

Module 3: Core Elements of Antimicrobial Stewardship (AMS) Programs in Health Facilities



Objectives

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

1. Understand the Core Elements of AMS necessary for effective AMS program implementation.
2. Recognize the importance of leadership, governance, accountability and drug expertise
3. Highlight targeted AMS interventions, such as optimizing prescribing practices, enhancing diagnostics, and improving supply chain management
4. Use monitoring and evaluation tools to assess the impact of AMS programs on antimicrobial use and resistance patterns
5. Understand the importance of feedback, reporting, and communication strategies to promote the rational use of antimicrobials among healthcare providers and stakeholders.



Overview of Antimicrobial Stewardship Core Elements

- The Core Elements framework offers a guide for hospitals of all sizes to implement AMS initiatives.
- The primary goal of implementing AMS interventions in a healthcare facility is to improve antibiotic prescribing practices hence promoting judicious use of antibiotics.
- This framework assists healthcare facilities in establishing the necessary structures for sustaining AMS programs within their organization.



Core Elements of Antimicrobial Stewardship



1. Leadership Commitment and Governance Structure

- Leadership support and commitment is critical to the success of AMS programs.
- A robust governance structure is essential for successful AMS program implementation at the national, county, and facility levels, requiring distinct roles and functions.
- The governance structure begins from the national to the facility level.



1. Leadership Commitment and Governance Structure: National and County Level

Figure 1. Structure for Coordination Mechanism

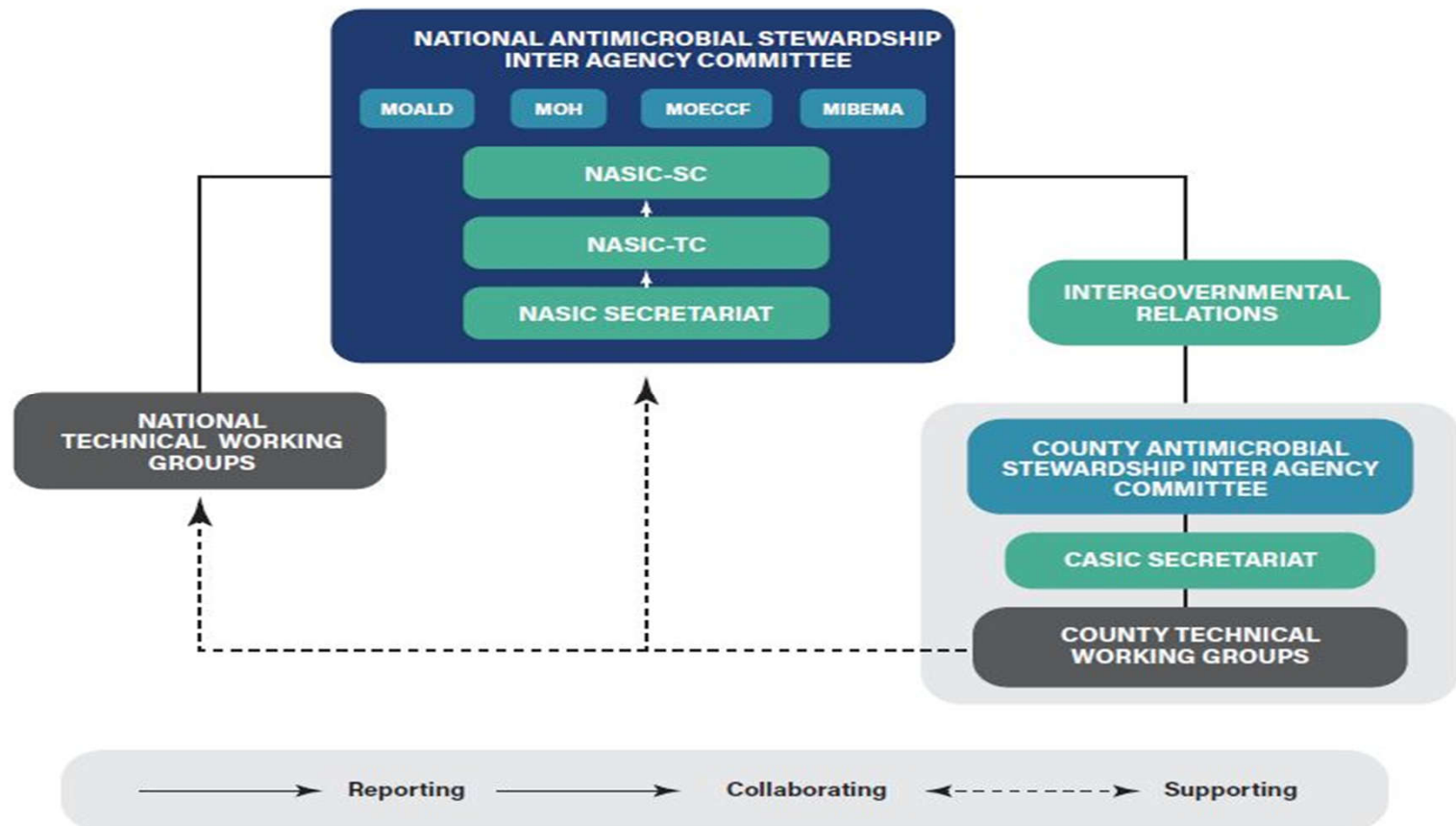
Key:

MOALD - Ministry of Agriculture and Livestock Development

MOH - Ministry of Health

MOECCF - Ministry of Environment, Climate Change, and Forestry

MIMBEMA - Ministry of Mining, Blue Economy and Maritime Affairs



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1. Leadership Commitment and Governance Structure - National Level

At the national level, the national antimicrobial stewardship committee (NASIC) is responsible for:

- 1. Coordination of AMR efforts:** Link national and county-level activities for a unified approach.
- 2. Driving of policy implementation:** Develop and oversee the execution of AMR and AMS strategies and policies at national and county levels.
- 3. Fostering collaboration:** Engage with stakeholders to promote knowledge sharing and collaboration under the One Health approach.
- 4. Monitoring and evaluating progress:** Track the effectiveness of the National Action Plan on AMR.
- 5. Resource mobilization:** Mobilize resources to implement AMS activities at National and County level.



1. Leadership Commitment and Governance Structure - County Level

At the County level, County Antimicrobial Stewardship Committee (CASIC) is responsible for:

1. **Policy adherence and Coordination:** Budgets and policy proposals on the implementation of the national plan. Collaborate and coordinate with county and national government entities, as well as non-state actors.
2. **Stakeholder Collaboration:** Foster partnerships with government agencies, NGOs, and other relevant parties.
3. **Resource Mobilization:** Mobilize human and financial resources to support the plan through regular budget allocations. Mainstream activities within core programmatic areas.
4. **Enforcement and Compliance:** Enforce guidelines, rules, and regulations related to the national action plan.
5. **Data Management:** Collect and analyze AMR and AMS data to inform decision-making.



1. Leadership Commitment and Governance Structure - County Level...

- 6. Reporting and Communication:** Provide regular updates on AMR and AMS activities to the NASIC Secretariat, health facilities and other stakeholders.
- 7. Monitoring and Evaluation:** Monitor and evaluate the implementation of the national action plan at the county level for the prevention and containment of AMR. Submit regular status reports to the NASIC Secretariat.

