

Module 1: Introduction to Antimicrobial Stewardship



Learning Objectives

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

1. Discuss the importance of Antimicrobial Stewardship (AMS)
2. Highlight the patterns of antimicrobial use in Kenya
3. State the principles and goals of AMS
4. Outline core components and elements of AMS programs
5. Demonstrate awareness of the global, national guidelines and action plans for combating AMR



Overview of Antimicrobial Stewardship



REPUBLIC OF KENYA

Definition of Terms

Antimicrobial resistance (AMR) - Ability of a microbe to survive/or multiply despite the administration of a drug that would normally kill them or inhibit their growth (at doses equal or higher than those usually recommended)

Antimicrobial stewardship (AMS) – a systematic approach to optimizing antimicrobial therapy so as to:

- improve patient outcomes while limiting the emergence of AMR
- minimize the adverse effects to patients and cost of treatment

Its entails the provision of “the **right** antimicrobial, for the right indication/diagnosis, the right patient, at the right time, with the right dose and route, causing the least harm to the individual patient and to future patients”



Definition of Terms...

Diagnostic stewardship – Is the coordinated guidance and interventions to improve appropriate use of microbiological diagnostics to guide therapeutic decisions

Core Components of AMS- These are the broad, foundational areas needed for a successful antimicrobial stewardship program

Core Elements of AMS- these are the specific practices, tools, or tasks that operationalize each component (e.g. specific policies, reporting metrics, or educational sessions).



Why AMS is Important in AMR?

- Antimicrobials are the bedrock of modern healthcare
- Inappropriate use of antimicrobials is one of the major drivers of the emergence AMR
- AMR is a global public health threat, with an estimated 1.91 million deaths projected to be directly attributable to antimicrobial resistance, and up to 8.22 million deaths associated with AMR globally by 2050. (*The Lancet*, 2024)



Antimicrobial Use Patterns in Kenya

- Antimicrobial use in Kenya reflects both global trends and local challenges, with high rates of empirical prescribing, over-the-counter use, limited diagnostic utilization, and rising AMR rates.
- Cross-sectional studies and point prevalence surveys (PPS) conducted in hospitals across the country show:
 - High prevalence of antibiotic use (45–69%).
 - Irrational antibiotic prescription across wards, especially with regard to third-generation cephalosporins and extended-spectrum penicillins.
 - Limited or no use of culture and sensitivity tests to guide therapy.
 - Paediatric and surgical wards have been flagged as areas of AMS focus.



Principles and Goals of Antimicrobial Stewardship

The principles of AMS emphasize the responsible and judicious use of antimicrobials to combat AMR and improve patient outcomes through:

- Ensuring appropriate prescribing of antimicrobials
- Utilization of microbiology services
- Promote consistent antimicrobial access and rational use
- Minimize adverse effects
- Promote sustainable behaviour change
- Reducing health care costs without adversely impacting the quality of care

