

တင်ပြဆွေးနွေးချက်များ (Documents and Presentations)

Activity 3. Two-day workshop for prioritization of research areas on AMR on 7-8 November 2019

1. Background

Myanmar has a high burden of emerging and re-emerging infectious diseases. In order to tackle the growing problem of antimicrobial resistance (AMR) in the country, the need arises to promote evidence-based findings with available resources. In 2016, WHO-SEARO has laid down a road map to establish the strategic research agenda with systematically prioritized research areas. Current research activities in Myanmar over the past decade concerning antimicrobial resistance covered awareness of antimicrobial resistance and rational use of antibiotics, antimicrobial susceptibility patterns of multi-drug resistant bacteria, hospital infection control, WASH and waste management, antimicrobial use in animal health sector, bioavailability, bio-effectiveness, sub-standard drugs and pharmacokinetic studies etc. The sources of recent evidence for policy, program and practice related to AMR in Myanmar mainly originate from academic institutions including universities and Department of Medical Research, laboratory surveillance reports from the service sector and the existing hospital data.

In early 2019, the mission from WHO-TDR Headquarters visited Myanmar to discuss with concerned stakeholders about the Structured Operational Research Training Initiative (SORT-IT)-AMR (2019-2022) in the Southeast Asia Region (SEAR). In response to the regional call, six participants from Myanmar attended the Regional Structured Operation Research and Training Initiative (SORT-IT) course in July 2019. Further research capacity strengthening and knowledge management issues related to AMR is critical in various dimensions. The stakeholder consultation meeting that involved senior personnel conducted in 23 September 2019 planned the preliminary agenda of this present workshop (Annexes 1 and 2) to target senior and mid-level scientists who worked on AMR research from Departments under the Ministry of Health and Sports (MoHS) and the Ministry of Agriculture, Livestock and Irrigation (MoALI) (Annex 3). The major focus was on prioritization of research areas on AMR

to formulate a research agenda in accordance with the five strategic objectives of National Action Plan (NAP) for AMR.

2. Activities and output

Day One (7 November 2019)

At the opening session of ‘Research Prioritization Workshop on Antimicrobial Resistance’, Professor Zaw Than Htun, Director General, Department of Medical Research has delivered the welcome speech. He has highlighted five strategic objectives of the Global Action Plan on AMR (GAP-AMR) with specific focus on the participation of stakeholders from both human and animal health sectors to deal with growing antimicrobial resistance (AMR) in Myanmar. In addition, he has stressed the role of evidence-based research findings to support the formulation of strategic actions of National Coordinating Centre (NCC) which is in line with the recently developed National Action Plan on AMR (2017–2022).

Next, Dr. Stephen Paul Jost, WHO Representative to Myanmar in his key-note speech has elucidated antimicrobial resistance as a serious threat to public health that jeopardized global progress to achieve SDG goals number 1,2,3,6,8,12 and 17 thereby becoming a prioritized agenda in the Southeast Asia Region (SEAR) including Myanmar. Moreover, he emphasized the investment for AMR research by coordinated efforts and multi-sectoral approach and the importance of AMR Research Prioritization Workshop in implementing the National Action Plan for AMR particularly for *Strategic intervention 5.1: Generate cost effectiveness and benefit evidence for reducing AMU & AMR; develop a national strategic research agenda.*

At the beginning of the morning session, Dr. Hlaing Myat Thu, Deputy Director General, Department of Medical Research has clarified the overview and objectives of the workshop as follows:

- *Specific objective 1:* To prioritize the research areas on AMR in Myanmar;
- *Specific objective 2:* To formulate a research agenda basing upon the pressing needs and in accordance with the five strategic objectives of NAP on AMR;

- *Specific objective 3:* To support the activities of National Coordinating Center for AMR through the formulation of National Health Research Agenda

Professor Htay Htay Tin (Deputy Director General, Department of Medical Services cum Secretary of NCC for AMR) presented the National AMR Action Plan in line with GAP-AMR inclusive of development of the National AMR surveillance system, antimicrobial stewardship and surveillance of antimicrobial use, infection prevention and control in healthcare settings, awareness raising, research and innovation and One-Health engagement. Each of these focus areas were consistent with the five strategic objectives of the WHO GAP-AMR. Building blocks of an effective NAP (AMR) covered a strong laboratory network, existing infection control and biosecurity programs in human and animal health sectors and a National One Health Strategy. She has stressed the research gaps especially for the AMR surveillance system.

