

**PROPOSED ROADMAP FOR  
THE ADAPTATION AND  
IMPLEMENTATION OF WHO  
POLICY GUIDANCE ON  
INTEGRATED ANTIMICROBIAL  
STEWARDSHIP IN THE HUMAN  
HEALTH SECTOR**

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# Introduction

The World Health Organization (WHO) has issued global policy guidance to facilitate Member States' implementation of national AMS activities in an integrated and programmatic approach. Under this initiative, WHO recommends that countries establish comprehensive roadmaps to guide the adaptation and implementation of the 5 pillars established in the "WHO Policy Guidance on Integrated Antimicrobial Stewardship Activities in Human Health Sector" in coordination and collaboration with global and regional partners (figure 1). These roadmaps should address the strengths, challenges, and technical cooperation requirements to ensure effective implementation of the Policy at regional, national and sub-national levels.

**Figure 1. Integrated Antimicrobial Stewardship activities.**

<p><b>PILLAR 1:</b> Establish and develop national coordination mechanisms for antimicrobial stewardship and develop guidelines</p>
<p>1. Establish and maintain a national coordinating mechanism for AMS that is functional at national, subnational and district levels.</p>
<p>2. Develop national treatment and stewardship guidelines, standards and implementation tools.</p>
<p><b>PILLAR 2:</b> Ensure access to and regulation of antimicrobials</p>
<p>3. Improve access to essential, quality-assured, safe, effective and affordable antimicrobials.</p>
<p>4. Regulate social triggers and remuneration policies that promote responsible antimicrobial prescription and dispensing behaviours.</p>
<p>5. Legislate and regulate responsible and appropriate use and disposal of antimicrobials.</p>

<b>PILLAR 3:</b> Improve awareness, education and training
6. Improve awareness and engagement to support behavioural change of antimicrobials use.
7. Strengthen health worker capacity through the provision of tailored education and training packages according to health worker roles and functions.
<b>PILLAR 4:</b> Strengthen water, sanitation and hygiene and infection prevention and control
8. Enhance WASH in health facilities and communities.
9. Implement IPC core components in health facilities.
<b>PILLAR 5:</b> Surveillance, monitoring and evaluation
10. Surveillance of antimicrobials use and consumption.
11. Surveillance of AMR.
12. Monitoring and evaluation of AMS activities.

The **objective** of a roadmap is to provide **national government-led guidance for the implementation of the WHO Policy Guidance on Integrated Antimicrobial Stewardship Activities in Human Health Sector**, based on the five established pillars, with the involvement of stakeholders from all sectors and disciplines around a common plan.

The **development of the roadmap** includes a review of the enabling environment, including policies in all relevant sectors, institutional arrangements and coordination mechanisms, financing, monitoring and evaluation systems, and capacity building.

The roadmap should build on existing strengths and set out strategies to address the gaps identified for the implementation of the five pillars through their specific activities, taking into account potential challenges, existing activities, partner capacities, and identifying the need for additional technical cooperation required where relevant.

Based on the Regional Consultations on the roll-out of the WHO Policy Guidance on Integrated Antimicrobial Stewardship Activities in Human Health carried out with the countries of the Region, the following considerations were identified as important for the development of a roadmap:

- **Leverage existing infrastructure.** In all steps, it is crucial to consider what human, material and financial resources exist and how they can be leveraged.
- **Conduct stakeholder mapping** and involve stakeholders from the outset in the design, implementation, and evaluation of the Plan to foster ownership of the WHO Policy Guidance at various levels.
- **Use a collaborative and multidisciplinary approach,** engaging groups, institutions, and agencies at regional, subregional, and national levels (e.g., Ministry of Health, NGOs, academic institutions, professional associations, etc.).
- **Adapt the Plan to the local context,** based on national priorities, available resources, and local evidence.
- **Identify gaps** to be filled and problems to be overcome, while formulating recommendations to address them. This can be achieved through the implementation of pilot projects.
- **Take into account lessons learned in the past,** in all these steps, to favor approaches and strategies that have worked and use resources effectively.
- **Ensure that all steps have reasonable timelines** for short-, medium- or long-term objectives, with clear deliverables and prioritization.
- **Planning should be cyclical,** with continuous assessment of progress and redirection of implementation as needed. Monitoring and evaluation will be the key to success.
- **Mobilize human, material, and financial resources,** taking into account the Plan's sustainability. Therefore, the proper identification of resource needs should not be overlooked in the planning phase.

# Components of the roadmap

To achieve effective implementation of the 5 pillars of the WHO Policy Guidance and its standards, the roadmap process should be inclusive of all stakeholders who may be reached by the required activities. The national roadmap process should be government-led and build on existing coordination mechanisms, processes, policies, and strategies. Thus, the roadmap may contemplate a series of structured steps that allow for an orderly progress in the adaptation and implementation of the WHO Policy Guidance.

