patient Safety (COPS) at the National Institute of Health (NIH) from 13- 16 October 2020 at Dow University of Health Sciences (DUHS), Karachi. This workshop trained doctors, nurses and paramedical staff to improve safety in healthcare facilities in Karachi.



6. Training Workshop on Bio-risk Assessment in Animal Health

In order to uplift the biosafety and biosecurity standards at the National Reference Laboratories (NRL) a bio-risk assessment workshop was organized from 19-20 November 2020.



7. Point Prevalence Survey (PPS) Training

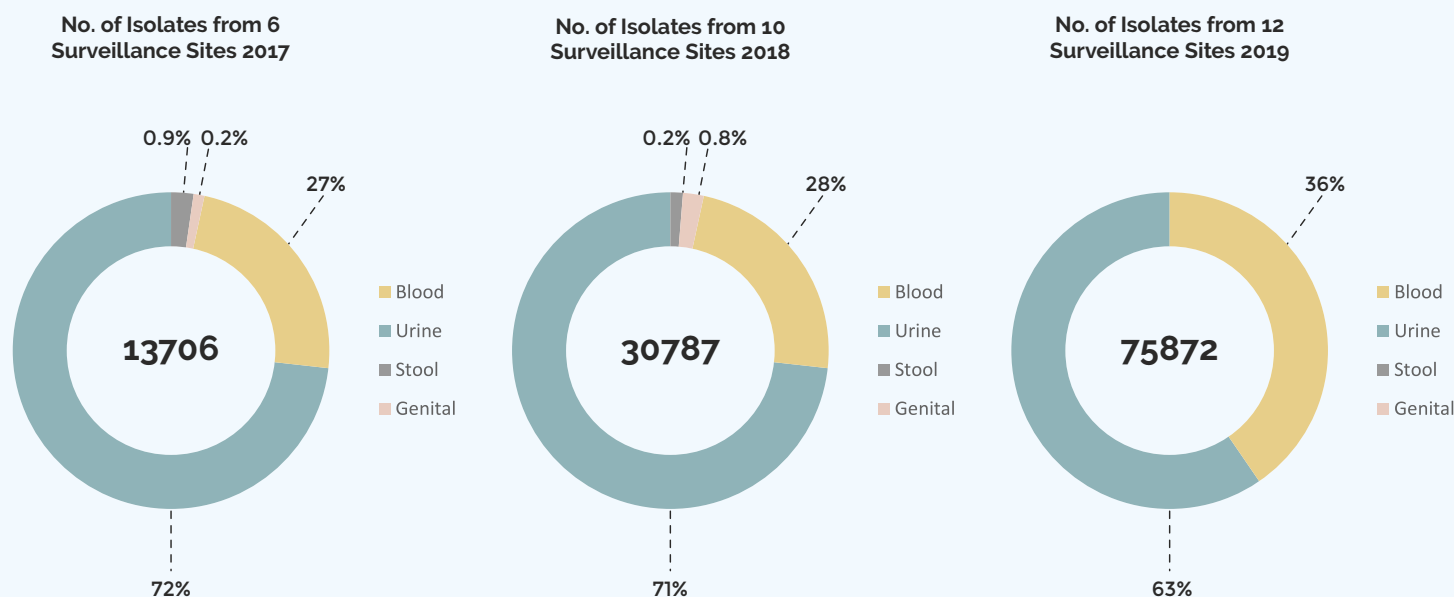
Healthcare professionals were trained from 14 public and private participating hospitals on the standard WHO PPS methodology. A web-based application, KOBO Collect, was used for real time data entry, validation and reporting. In line with the global action plan for antimicrobial resistance, this is the first time that a multicenter, comprehensive point prevalence survey (PPS) of antibiotic use will be undertaken in Pakistan by the NIH in collaboration with the Fleming Fund Country Grant and the WHO.

Strengthening Surveillance

Surveillance is the cornerstone in assessing the spread of AMR in human and animals. A robust surveillance system is key to reliable data collection, interpretation and informed decision making.

