Approaches and Tools for Strengthening Pharmaceutical Systems

Containing Antimicrobial Resistance through Stewardship in the Context of Pharmaceutical Systems Strengthening: Approaches and Tools

Fozo Alombah
Principal Technical Advisor
USAID MTaPS Program

Importance of antimicrobial stewardship in pharmaceutical systems (1)

- Antimicrobial resistance (AMR) refers to changes in microbes that render antimicrobial medicines less effective.

- The rate of AMR continues to increase, making treating infections harder—and in some cases, impossible—with existing antimicrobial medicines.

- WHO ranks AMR as one of the 10 greatest global public health challenges

  - An estimated 1.27 million deaths worldwide were directly attributable to AMR bacterial infections in 2019, more deaths than those caused by HIV/AIDS or malaria.

  - The burden is highest in low- and middle-income countries (LMICs), with sub-Saharan African countries experiencing the greatest number of deaths attributable to AMR, followed by South Asia.

Antimicrobial Resistance
A specialized newsletter of WHO

World Health Organization

Preserving the effectiveness of existing antimicrobials is necessary for treating infections and saving lives.

Importance of antimicrobial stewardship in pharmaceutical systems (2)

LMICs face key challenges in their pharmaceutical systems, including:

- High out-of-pocket expenses for medicines

- Substandard and falsified products—approximately 10% of medical products in LMICs (WHO, 2018)

- Inappropriate use of medicines—only 30-40% of patients are treated according to clinical guidelines and only about 50% of patients adhere to treatment regimens (WHO, 2011)

These PS challenges all contribute to AMR.

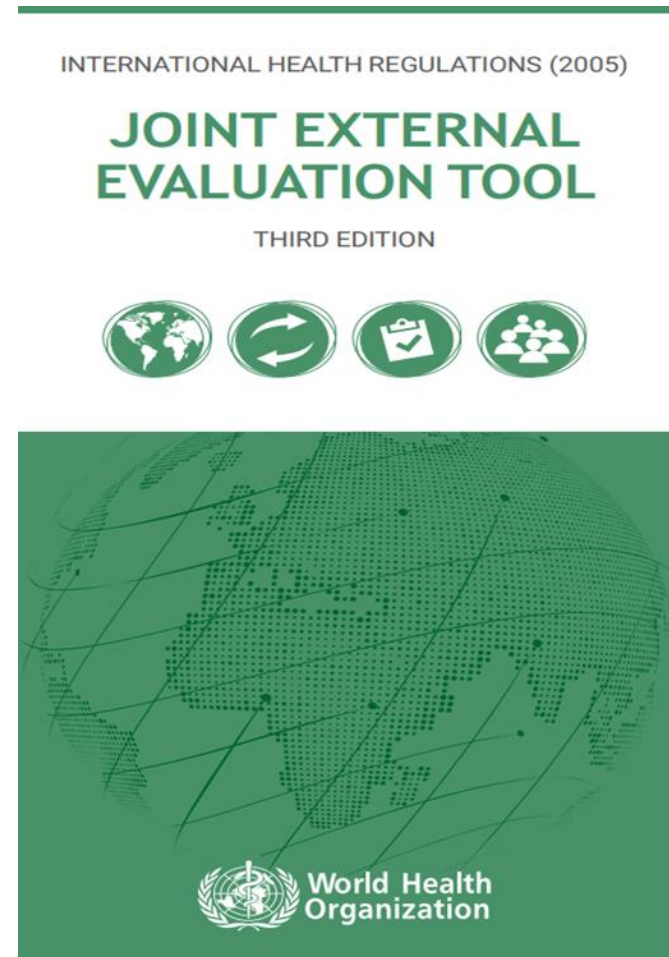# Importance of antimicrobial stewardship in pharmaceutical systems (3)

Effective antimicrobial stewardship (AMS) programs—at both the national and facility levels—are important for AMR containment. These programs focus on optimizing the use of antimicrobial medicines and curtailing their misuse to:

- Prevent the emergence and transmission of infections caused by multidrug-resistant organisms