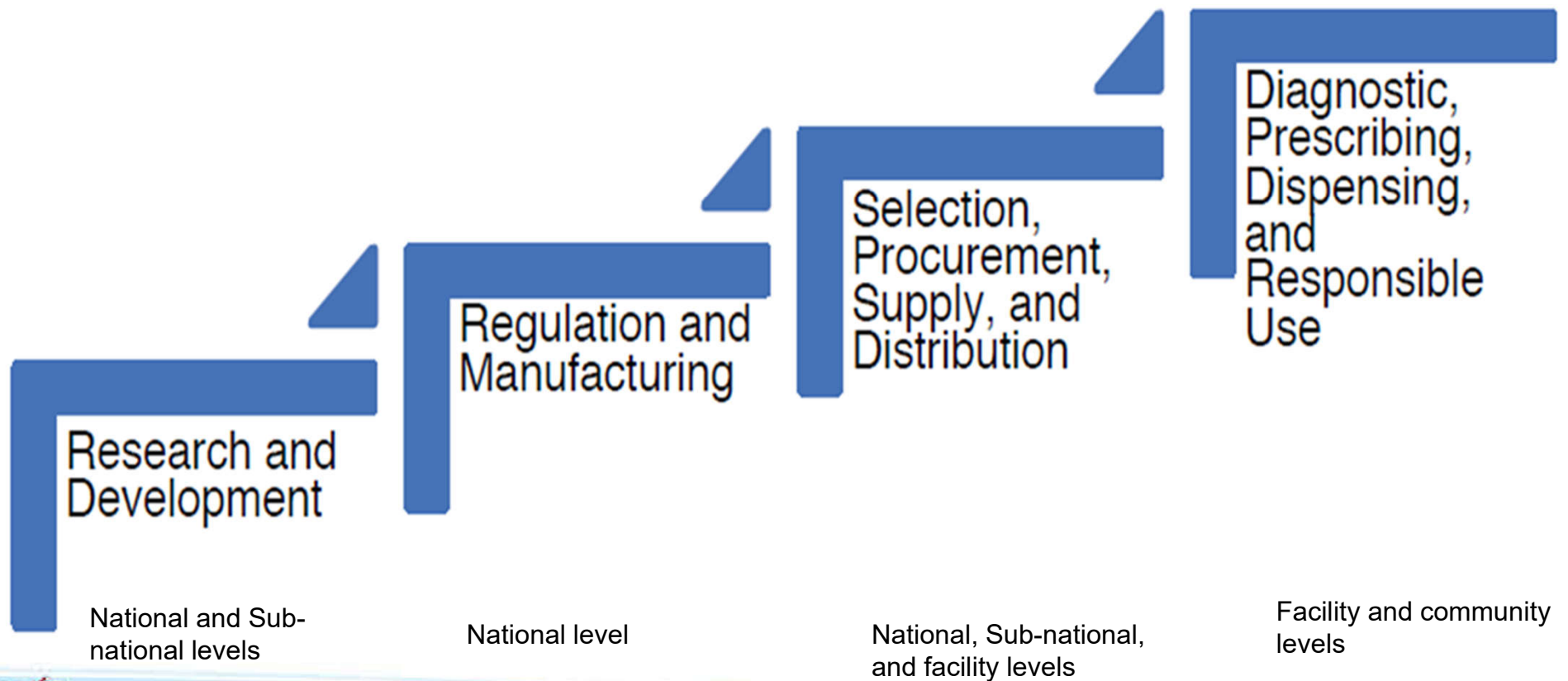


Introduction to Core Elements and Components of AMS

Core components (broad and foundational structures) and core elements (specific practices, tools or tasks) to support the development, implementation, and sustainability of AMS programs at national and facility levels.



Core Components of AMS



Core Elements of AMS

1

Leadership
Commitment &
governance
structure

2

Accountability

3

Drug/**Pharmacy**
Expertise

4

Actions/
interventions

5

Reporting &
feedback

6

Monitoring &
Evaluation

7

Education &
training

8

Communication

9

Quality
improvement



“All antibiotics are antimicrobials, but not all antimicrobials are antibiotics” True or False?