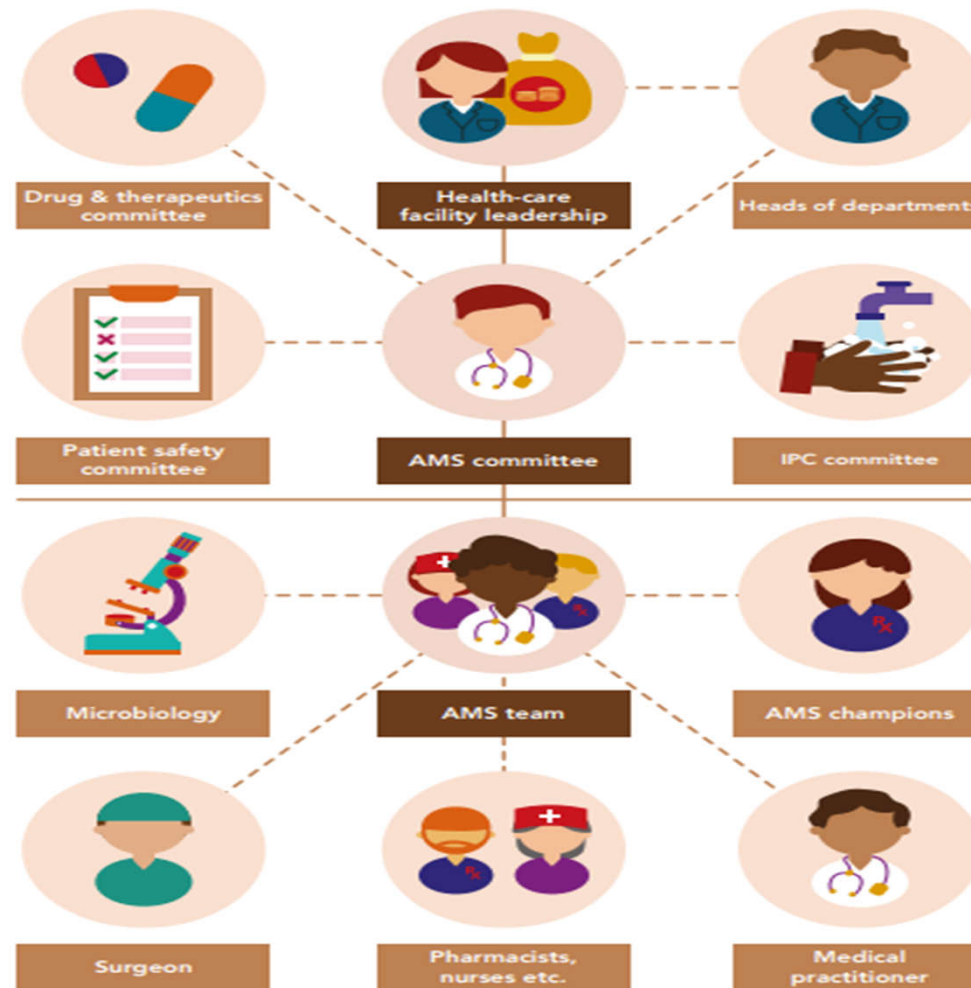


1. Leadership Commitment and Governance Structure: Facility level

- Effective AMS program implementation requires strong **collaboration** among hospital leadership, the AMS committee, clinical services, laboratories, medical practitioners, pharmacists, the Medicines and Therapeutics Committee, and the Infection Prevention and Control Committee.
- The governance structure may vary in size and complexity depending on the facility.



1. Leadership Commitment and Governance Structure: Facility level...



1. Leadership Commitment and Governance Structure - Facility Level...

The leadership commitment should be demonstrated by:

1. Official appointments of AMS committee with clear terms of reference (ToRs) and mandates.
2. Issuing of statements of support to improve and monitor antimicrobial use.
3. Including stewardship-related duties in job descriptions and annual performance reviews of the AMS committee.
4. Integration of AMS across all groups, departments and programs
5. Ensuring staff from relevant departments are given **sufficient time** to contribute to stewardship activities.
6. Supporting training and education.
7. Providing **Financial** support to the AMS programs for implementation of AMS activities.



2. Accountability

- Successful programmes have shown that accountability is critical for a successful stewardship programme.
- The AMS program must have a designated leader (preferably an infectious disease physician) or co-leaders (preferably a pharmacist) who are accountable for program management and outcomes.
- The leaders should have a clear delineation of responsibilities and expectations.
- Where a lower-level facilities lacks a medical officer or pharmacist, an offsite physician or pharmacist should be available for consultation.



3. Drug/Pharmacy Expertise

- **Pharmacist Leadership:** Identify a qualified pharmacist to lead AMS efforts, ideally with infectious disease training.
- **Specialized Expertise:** If no infectious disease-trained pharmacist is available, a clinical pharmacist with specific training or experience in AMS can be effective.
- **Multidisciplinary Team:** Leverage expertise from other healthcare professionals, such as local champions, microbiology/laboratory, and infection prevention and control specialists.