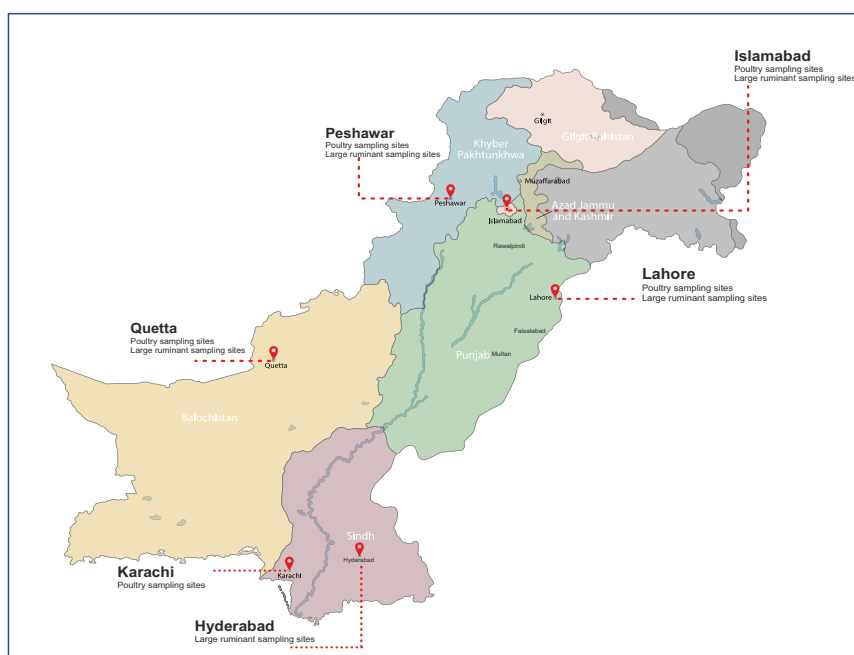
Number of Isolates in Different Types of Human Samples

Every year more labs are being enrolled in the Pakistan Antimicrobial Surveillance System (PASS) led by the NIH. The data shows an increased number of isolates. Increased data reporting allows for improved surveillance.



Surveillance Pilot for Antimicrobial Resistance in Poultry and Livestock

The Animal Husbandry Commissioner (AHC) supervised a surveillance pilot, initiated during July this year (2020). The National Veterinary Laboratory (NVL) and National Reference Laboratory for Poultry Diseases (NRLPD) are leading this effort in livestock and poultry respectively. The surveillance pilot focuses on two commensal bacteria, i.e. *E. coli* and *Enterococcus* spp. Five laboratories across Pakistan are engaged in field activities. A total of 403 caecal samples of poultry and 353 fecal samples of cattle/ buffalo have been collected across the country as of November 30, 2020.