## STEP 1

**Establish a working group** coordinated by a government focal point to lead the process and with the participation of representatives of all the sectors involved

## STEP 2

**Assessment of the national and institutional context** using the tools proposed by WHO to determine the level of development of the programs

## STEP 3

**Define the scope of the program** by identifying priorities, setting objectives, establishing investment strategies and opportunities, and selecting indicators to monitor the level of compliance with the policy

## STEP 4

**Action planning** to leverage existing activities and respond to gaps in different environments and phases

## STEP 5

**Execution** while identifying the barriers that hinder the implementation of the strategies in order to neutralize them

## STEP 6

**Follow-up, Monitoring and Evaluation** of progress towards achieving the set objectives

## STEP 7

**Periodic program review** to identify opportunities for improvement and define scale-up and scope expansion



## Establish a working group

To initiate the national roadmap process, a coordination mechanism should be created, taking advantage of existing multisectorial working groups. During this stage of the roadmap development process, it is important to assign a government focal point to lead and coordinate the formation of a Steering Committee that includes representatives from all levels of government (e.g. Ministries of Health, Environment, Agriculture, Education, Science and Technology, Food and Drug Regulatory Agencies), Scientific Societies, Universities, Civil Society, Health Systems (e.g. Social Security and Private) and other partners (e.g. International Organizations and/or referents).

In this sense, it is important to map the interested institutions or organizations at the different levels (regional, national and sub-national) and define their interrelationships in order to form such a Commission, within the framework of “One Health”.

It is also recommended that this Commission be formally established by the governmental level, with the designation of its members and a legislative or administrative basis that establishes its operation. It is also suggested that the members of this Commission be appointed for defined terms (periods of time) in order to encourage the participation of new representatives.



### Objectives

- Creation of a coordination mechanism led by a governmental focal point through the creation of a specific intersectoral commission.
- Identification of additional focal points among partners from other levels of government, scientific societies, universities, civil society, health systems.
- Establishment of alliances with partners working in non-traditional disciplines (e.g., behavior sciences) to facilitate opportunities for innovative partnerships.



### Main Results

- ✓ Government document specifying the composition of this commission or working group, the coordination mechanism established and the terms of reference of the Commission and responsibility of each of its members.
- ✓ Map of stakeholder institutions/organizations at different levels (regional, national and sub-national) and their interrelationships, within the One Health framework.
- ✓ Establishment of new partnerships and strengthening of existing collaborations

## Assessment of the national and institutional context

To determine the level of development of each of the pillars and the 12 activities that make up the WHO Policy Guidance (Annex I), it is suggested that the *National Assessment Tool* developed by WHO be used. This will allow to first identify strengths and weaknesses and to estimate the degree of implementation of these strategies at the national level.

At a second stage, under this item, the working group should plan to conduct an assessment of the implementation of Antimicrobial Stewardship Programs at the facility level using the *Health-Care Facility Assessment Tool* developed by WHO (Annex II). For additional guidance, you may refer to the “*Draft WHO Implementation Handbook for National Action Plans on AMR. 2021. Geneva, Switzerland: World Health Organization*” (Annex B)

These tools allow to categorizing each of the activities according to their implementation status into:

- Not implemented
- Not implemented, but a priority
- Planned but not started
- Partially implemented
- Fully implemented

Additionally, it is recommended that countries complement these assessments with point prevalence surveys on antimicrobial prescribing in the hospital setting, studies of antimicrobial consumption and antimicrobial use at the outpatient and institutional levels, and surveillance of antimicrobial resistance as additional indicators.

These activities must have the human, material and economic resources and the necessary training to ensure their execution.

It is also suggested that the results of these evaluations be shared with all sectors involved in order to inform and raise awareness, while maintaining the confidentiality of the data at all times.

This information could be used as a baseline to evaluate over time the effectiveness of the strategies implemented within the framework of the WHO Policy Guidance.



### Objectives

- To understand the current status of the implementation of integrated activities for the optimization of antimicrobial use at the national and institutional levels.
- To identify, for each activity, the strengths and weaknesses to be addressed and the technical resources needed if required.



## Main Results

- ✓ Level of implementation of integrated activities for the optimization of antimicrobial use at the national and institutional levels (see Assessment tools).
- ✓ Results of point prevalence surveys on antimicrobial prescribing in the hospital setting, antimicrobial consumption studies and antimicrobial use in outpatient and institutional settings, and antimicrobial resistance surveillance indicators as additional indicators.
- ✓ Matrix of strengths, opportunities, weaknesses, and threats

## Define the scope of the program

To define the scope of the program, it is suggested that a matrix be used to prioritize the gaps identified (activities not implemented or partially implemented) through the National Assessment Tool in order to develop an action plan (Annex III). You may also refer to the *Draft WHO Implementation Handbook for National Action Plans on AMR. 2021. Geneva, Switzerland: World Health Organization: chapter 3. Activity Prioritization for implementation.*

In this regard, it is recommended that the following questions be kept in mind:

- Are there any criteria, elements or factors that are more important than others? Why?
- Are there any additional criteria to consider when prioritizing activities for follow-up?
- Has your country already established a list of priority policies?
- What other stakeholders should be consulted when deciding which activities should be prioritized for monitoring?