4. AMS Actions/Interventions

- Interventions need to be selected based on the needs of a country, county, or health care facility as well as the available resources and expertise.
- Further, AMS programs should implement a few interventions at a time.
- Policies and guidelines that support optimal antimicrobial prescribing should be developed and implemented at the national, county, and health facility levels.



4. AMS Actions/Interventions

Examples of some of the basic AMS interventions/ Actions that ensure the success of the programme are:

1. Provide education for prescribers and healthcare staff on the correct use of antibiotics.
2. Create and regularly update a standardized medical record and chart to centralize all patient medication information.
3. Assess whether patients receiving antibiotic treatment have documented indications.
4. Review antimicrobial prescriptions - particularly those on broad-spectrum antibiotics (Watch & Reserve).



4. AMS Actions/Interventions...

5. Examine surgical antibiotic prophylaxis, particularly when prescribed for more than 24 hours, and assess if a single dose would be sufficient.
6. Monitor adherence to national or institutional treatment guidelines to ensure appropriate antimicrobial use
7. Focus on ensuring strong leadership and identifying expertise in infection management.
8. Enhance the supply chain and management of medicines, particularly essential antimicrobials, by establishing a medicines and therapeutics committee
9. Establish/strengthen microbiology laboratory services
10. Strive to initiate regular surveillance activities, including monitoring AMR, antimicrobial consumption (AMC), antimicrobial use (AMU), and healthcare-associated infections.



5. Reporting and Feedback

- AMS programs should regularly update personnel responsible for AMS - including prescribers, pharmacists, laboratory personnel, nurses, leadership and other facility, county and national stakeholders on process and outcome measures that address both national and local issues, including AMR.
- Disseminate findings on AMU, AMC, AMR, AMS program outcomes, and summaries of key issues, should be shared regularly with hospital, county, and national leadership, boards and healthcare professionals.
- Providing specific reports with peer comparisons have been effective in improving antimicrobial use in outpatient settings



6. Monitoring and Evaluation

- M&E as a core element of AMS is the process of regularly tracking and assessing:
 - Antimicrobial prescribing practices,
 - AMS program implementation,
 - Impact of prescribing and interventions on resistance patterns
- Health Information Technology systems are recommended for collecting, analysing and reporting AMR, AMC, and AMU as part of local and regional efforts to reduce AMR infections through AMS.



7. Education and Training

- Continued AMS education should be provided to healthcare workers and other staff.
- Education and training should focus on AMR and improving antimicrobial prescribing, use, and dispensing practices.
- Education is most effective when paired with interventions and measurement of outcomes.
- Education should be provided to patients, family members, and the community.
- Can be done through educational presentations, messaging through posters, flyers, newsletters or electronic communication.



8. Communication

- Effective communication is critical for successful AMS implementation and contribute to promoting the rational use of antimicrobials
- Effective communication should be: Complete, Clear, Brief & Timely
- The following design elements are recommended in a communication campaign to ensure effectiveness and impact;
 - Utilization of different communication strategies including media channels, focus groups, barazas etc.
 - Targeted messaging
 - Timing of campaign activities
 - Involvement of key opinion leaders
 - Phase wise evaluation



9. Quality Improvement

- Quality improvement can be incorporated into a stewardship programme to ensure that interventions are continuously improved, and efforts are sustained.
- Selection of an intervention or change should be based on drivers that impact the goals of AMS.
- Primary drivers of timely and appropriate use of antimicrobial include:
 - Timely and appropriate initiation of antimicrobials
 - Appropriate administration and de-escalation
 - Data monitoring and stewardship infrastructure
 - Availability of expertise at the point of care.



9. Quality Improvement...

Consider the following questions when implementing the quality improvement model for AMS intervention:

What are you trying to achieve ?

Set a goal for change in antibiotic use that is SMART (i.e. specific, measurable, achievable, relevant and time-bound).

How will you know that the change is an improvement?