Dr. Wah Wah Aung, Director (Advanced Molecular Research Centre), Department of Medical Research presented the decade compilation of “Components of Research Findings related to AMR in Myanmar” followed by the presentation of Dr. Min Thein Maw, Director (LBVD) on “One Health and AMR research priorities in Myanmar”.

Before the end of the morning session, Dr. Khin Thet Wai, Director (Retired), DMR made the presentation on “Priority research areas for AMR in Myanmar and generating research questions” in which she has addressed the concept of research prioritization as a supportive action for development, equity and health and key steps in research prioritization which was in line with *Priority Setting for Research for Health. A management process for countries. Council on Health Research for Development (COHRED), 2010*. Furthermore, the context of different research areas to generate research questions, followed by setting priority among research questions generated by grouping, scoring and ranking were explained. The final step was to formulate the research agenda considering for resources and the timeline. Improve awareness and understanding of antimicrobial resistance. Priority areas stated were to strengthen the knowledge and evidence base through surveillance of AMR; to reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures and to optimize the use of antimicrobial medicines in human and animal health. Research gaps highlighted covered awareness of AMR,

antibiotic consumption, antibiotic availability, antibiotic prescription, underestimation of AMR, inadequate preventive measures, indiscriminate antibiotic use in the animal sector and agriculture and transmission of AMR in the environment.

Dr. Wah Wah Aung gave the briefing on Group Exercise 1 (Fore-sighting techniques) and the participants were divided into four groups after lunch for generating research questions on AMR. Altogether 10 facilitators assisted the groups (Annex 4) based on their rich experience and reading materials provided. The list of secretariat was provided in Annex 5.

Day Two (8 November 2019)

At the beginning of the morning session, Dr. Saw Saw, Deputy Director General, DMR (Pyin Oo Lwin Branch) shared the comprehensive information on Regional and National SORT IT Courses for AMR. The Plenary Session (1) was chaired by Dr. Hlaing Myat Thu, Deputy Director General, DMR. After the finalization of their group work (1), representatives from each group presented the generated research questions and discussed on related issues. For each research question, the common matrix provided covered: justification, gap, area, contribution towards National AMR Policy and collaborators.

Before lunch, Dr. Khin Thet Wai, Director (Retired), DMR presented the key issues on “Priority setting and translation of research evidence in AMR into policy and practice” citing examples by infographics. This was followed by briefing on Group Exercise (2): Grouping and Ranking Techniques by pair-wise comparison and to emanate five research questions per group as a first priority in formulating the research agenda. Each group selected their priorities based upon discussion of five issues in each and every pair of research question: inter-sectoral approach and multidisciplinary nature, burden of disease, risk factor analysis of persistence of disease burden, Knowledge of cost-effectiveness of existing interventions, Potential gain from research and availability of resources. Through ranking, priority group (1) included ten research questions that covered the areas of awareness of AMR, antimicrobial usage, AMR surveillance, and infection prevention and control. Group outputs in terms of priority groups (1 to 3) were attached in Annex 6.

The final Group Exercise (3) was on formulating the research agenda. Dr. Khin Thet Wai clarified the components of a work plan: expected outputs, people involved and their responsibilities, data collection and analysis plans, communication plan, monitoring and evaluation plan, timeline and budget. In the given matrix, each group filled up their outputs in terms of collaborators, intended method of data collection, planned target group, proposed timeline and the estimated budget for five selected research questions per group. Plenary Session (2) was chaired by Professor Zaw Than Htun, Director General, DMR. Group works were presented by representatives of each group. Following the concluding remarks and the certificate awarding (Annex 7), the two-day workshop came to an end at 4:30 PM.