- Ensure sustainable access to effective therapies

Approaches and tools MTaPS has been using to improve AMS (1)

- MTaPS' GHSA support for AMR containment is rooted in a systems strengthening approach that focuses on:
  - Effective multisectoral coordination on AMR
  - Infection prevention and control (IPC) AMS
- MTaPS uses an iterative mixed methods system-focused process to help develop countries' capacity through incremental improvements toward the goal of reaching highest scores (sustainable capacity level 5) in the established (JEE) scores for sections
- National and facility level committees are at the heart of program development (assessments, plan development, implementation monitoring, and progress mapping) and practice improvement

INTERNATIONAL HEALTH REGULATIONS (2005)

JOINT EXTERNAL EVALUATION TOOL

THIRD EDITION

World Health Organization

Approaches and tools MTaPS has been using to improve AMS (2)

- MTaPS' multisectoral coordination work brings together stakeholders from all sectors to strengthen capacities and systems across sectors to respond to two key indicators of the recently released version 3 of the WHO JEE framework:

  - P4.4. Optimal use of antimicrobial medicines in human health

  - P4.5. Optimal use of antimicrobial medicines in animal health and agriculture

- Main tools used are:

  - WHO JEE 2019 Benchmarks tool

  - WHO 2019 Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: a WHO practical toolkit

  - WHO Methodology for Point Prevalence Survey (PPS) on Antibiotic Use in Hospitals

  - Local country-developed tools

Approaches and tools MTaPS has been using to improve AMS (3)

Central-level approaches and tools

- Assess AMS capacity at the national and facility levels and develop action plans

- Mobilize stakeholders and build coalitions around AMS activities

- Help develop national-level policies, guidelines, and standard operating procedures

- Provide technical support to group antibiotics into the access, watch, and reserve (AWaRe) categories following WHO guidance

- Reform pre-service and in-service curricula with a focus on core competencies

- Educate patients and the public through customized materials/messages and media

- Build capacity through tools, job aids, supportive supervision, and continuous quality improvement

- Monitor country adherence to recommended policies, guidelines, and practices

Approaches and tools MTaPS has been using to improve AMS (4)

Facility-level approaches and tools

- Develop and use detailed miniguide and checklist that elaborates on the steps from the WHO toolkit and provides a visual way to track progress

- Tailor support to each facility, recognizing the varying strengths and weaknesses and current level of AMS activities in the facility

- Establishing AMS programs using the steps outlined in WHO's AMS toolkit

    - Baseline assessment of core elements AMS program

    - Establishment/strengthening of facility committees (AMS, DTC*)

    - Iterative annual workplan development, implementation, monitoring (CQI)

    - Antimicrobial use and consumption monitoring

    - Repeat assessments

*DTC – drug and therapeutics committee

Case study: AMS in Kenya

Institutionalizing AMS learning in Kenya

In Kenya, MTaPS has been supporting efforts to institutionalize learning on AMS, both for pre- and in-service training:

- MTaPS collaborated with regulatory authorities and professional associations to develop and launch an in-service, continuing professional development (CPD) virtual course on AMS.
  - Nine modules provide training on the practical aspects of AMS in health care settings.
  - Course completion earns participants CPD points, which are needed for their annual practice license renewal.
  - Between October 2020 and June 2022, over 1,700 health care workers were trained, including medical laboratory scientists, doctors, nurses, and pharmacists

- MTaPS also collaborated with the University of Nairobi to develop pre-service curriculum and training for undergraduate and postgraduate students in health sciences. MTaPS and the university then launched implementation of the training using the developed materials.