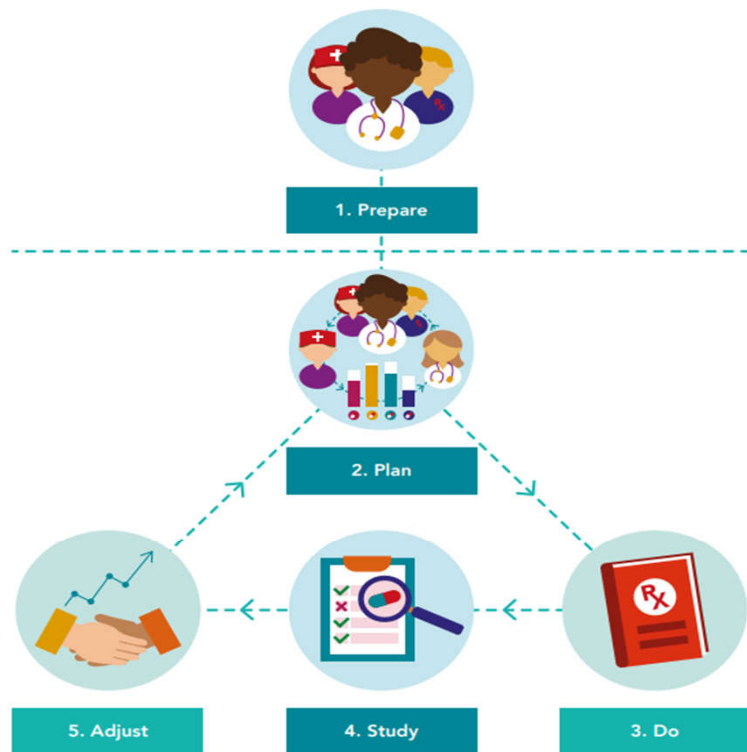
Determine what quantitative measures to use to show improvement (measurements).

What changes can you make that will result in improvement?

Not all changes are an improvement.
Identify the behaviour changes that will result in improvement (AMS interventions).



9. Quality Improvement model: Prepare, Plan, Do, Study, Adjust



1
Prepare

- Map possible enablers (champions) and barriers in the unit.
- Obtain managers' and champions' commitment to change.
- Prepare to talk about AMR, the unit's antibiotic use and "what can be done" (AMS).

2
Plan

- Present the AMR problem, challenges in antibiotic use and discuss "what we can do".
- Set SMART goals for changing the unit's antibiotic use.
- Decide on AMS interventions, how to implement them and how to measure change.

3
Do

- Perform AMS interventions (e.g. education, ward rounds and audit) and measurements (AMS review form: see Annex IV).

4
Study

- Analyse the measures (process and outcome). What do they show?
- Evaluate AMS interventions and their implementation. To be continued or changed?
- Prepare to discuss the results, AMS interventions and implementation with the units.
- Review resource use and costs, and determine whether there have been savings.

5
Adjust

- Discuss the results and AMS interventions with the unit.
- Agree on any adjustments to the AMS interventions, implementation and measurements.
- Follow up with a continuous improvement cycle (Plan, Do, Study, Adjust).

AMS Assessment Checklist

In order to conduct a baseline assessment & continuous M&E of the core elements of AMS programs, a standard checklist is provided in the Kenya AMS guidelines is available for use.

The checklist is available through the link below (Annex 2):

[National Antimicrobial Stewardship Guidelines for Health Care Settings in Kenya - March 2020.pdf](#)



Key Points

- The Core Elements of AMS programs provide a practical framework for implementing and sustaining effective AMS initiatives
- Strong leadership and governance structures are essential for prioritizing AMS
- Successful AMS programs require clear roles, accountability, and dedicated leaders
- Implementing targeted interventions is critical for reducing AMR
- Ongoing education for healthcare providers and patients enhances awareness and promotes responsible use of antimicrobials
- Regular tracking of antimicrobial use and resistance patterns helps measure the effectiveness of AMS programs
- Effective AMS programs depends on active collaboration among multidisciplinary teams
- Clear, consistent communication campaigns and reporting promote rational use of antimicrobials and encourage stakeholder engagement at all levels.



The End



***You have come to the end of this module. Kindly attempt module
3 quiz before proceeding to module 4***