Bangladesh AMR Newsletter

The Global Leaders Group hosted side event at UN General Assembly on AMR

The Global Leaders Group co-chairs, Their Excellencies Sheikh Hasina, Prime Minister of Bangladesh and Mia Amor Mottley, Prime Minister of Barbados, hosted a UN General Assembly side event to discuss and address antimicrobial resistance (AMR) with Heads of Government and State, government Ministers and relevant stakeholders.

Her Excellency Sheikh Hasina
Prime Minister of Bangladesh

"Urgent action is required to stop the spread of antimicrobial resistance. Without action, we face a future where we will be unable to treat infections in humans, animals and plants. We must work together to protect our medicines" said co-chair of the Global Leader Group on AMR Her Excellency Sheikh Hasina, Prime Minister of Bangladesh.

Mr. Zahid Maleque, MP, Honourable Minister, Ministry of Health and Family Welfare, Bangladesh was also present in the meeting

Source: https://www.who.int/news/item/22-09-2022-the-global-leaders-group-host-side-event-at-un-general-assembly-on-antimicrobial-resistance-(amr)

Editorial

Reliable data on antimicrobial resistance (AMR) is one of the most important resources for taking evidence-based policy decisions and supporting National AMR Containment (NARC) Programme. At the same time, they are valuable to practitioners for prescribing antimicrobials rationally while treating individual patients. To this end, with support from the Fleming Fund, NARC has completed refurbishment and installation of equipment at 12 designated laboratories of human and animal health and aquaculture sectors. At the same time, a series of advanced trainings have been provided to enhance the capacity of these laboratories. These laboratories in the government setup are now fully functional. With support of these laboratory capacities, AMR surveillance program has now entered into a new phase of standard and is being integrated with other related programmes including diagnostic stewardship, antimicrobial stewardship, and infection prevention and control (IPC) programme at the hospitals. Further, a new initiative is underway to collect AMR data from the selected private sector laboratories as a part of AMR passive surveillance in human health sector which will also contribute to increased AMR data generation. These synergies and extension of the related programs will ensure sustainability and strengthen effective implementation of the AMR containment programs of the country in a collaborative way.

Prof. Dr. Md. Nazmul Islam
Chief Editor, Director, Disease Control and Line Director, CDC

Using Evidence to influence Policy in Bangladesh

Bangladesh is one of the Fleming Fund-supported countries pioneering the 'Evidence to Policy' approach in addressing AMR. Bangladesh played a key role in the co-development of the RADAAR project's 'Advocacy to Drive AMR Policy: A Country Guide' from February-July 2022. The Guide provides a practical, step-by-step approach to raising AMR on the policy agenda, engaging and influencing policymakers, and informing and supporting the implementation of AMR National Action Plans (NAPs). RADAAR is the only Fleming Fund regional project fully dedicated to the thematic domain of 'Policy, Planning, and Advocacy'.

Bangladesh participated in and contributed to regional data and policy workshops, the policy webinar 'The Gamechangers' series, and other RADAAR events, contributed to develop the Guide, reviewing Guide sections, and contributing three 'Case Studies' highlighting replicable practices to contain AMR:

- **Political economic analysis for AMR containment advocacy**
- **Using economic evidence for policy advocacy**
- **Media engagement for policy advocacy**

Implementing national multisectoral stewardship plan in Bangladesh

Antimicrobial resistance (AMR) is a silent future pandemic. Scientists predict that, besides the morbidity consequences, the world will face more than 300 million deaths and $100 trillion economic losses between now and 2050, if no action is taken. Consequently, more than 24 million people in low- and middle-income countries will be forced into extreme poverty.

Misuse and overuse of antimicrobials including antibiotics in human, animal and food commodities, inadequate water, sanitation, and hygiene (WASH) practices; and inadequate infection prevention and control (IPC) effort particularly at the facility level are the major factors for developing or spreading resistant pathogens. The available antimicrobials or antibiotics will not be able to kill or suppress the resistant pathogens. Hence, people will be helpless and will die due to ineffectiveness of drugs, thus emerging a silent pandemic.