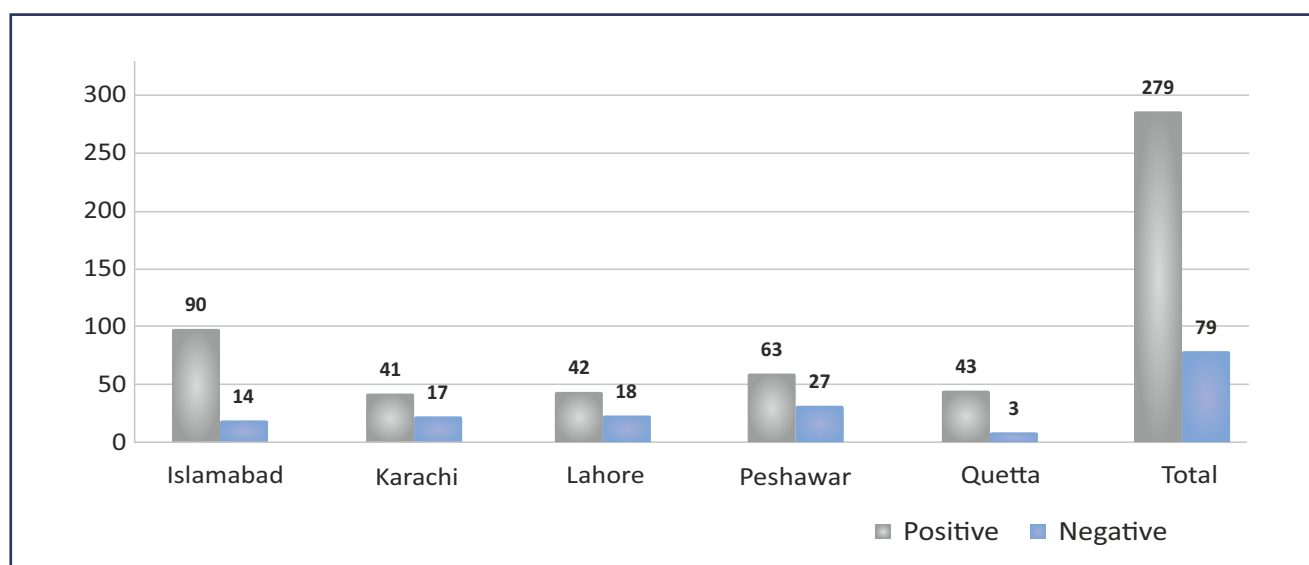


Breaking Barriers

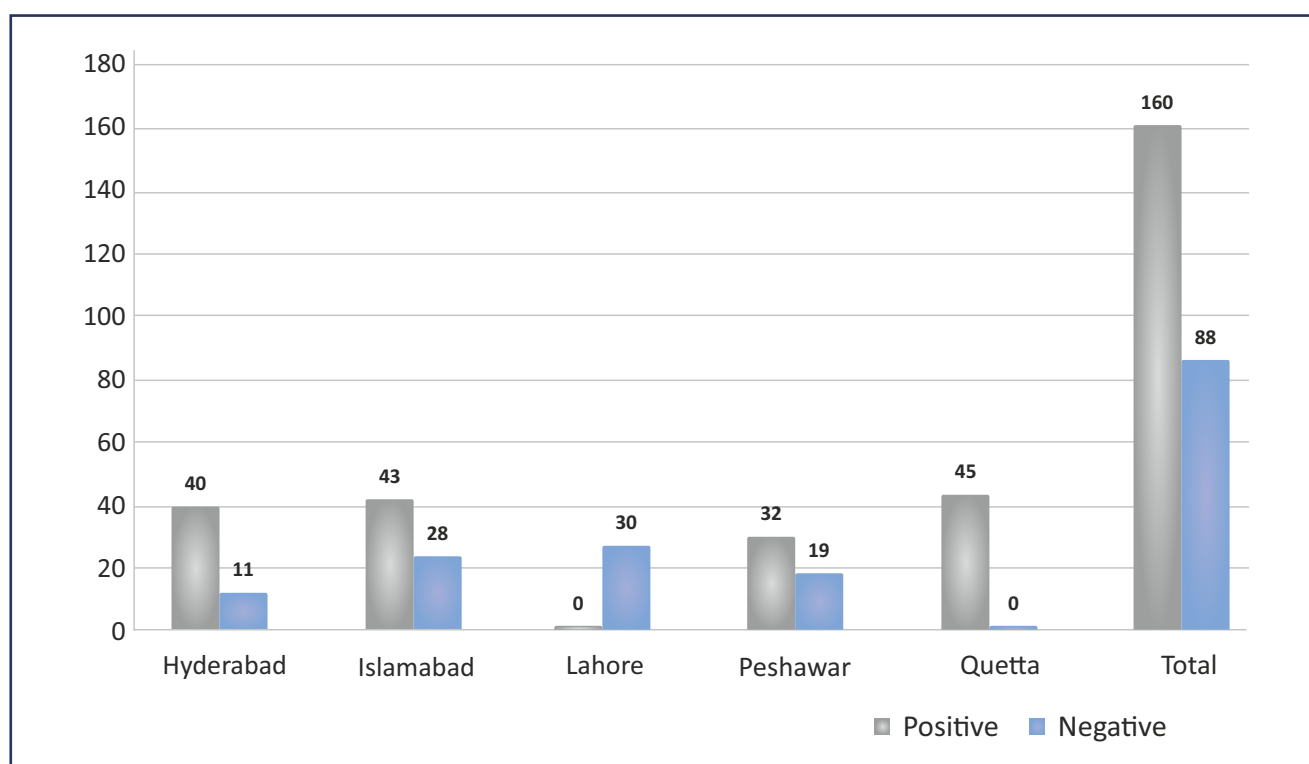
in Animal Health Surveillance

The Animal Husbandry Commissioner (AHC) led the first ever PPS training for estimating the use of antimicrobials in commercial dairy and poultry sectors supported by the Fleming Fund Country Grant. The survey included 12 commercial broiler farms and 12 corporate dairy farms. Antimicrobial use was recorded on a user-friendly Data Collection Tool (DCT) devised from OIE's Terrestrial Animal Health Code. Results from the first round have been analyzed and the charts below show the key antimicrobials used in poultry and dairy sectors

Poultry: Isolation of *E. coli*



Livestock: Isolation of *E. coli*



Capturing data on Antimicrobial resistance Patterns and Trends in Use in Regions of Asia (CAPTURA) Grant

The CAPTURA consortium led by the International Vaccine Institute (IVI) is the Fleming Fund Regional Grant (Round 1) for South and Southeast Asian region with the aim to assist in Pakistan's effort in improving surveillance, containment and awareness of AMR in local, regional and global contexts. The CAPTURA grant works in close collaboration with host government institutions, development partners and the Fleming Fund Country Grant. The grant scope includes:

- Identification and mapping of existing AMR data sources to determine gaps in data analysis and data visualization capacities.
- Collect and analyze exemplar retrospective data and share findings with key stakeholders to facilitate use of quality data for evidence-based policy and practice