Priority Research Questions Group (1)

1. What are the challenges and barriers in the establishment of antibiotic guidelines and antibiotic stewardship program at the public and private hospitals?
2. What are the factors influencing on adherence to antibiotic therapy at private clinics (Doctors' and patients' perspective)?
3. What are antimicrobial resistance pattern and associated risk factors among *Neisseria gonorrhoeae* infected patients attending STD clinic?
4. What is the effectiveness of targeted surveillance for control of Methicillin Resistant *Staphylococcus aureus* (MRSA) in tertiary care hospital setting?
5. What are the currently circulating serotypes and antibiotic resistant pattern of *Streptococcus pneumoniae* in post PCV vaccination era among under 5 children?
6. What is the pattern and trend of antimicrobial usage in food producing animals?
7. Can behaviour change intervention affect the antibiotic selling practice of pharmacy?
8. What is the level of antimicrobial residues in food from animal origin (egg, milk, meat, aquaculture, apiculture)?
9. What are health care associated infections in tertiary level hospitals and it's causes?

10. What are challenges of selected tertiary and secondary hospitals to establish effective infection prevention and control (IPC) program by WHO core components?

Priority Research Questions Group (2)

1. What are the factors influencing on antimicrobial prescription among health care providers at public sector?
2. What is the impact of awareness raising program of antimicrobial resistance in animal husbandry?
3. What are the perception and practice of drug sellers on antibiotic sales?
4. How to improve the quality of AMR data in AMR sentinel sites in Myanmar?
5. Are there contamination of Carbapenem Resistant Enterobacteriaceae (CRE) in hospital waste water in NOGTH?
6. What is the pattern and volume of antimicrobial usage in private hospitals?
7. Can Continuing Medical Education (CME) to health care providers and GPs improve antibiotic prescription pattern?
8. What is the degree of interspecies transfer of AMR genes (Human, Animals and Environment)?
9. Is the hand hygiene practice among health care workers improving after intervention in Tertiary hospitals?
10. What are the challenges in effective hospital waste management in selected hospital?

Priority Research Questions Group (3)

1. Is it need to be added AMR teaching program in undergraduate curriculum in medical and allied universities?
2. How the training programs will effect on antibiotic prescription practices among GP in acute respiratory infection?
3. What is the extent of antibiotic self-medication and its determinants among rural community?

4. What is the effectiveness of introducing the modified Carbapenem Inactivation Method (mCIM) in routine identification of carbapenem resistant Enterobacteriaceae in Tertiary hospital?
5. What is the effectiveness of detecting Salmonella and Shigella in food handlers?
6. What are the prevalence and resistant patterns of group A*anti-TB drugs (Levofloxacin/ Moxifloxacin, Bedaquiline, Linezolid) for RR-TB/MDR-TB patients in Yangon Region?
7. What are the patterns of antibiotic usage and antimicrobial resistance in different wards of tertiary hospitals?
8. Are antibiotic prescriptions in tertiary hospitals relying on Culture and Sensitivity results?
9. Is the current Infection Control Committee in hospitals effectively functioning or not? (*Evaluation and challenges*)
10. What factors influence the doctors' practice of infection prevention and control in selected tertiary hospital of Myanmar?
11. What are the knowledge, attitude and practice of hospital general workers towards infection control measures and factors influencing in maintaining sanitary environment?
12. What are the incidence and risk factors of peripheral intravenous cannula related infections and complications in hospital setting?
13. What are the current knowledge, attitude and practice of livestock farmers and vets on antimicrobial usage?
14. What is the situation of usage of shared class of antibiotics among human, animals and environment?
15. What is the prevalence of resistant gene used in probiotic bacteria?
16. Are all the registered antibiotics has therapeutic efficacy? (aim for BE center development)