The World Health Organization (WHO) is considering the AMR issue as one of the top ten public health threats and recommended the national action plan (NAP) including antimicrobial stewardship (AMS). In 2015, during World Health Assembly (WHA), most of the participating countries, including Bangladesh, committed to adopt NAP. The USAID MTaPS program in Bangladesh has been providing technical assistance and advisory support to the Government of Bangladesh in development of the NAP. Both IPC and AMS at the facilities play important role in preventing AMR development, and may be implemented together in synergy.

AMS is critically important to contain the AMR. Hence, MTaPS assessed the baseline status, including existing policy, practices and guidelines in human and animal health sectors and drafted a national multisectoral AMS plan engaging relevant stakeholders, policy makers through the leadership of Communicable Diseases Control (CDC) of Directorate General of Health Services (DHGS). The plan would prevent the development of resistance, reduce the morbidity consequences, costs and reduce the premature deaths.

On August 16, 2022, a workshop facilitated by MTaPS was held by the CDC-DGHS with participation of all relevant stakeholders to discuss the baseline findings and the draft plan on AMS prepared by MTaPS. It was an important step towards finalizing and adopting a national AMS plan and its' implementation in Bangladesh.

Review of national multisectoral AMS plan by national authority and stakeholders, 16 Aug. 2022

Research findings dissemination: Bangladesh Livestock Research Institute (BLRI)

Bangladesh Livestock Research Institute (BLRI) arranged a workshop for dissemination of research findings on antimicrobial resistance (AMR) on 19 July 2022 in the Intercontinental Hotel, Dhaka. Mr. S M Rezaul Karim, MP, Honorable Minister, Ministry of Fisheries and Livestock (MoFL) graced the workshop as Chief Guest. Dr. Mohammad Yamin Chowdhury, Secretary, MoFL was the Special Guest and Dr. Monjur Mohammad Shahjada, Director General, Department of Livestock Services was the Guest of Honor in the workshop. Dr. Mohammed A. Samad, project director presented the findings of the research. Prof. Dr. Nitish Debnath, FFCGB along with Prof. Dr. Md. Sayedur Rahman, BSMMU and Prof. Dr. Tahmina Shirin, IEDCR delivered expert opinions on how best the research findings could be used in combating the threats of AMR. The workshop was Chaired by Dr. S M Jahangir Hossain, Director General, BLRI.

Dr. Samad, in his presentation, informed that *Enterococcus* spp. was recovered from 57% of the samples tested. Prevalence was higher (62%) in the samples collected from farms (layer, broiler, cattle, goat and camel) compared to the fresh retail meat samples (41%) from broiler, cattle and goats. *Enterococcus* spp. exhibited resistance to tetracycline (74%), erythromycin (65%) and ciprofloxacin (34%). The study on samples collected from chicken processing environments at wet market revealed the prevalence of virulent *Salmonella enterica* serovars to be around 20% in carcass dressing water. Around 71.41% of the isolates were multidrug resistant (MDR). Another study on the caecal contents of chickens, collected from wet markets, showed the prevalence of *Salmonella enterica* serovars in broiler, sonali and native chickens to be 8.62%, 6.89% and 3.1% with the MDR being 84%, 75% and 44% respectively.

Mr. S M Rezaul Karim, MP, Honourable Minister, Ministry of Fisheries and Livestock (MoFL), graced the workshop as Chief Guest and delivered his speech.

Infection prevention and control (IPC) activities of CDC, DGHS at Taraganj UzHC.

Planning meeting and sharing IPC documents with UHFPO Taraganj UzHC

IPC training at Taraganj UzHC

'Community Solutions to Antimicrobial Resistance (COSTAR)' A New Approach to National AMR Containment Program

'Community Solutions to Antimicrobial Resistance (COSTAR)' is a project of ARK Foundation initiated with the aim to engage communities in Bangladesh and Nepal to address the challenges of antimicrobial resistance (AMR) in both countries. ARK Foundation, the implementor of the COSTAR project, has emerged as a new partner of the National AMR Containment Program. Recently this partnership has been formalized through signing of a memorandum of understanding (MOU) between Communicable Disease Control (CDC) unit, Directorate General of Health Service (DGHS) and ARK Foundation that took place on 6th August 2022 at a hotel in Dhaka.