-----● SUPPORTED BY ●-----



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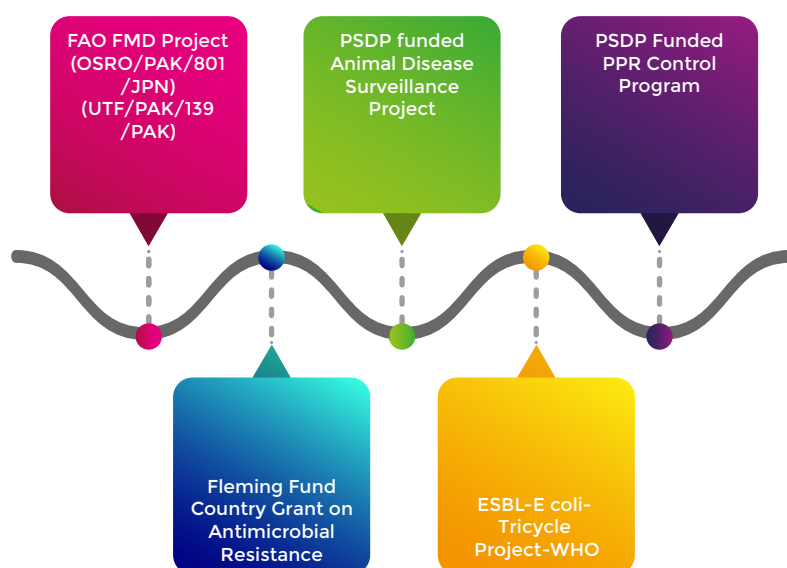
Ministry of National Food Security & Research

We Serve:

1. As National Reference Laboratory for Transboundary Animal Diseases (TADs), diseases of economic importance and zoonosis
2. To carry out residues analyses in livestock and poultry products and by-products to meet EU & WTO sanitary & phyto-sanitary (SPS) conditionalities
3. To test the quality of veterinary drugs and vaccines for their safe and effective use in animals
4. To provide technical support to provincial/regional livestock departments to contain highly pathogenic emerging animal diseases
5. To provide trainings and refreshers in cutting edge diagnostic technologies
6. Serving as National Focal Point for International Health Regulations (IHR) activities and Antimicrobial Resistance (AMR)
7. To coordinate & collaborate with provincial/regional livestock departments and international organizations (the Fleming Fund Country Grant Pakistan, OIE, WHO, FAO, WHO and other Health Security Partners) for the improvement of animal and public health



Collaborative Projects



Defining Excellence

- Pivotal role in Rinderpest (RP) eradication in Pakistan
- ISO/IEC-17025:2005 accredited FMD virus detection & typing facility
- Provided technical backstopping to international laboratories (Afghanistan, Tajikistan, Uzbekistan and Turkmenistan) for TADs (RP, FMD & PPR)
- 100% Result Match in International Proficiency Testing Scheme organized by OIE/FAO FMD-WRL UK since 2012
- Genetic Sequencing of TADs (FMD and PPR) pathogens
- Established National Veterinary Laboratory Network of 16 provincial/ regional labs in Pakistan
- Partnership with international organizations (FAO, WHO and other Health Security Partners) for One health initiatives

Environmental Protection Agency Feature



AMR is an emerging public health concern. Antimicrobials are found not only in human and food animals, but also the environment, more specifically in water sources. There are untreated and treated wastewater effluent which are found in drinking-water sources, wastewater-irrigated foods, aqua cultural systems and other domestic sources. AMR presence in our system is now widely recognized, needs greater, focused and more harmonized consideration as an environmental health hazard and must be addressed through integrated prevention and control measures.

*Farzana Altaf Shah (AMR Environment Focal Person)
Director General
Pakistan Environmental Protection Agency
Ministry of climate change, Islamabad*

The Pakistan Environmental Protection Agency (EPA)

is an attached department of the Ministry of Climate Change. The EPA is responsible in implementing the protection, conservation, rehabilitation, and improvement of environment, for the prevention and control of pollution, and promotion of sustainable development. Thus, it is imperative to monitor the water quality in Pakistan to improve sanitation and drinking water, which in turn tackles AMR. Pak EPA was nominated as a focal point as a national core group along (NIH, NVL, M/o NHSRC, WCO) May 2017.



Achievements of the Partnership

Successfully implemented the WHO's Tricycle project on ESBL producing E. Coli surveillance

01

WHO leads global efforts to prevent transmission of waterborne diseases.

02

Through this partnership, health-based regulations were promoted.

03

Effective risk management practices were identified to water suppliers, communities and households.

04



The Fleming Fund

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AMR Membership Network NIH

Please click on the link for AMR Membership form

<https://www.nih.org.pk/amr-membership/>

