Module 6: Potential Pitfalls in Antimicrobial Stewardship & Mitigation

Module Objectives

By the end of this module, you should be able to:

1. Recognize the main categories of pitfalls in antimicrobial stewardship
2. Understand the critical role of key resources in antimicrobial stewardship
3. Learn how to strengthen data collection and management to improve planning and decision-making for antimicrobial use and resistance monitoring
4. Understand the role of effective regulations in controlling antimicrobials production, marketing, use, and disposal
5. Develop strategies for improving coordination at facility, regional, and national levels to drive effective antimicrobial stewardship interventions and ensure accountability
6. Outline practical mitigation strategies for addressing common pitfalls

Categories of Pitfalls in Antimicrobial Stewardship

The categories of pitfalls in antimicrobial stewardship include;

1. Inadequate resources
2. Inadequate data
3. Weak regulation
4. Poor coordination

1. Inadequate Resources

- Successful antimicrobial stewardship requires a variety of resources which include
  - Skilled personnel
  - Adequate laboratory infrastructure, especially for microbiology (right equipment, reagents)
  - Data collection and management tools
  - References e.g. standardised treatment protocols
  - Finances
  - Standardized and updated guidelines (e.g. STGs, formularies)

Inadequate resources can result in failure to achieve goals and objectives

Mitigations for Inadequate Resources

- Personnel
  - Undertake training, capacity building, and mentorship of healthcare workers in AMS
  - Establish twinning programmes by pairing a facility that is running a successful AMS program with one that does not have a successful AMS program
- Procure and deploy modern diagnostic laboratory equipments
  - Develop and implement standard SOPs for lab procedures
- Develop and implement standard treatment protocols
- Facility-specific treatment guidelines based on;
  - National guidelines,
  - Local antimicrobial sensitivity testing data

Mitigations for Inadequate Resources…

- Carry out resource mapping and quantify needs
- Develop a costed Work Plan
- Prioritize and mobilize resources,
- Identify and engage Partners in the field of AMR / AMS
- Lobby national and county governments to allocate sufficient resources for AMS
- Use data to develop an antibiogram and economic case for AMS to policy makers
- Leverage on other existing systems and programs

2. Inadequate Data

- Quantitative and qualitative data on antimicrobial use and consumption is required for;
  - Identifying and quantifying gaps
  - Prioritizing interventions
  - Developing facility baseline data on AMU and AMC
  - Conducting operational research
  - Informing revision of guidelines and dissemination
  - Developing effective M&E systems
  - Strengthen clinical information management systems at all levels of AMC
- Weak documentation and reporting at facility levels
- Suboptimal use of clinical information management systems
- Adequate data limits evidence generation, hindering effective planning and decision-making and in healthcare, research, and policy development

Mitigations for Inadequate Data

- Conduct baseline surveys on AMU and AMC
- Conduct PPS to generate data on status of AMU and disseminate findings
- Develop action plans with assigned responsibilities and timelines
- Conduct operational researches at national, subnational, and facility levels, and disseminate findings
- Disseminate new and revised guidelines

Mitigations for Inadequate Data…

- Develop M&E systems at the facility level and review indicators continuously
- Monitor and evaluate effectiveness of AMS programs/systems, and tools (e.g., tracking clinical outcomes to measure impact of interventions to improve antibiotic use)
- Monitor resistance at the patient level (e.g., how many develop resistant superinfections, those under influence of steward interventions) and aim for continuous improvement

Mitigations for Inadequate Data…

- Develop standardized AMS data collection and reporting tools
- Conduct periodic data quality audits (DQA)
- Strengthen quality of clinical care audits and support, and implement recommendations
- Strengthen standardized documentation protocols and implement routine data quality audits at the facility level to improve reporting accuracy, ensure reliable data for evidence-based AMS decision-making.

Mitigations for Inadequate Data…

- Establish and use electronic pharmaceutical/health records management systems
- Embed IT tools and protocols at the point of care (e.g. immediate access to facility specific guidelines at point of prescribing)
- Implement clinical decision support systems for antibiotic use, creating prompts for action to review antibiotic use
- Build capacity on the use of clinical information Systems

3. Weak Regulations

Effective regulation and enforcement should ensure:

a) Responsible prescribing, dispensing and use of antimicrobials
b) Production and importation of high-quality antimicrobials
c) Prevent environmental emission of antimicrobials

As an important component of the implementation framework, regulation directs the responsible production, marketing, use and disposal of antimicrobial agents.

Mitigations for Weak Regulation

- Finalise the scheduling and rescheduling of antimicrobials, as per the AWaRe categorisation
- Train and deploy AMU auditors and create partnerships with county and sub-county pharmacists in the area of routine audits of AMU and AMC
- Enforcement of restrictions on Over-the-Counter (OTC) issuance and dispensing of antimicrobial agents
- Comply with existing regulations on dispensing of antimicrobials

4. Poor Coordination Mechanisms

A coordinated, multi-level approach to antimicrobial stewardship that aligns with national guidelines, integrates clinical, pharmacy, and laboratory teams, engages top-level leadership, and promotes awareness through structured feedback and public campaigns.

- Coordinated audit of critical AMS indicators would provide accountability and motivation to initiate and sustain necessary interventions
- Proper coordination at facility, regional and national level provides feedback mechanisms to health care workers on AMS gains and updates
- Responsibility should be defined and facilitation provided to key drivers i.e. medical and/or pharmacy personnel

Mitigation for Poor Coordination Mechanisms

- Establish AMS programs as per national guidelines
- Strengthen coordination between clinical, pharmacy and laboratory teams to drive AMS interventions
- Improve coordination at facility, regional and national levels with feedback mechanisms to health care workers on AMS gains and updates
- Ensure buy-in by top management level for easier coordination and improved teamwork
- Implement coordinated AMR public awareness campaigns

Key Points

1. Successful antimicrobial stewardship requires skilled personnel, laboratory infrastructure, and standardized protocols
2. Robust data on antimicrobial use (AMU) and antimicrobial consumption (AMC) is critical for identifying gaps and prioritizing interventions
3. Effective regulation is crucial for responsible production, prescription, and disposal of antimicrobials
4. Collaboration among clinical, pharmacy, and laboratory teams is critical for driving antimicrobial stewardship
5. Addressing pitfalls requires a multi-faceted approach
6. Antimicrobial stewardship programs must evolve based on data-driven insights, regulatory updates, and stakeholder feedback to effectively combat antimicrobial resistance.

The End

You have come to the end of this module. Kindly attempt module 6 quiz before proceeding to module 7