Professor Dr. Md. Nazmul Islam, Director, Disease Control and Line Director, CDC, DGHS and Professor Rumana Huque, Executive Director, ARK Foundation signed the MoU for the respective organizations.

Professor Dr. Ahmedul Kabir, Additional Director General (Administration), HSD, MOHFW graced the ceremony as the Chief Guest. The ceremony was chaired by Professor A H M Enayet Hossain, Director General (Retired), DGME, MOHFW. The program was moderated by Dr. Fariza Fieroze, Research Associate, ARK Foundation.

A brief presentation on Antimicrobial Resistance Containment Program in Bangladesh was presented by Dr. Aninda Rahman, DPM, CDC, DGHS. Professor Rumana Huque provided a brief overview of COSTAR project. An open discussion among the presented stakeholders was moderated by the Honorable Chair of the program Prof. Dr. AHM Enayet Hossain. During the discussion, the participants underscored the critical role of community awareness in preventing and controlling irrational use of antimicrobials and expressed hope that COSTAR would be able to provide significant contribution in this regard.

Professor Dr. Tahmina Shirin, Director-IEDCR, Prof. Nitish C Debnath, Team Leader, Fleming Fund Country Grant to Bangladesh, DAI LLC, Dr Khaleda Islam, Director PHC (Retired), DGHS and Badruddin Saify, Research Assistant, ARK Foundation were among the dignitaries present during the occasion.

Professor Dr. Ahmedul Kabir, Additional Director General (Administration), DGHS who graced the ceremony as the Chief Guest delivering his speech

Professor Dr. Md. Nazmul Islam, Director, Disease Control and Line Director, CDC, DGHS and Professor Rumana Huque, Executive Director, ARK Foundation signed the MoU.

All the dignitaries' oF DGHS, ARK Foundation, Fleming Fund Country Grant, IEDCR

Environmental surveillance of SARS-CoV-2 and other enteric pathogens in Dhaka and the Rohingya camps: IEDCR and icddr,b Joint initiative

Dhaka, Bangladesh, 10 August 2022, the Environmental Interventions Unit (EIU) of icddr,b in collaboration with the Institute of Epidemiology, Disease Control and Research (IEDCR), Directorate General of Health Services (DGHS), Government of Bangladesh, launched a new initiative to undertake environmental surveillance of SARS-CoV-2 and enteric pathogens in Dhaka and in the camps where Forcibly Displaced Myanmar Nationals (FDMN) live, commonly known as Rohingya camps. The event was held at the Renaissance Dhaka Gulshan Hotel, Dhaka.

Under the initiative, wastewater samples will be collected from selected spots comprised of drains, canals, and pumping stations in selected areas of Dhaka city and in the Rohingya camps. Subsequently, it will attempt to track and monitor four vaccine-preventable pathogens including *Salmonella typhi, Vibrio cholerae*, Rotavirus of enteric pathogen and SARS-CoV-2, in the communities. The benefit of environmental surveillance is multifaceted – it is highly cost-effective and supplementary to the clinical surveillance system, it provides early warnings, data generated are free from bias by healthcare access or healthcare behaviour, it is effective in both symptomatic and asymptomatic infections, and evidence from environmental surveillance can be helpful for planning public health emergency responses – including in health communications, health facility preparedness, and vaccination campaigns.

The Honourable Mayor of the Dhaka North City Corporation (DNCC) Mr. Md. Atiqul Islam graced the meeting as Chief Guest while Engineer Taqsem A Khan, Managing Director and CEO of Dhaka Water Supply and Sewerage Authority (DWASA) attended as the Special Guest. The meeting was presided by Prof. Dr Tahmina Shirin, Director, IEDCR.

The environmental surveillance initiative will be implemented in cooperation with the Dhaka North City Corporation (DNCC), Dhaka South City Corporation (DSCC), Dhaka Water Supply and Sewerage Authority (DWASA) in Dhaka, the Department of Public Health Engineering (DPHE), Refugee, Relief and Repatriation Commissioner (RRRC), and Office of the Civil Surgeon, Cox's Bazar. The Center for Global Safe Water, Sanitation and Hygiene at Emory University, USA, will provide technical assistance, while The Rockefeller Foundation, USA, will provide financial assistance.