Case study: AMS in Uganda

Monitoring hospital antibiotic use in Uganda

MTaPS collaborated with MOH to monitor antibiotic use in 13 hospitals by using the WHO standardized PPS methodology:

- Understand the prevalence of antibiotics in facilities and evaluate compliance with the country's clinical guidelines

- Between December 2020 and April 2021, examined 1,387 prescriptions among 1,077 patients

- Findings:

  - 74% of patients were prescribed at least one antibiotic

  - Low compliance with national clinical guidelines (30%)

  - High use of antibiotics from WHO's watch category (44%, although WHO aims for at least 60% of countries' antibiotic consumption to come from medicines in access category)

- Monitoring antibiotic use is essential for effective AMS; results point to areas for improving effectiveness of facilities' AMS programs and provide ongoing action points to be embedded in future facility-level AMS plans

How can you apply these approaches and tools? (1)

- **MTaPS Global Health Security Agenda Mini-Guides***: Provide concise stepwise guidance and checklists for implementing activities in countries to contain AMR. In addition to providing practical guidance on implementing facility-level AMS programs, the miniguides also cover IPC programs and plans, multisectoral coordination, and the implementation of WHO's AWaRE antibiotic classification.

- **Antimicrobial Stewardship Programmes in Health-Care Facilities in Low- and Middle-Income Countries: A WHO Practical Toolkit** (WHO, 2019): Practical guidance on AMS, including on the planning, implementation, and assessment of AMS programs at the facility level; the competencies for health care workers involved in facility-level AMS programs; and education and training to strengthen AMS-related competencies.

*Miniguides available: https://www.mtapsprogram.org/our-resources/global-health-security-agenda-mini-guides/

How can you apply these approaches and tools? (2)

- **[Joint External Evaluation Tool: International Health Regulations (2005) – Third Edition](WHO, 2022)**: The JEE allows countries to assess their capacity to prepare for and respond to public health threats. The tool includes specific indicators on AMR with clearly defined capacity levels.

- **Uganda Guidelines for Infection Prevention and Appropriate Antimicrobial Use in the Animal Sector (2020):** Uganda's Ministry of Agriculture, Animal Industry and Fisheries, in collaboration with MTaPS, developed and published practical guidelines on IPC and antimicrobial use for cattle farming, fish farming, and goat and sheep farming.

Additional resources: Readings

- **Uganda's Current Policies and Regulations on Antimicrobial Stewardship for Human Health, Animal Health, and Agriculture** (October 2021)

- **Integrating Antimicrobial Stewardship into Continuing Professional Development in Kenya** (October 2021)

- **Kenya Innovates on Continuing Professional Development of Health Workers in Infection Prevention** (April 2021)

- **Strengthening Drug and Therapeutics Committee Utilization in Health Facilities in Burkina Faso** (December 2022)

- **DRC Completes its First National Survey on Antimicrobial Consumption** (June 2021)

- **MTaPS Sets Up Centers of Excellence for AMS and Infection Prevention and Control in Uganda** (February 2022)

- **A Call for Policies and Regulations to Strengthen Antimicrobial Stewardship** (November 2021)

- **Côte d'Ivoire Launches First-ever AMS Multisectoral Plan to Combat AMR** (December 2020)

Additional resources: e-Learning and videos

- **Pharmaceutical Systems Strengthening 101** (available in <u>English</u> and in <u>French</u>): This course introduces learners to the basic principles of PSS, including how addressing pharmaceutical system problems advances universal health coverage; combats AMR, HIV and AIDS, malaria, tuberculosis, and other public health threats; and promotes maternal and child health.

- **<u>Antimicrobial Resistance (Part 1)</u>**: This course addresses the basic principles of AMR, including its impact on individuals and society.

- **<u>Antimicrobial Resistance (Part 2)</u>:** This course presents the contributing factors to development and spread of AMR, including interventions to address these factors.

- **<u>Mapping Educational Opportunities and Resources for Health-Care Workers to Learn About Antimicrobial Resistance and Stewardship</u> (WHO, 2017):** This resource identified a range of educational resources available on AMR that targets both healthcare workers and students. Appendix 2 of the report provides a list of these resources, with associated links.

- **<u>Mapping educational opportunities for healthcare workers on antimicrobial resistance and stewardship around the world</u>** (Rogers et al., 2018): This article provides a table (with associated links) of various educational resources available on AMR and AMS.

Who to contact

Mohan Joshi, Senior *Principal Technical Advisor*

mjoshi@mtapsprogram.org

Fozo Alombah, *Principal Technical Advisor*

falombah@mtapsprogram.org