Frameworks for AMS and AMR

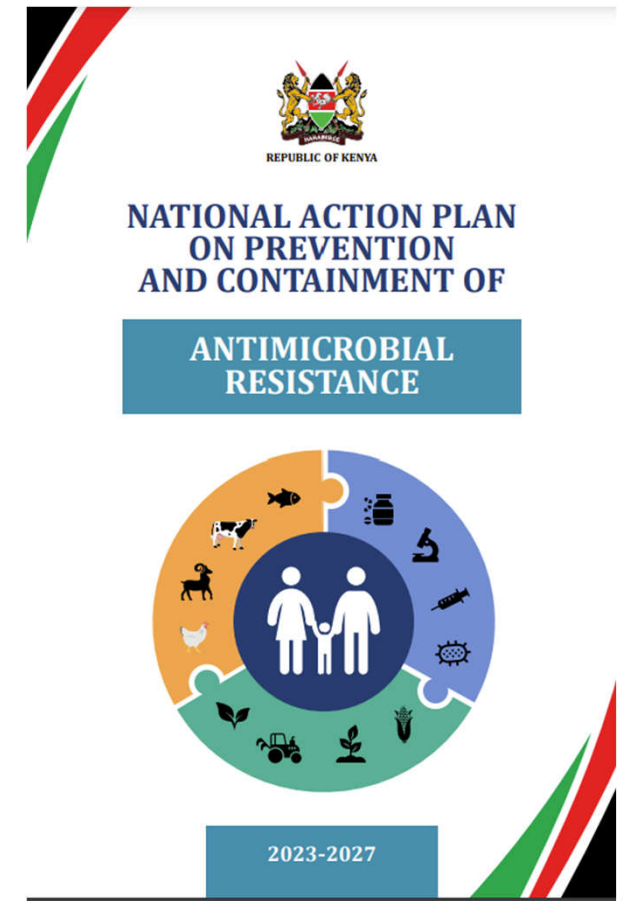


Global and National Action Plan on AMR

- Cognizant of the risk to global development posed by AMR and the need for affirmative action, the World Health Assembly in 2014 made a resolution requesting for the development of a global action plan against AMR.
- The Global Action Plan (GAP) was adopted by the WHA in 2015.
- Consequently, Kenya being a member state, joined the global health fraternity in combating AMR by developing the **National Policy and Action Plan (NAP) for Antimicrobial Resistance** in 2017 and revised the same in 2023, in alignment with the GAP.



GAP, National Policy and NAP for AMR



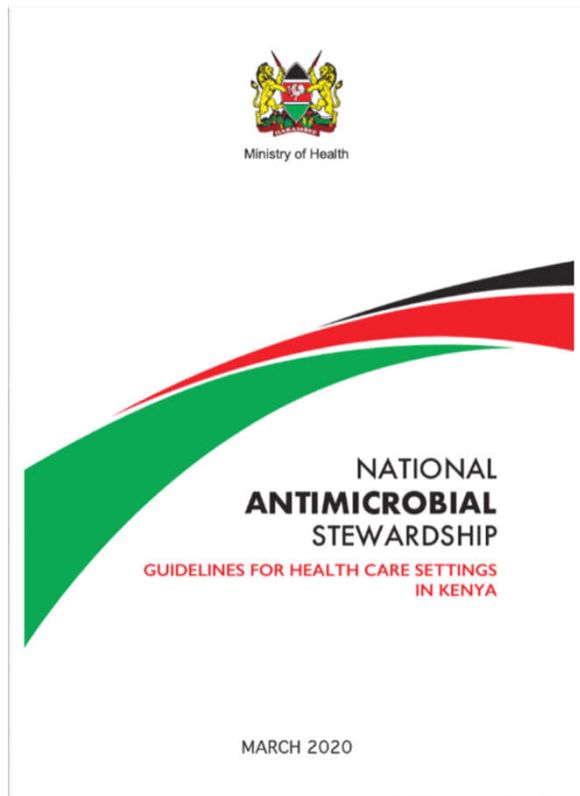
NAP Strategic Objectives for Antimicrobial Resistance

Table 1. Six Strategic Areas and Objectives for Countermeasures on AMR

Strategic Areas	Strategic Objective
Governance and Coordination	To establish and sustain governance and coordination structures for tackling AMR in a One Health approach
Public Awareness and Education	To improve public awareness and understanding, and promote education and training of professionals
Surveillance and Monitoring	To continuously monitor antimicrobial resistance, use and disposal of antimicrobials, and appropriately understand the trends and spread of antimicrobial resistance
Infection Prevention and Control	To prevent the spread of antimicrobial-resistant organisms by implementing appropriate infection prevention and control measures
Appropriate Use of Antimicrobials	To promote appropriate use of antimicrobials in the fields of healthcare, livestock production, agriculture, and aquaculture
Research and Development	To promote research on antimicrobial resistance and foster research and development to secure the means to prevent, diagnose and treat the antimicrobial-resistant infections



The National AMS Guidelines (2020)



The National AMS guidelines:

- Provides framework approach and resources for successful development and implementation of AMS.
- Outlines the establishment and operationalization of AMS programs for healthcare settings in Kenya
- Provides a comprehensive range of interventions that can be implemented by AMS programmes in different health care settings.



Key Points

1. AMR is a global and national challenge requiring targeted AMS strategies.
2. AMS is critical for combating AMR by optimizing antimicrobial use.
3. Core components and elements form the foundation of successful AMS programs.
4. AMS programs demonstrate success in reducing resistance and improving care in Kenya and globally.
5. National and global action plans, and AMS guidelines provide guidance for AMR containment efforts and AMS actions.



The End



***You have come to the end of this module. Kindly attempt module
1 quiz before proceeding to module 2***