National and international public health experts, representatives from the DGHS, IEDCR, Emory University of USA, and icddr,b were also present at the event.

Mr. Md. Atiqul Islam, Honorable Mayor, Dhaka North City Corporation expressed his kind support for wastewater surveillance initiative in Dhaka

Study team of IEDCR, icddr,b, DNCC and DWASA and Rockefeller Foundation

Study of antimicrobial use (AMU) in food animals in Bangladesh

Antimicrobial use (AMU) surveillance in food animals is very important for containment of antimicrobial resistance in the animal health sector. In Bangladesh, one of the activities in this regard is a study of AMU in food animals being conducted currently through collection of real-time data on antimicrobial use and quantification of antimicrobials used in the poultry and dairy farms.

The study is being conducted in Gazipur and Chattogram districts under the supervision of the Epi Unit of the Department of Livestock Services (DLS) where, Fleming Fund Country Grant to Bangladesh is providing technical and financial support. District Livestock Officers (DLO) from Gazipur and Chattogram were involved in selecting the poultry and dairy farms. Owners/managers of the selected farms and the data collectors from the two districts were provided orientation on antimicrobial resistance (AMR) and on the importance of antimicrobial containment (AMC) along with a hands-on training on recording data and collection and storage of empty sachets/vials of antibiotics in the trash cans.

One officer on behalf of the Epi Unit, DLS and data collectors are involved with the study for regular supervision and monitoring of the activities of the program. A total of 6 dairy, 6 layer and 6 broiler farms each from Gazipur and Chattogram districts (totaling 18+18=36 farms) are included for the study. Data collection to be conducted during two seasons, summer (June to August) and winter (December to February). Data collection during the summer season has been completed. Calculation of quantification (using appropriate AMU metrics) of the antimicrobials used (milligrams of antimicrobials used per kilogram of estimated animal biomass) in the dairy and poultry farms is in progress.

Meeting with DLO Gazipur and Chattogram for farm selection

Farmer's training at Gazipur and Chattogram on monitoring of AMU at farm level

Farmer from a dairy farm is seen recording antimicrobial use data and storing zipper bags containing empty sachets/vials of antibiotics in a trash can

Increasing Capacity of Microbiology Laboratory of Chittagong Medical College: AMR Surveillance System Strengthening

Chittagong Medical College, Chattogram, is one of the oldest medical colleges in Bangladesh established in 1957. The microbiology department of the medical college was located in the ground floor of the two-story building since inception of the medical college. Government of Bangladesh has selected Chittagong Medical College and Hospital as one of the sentinel sites along with 4 others for implementing the antimicrobial resistance surveillance program in the country. This program receives support from the UK Government's Fleming Fund, specifically, through the Fleming Fund Country Grant to Bangladesh starting from January 2020. One of the important areas of support involves enhancement of capacity of the surveillance sites and more specifically, building of laboratory capacity for detection of microorganisms and their susceptibility or resistance pattern in a safe and biologically secure laboratory equipped with modern equipment that are operated by well-trained microbiologists and technicians. As part of this activity, the medical college authority allocated a space in the newly constructed building of the college for refurbishing and setting it up of the new microbiology laboratory. , which was previously allocated for the college library. Following the refurbishment work carried out through FFCGB, a completely new laboratory with BSL2 facility, furnished with modern equipment like automatic blood culture machine, Biosafety Cabinets, Laminar Airflow and provided with "Heating, Ventilation, and Air Conditioning" or HVAC system has been established as the microbiology laboratory of the medical college. FFFCGB has supported similar refurbishment work in another 4 medical colleges and in five laboratories belonging to the animal health sector.

With upgrading of the laboratory facilities, the quantity and quality of services provided are on the rise as evidenced by the increase in number of samples tested for identification of the bacteria and the sensitivity tests.

A team from FFCGB and IEDCR visiting Chittagong Medical College Laboratory

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