These priorities could be categorized as short, medium, or long term and framed within the “One Health” concept.



## Objective

- Prioritize actions based on a set of contextualized criteria aligned with the results of the National and Institutional Context Assessment



## Main Results

- ✓ List of priorities defined in the matrix

# Action Planning

Once the activities have been prioritized, an action plan should be developed, taking advantage of existing activities, past experiences and resolving the gaps identified during the assessment phase in the different environments (Annex IV). For additional guidance, you may also refer to the “*Draft WHO Implementation Handbook for National Action Plans on AMR. 2021*”: chapter 4. Costed NAP operational plan. Geneva, Switzerland: World Health Organization and the “Draft WHO costing and budgeting tool and user guide for national action plans on AMR. 2021. Geneva, Switzerland: World Health Organization”.

For each activity to be implemented, the following should be done:

- Define the activities to be implemented with specific objectives.
- Establish the actions (strategies) for the achievement of the objectives.
- Identify responsible parties and sectors involved for its implementation (Annex V).
- Identify the human, material and economic resources required to implement the strategies.
- Identify the need for technical cooperation required and the organizations convened (e.g., PAHO/WHO).
- Develop structure, process, and outcome indicators for monitoring objectives (e.g., SMART: Specific, Measurable, Achievable, Relevant and Timely).
- Identify the sources of data for the construction of the indicators.
- Engage all stakeholders, establish the communication channels, and the modality and frequency of interaction among them.
- Establish a timeline for the accomplishment of actions

When preparing the action plan, it is advisable to consider these questions:

- What options/conditions must be in place to implement the strategy?
- Who has the authority to authorize and/or implement the strategy?
- What bottlenecks need to be overcome to achieve strategy implementation?
- What are the capabilities and opportunities that should be exploited?
- What is the deadline for reaching a given point

The plan should allow for the possibility of making adjustments to unforeseen emergency situations (e.g., COVID-19).

It is also recommended that the Plan be adjusted to the defined scope, establishing short, medium, and long-range stages.

The Plan developed at the national level should have a governmental level approval that allows it to be maintained beyond changes of government (i.e., State Policy).

In the case of institutional Antimicrobial Stewardship Programs (ASP), they must have the support of the institution's Senior Management.



## Objective

- Develop an action plan based on defined priorities that clearly establishes the necessary human and material resources, the actions to be implemented, and the interrelationships with other stakeholders. This plan must be approved by the relevant national authorities.



## Main Results

- ✓ Action plan including human, material and economic resources and execution times for each proposed activity
- ✓ Budget detailing the necessary economic resources, their destination, and sources of financing

# Execution

After planning, the defined strategies must be implemented, identifying, during the process, the barriers that hinder the implementation of the strategies in order to neutralize them. Although the way in which the action plan is executed depends on each country, it is necessary to monitor its evolution in order to identify possible deviations from the plan.



## Objective

- Implement the action plan while identifying and mitigating deviations.



## Main Results

- ✓ Level of deviation or delay from the deadlines established in the action plan
- ✓ List of factors that may explain the identified deviations from the original plan
- ✓ Actions implemented to correct the identified deviations

## Follow-up, Monitoring and Evaluation

The main objective of the WHO Policy Guidance is to provide a set of pragmatic, evidence-based recommendations to drive global and integrated activities related to the optimization of antimicrobial use under the leadership of a central national coordination unit, national AMR steering or coordination committees or other equivalent national authorities. In this regard, the *National and Health-Care Facility Assessment Tools*, developed by WHO, allow for periodic (e.g., every six months) monitoring of the level of effective implementation of the activities defined for the 5 pillars and for the institutional ASP (Annexes I and II).

It is also recommended to build a computerized system for recording data and the development of a dashboard that will allow the follow-up, monitoring and evaluation of the execution of the National Plan, integrated with other indicators such as: antimicrobial resistance, use and consumption of these agents.

This type of tool (dashboard) can also be applied at the institutional level.

It is suggested that the information collected be analyzed, compared, and shared with the interested parties, preserving the confidentiality of the data.



### Objective

- Develop and implement a system for follow-up, monitoring and evaluation of the comprehensive activities recommended in the WHO Policy Guidance.



### Main Results

- ✓ Periodic reports on the level of implementation achieved of integrated activities for the optimization of antimicrobial use at the national and institutional levels over time (see Evaluation tools).

## Periodic program review

It is recommended that the Steering Committee conduct an annual review of the National Program to identify new opportunities for improvement, define the expansion of its scope based on the findings and establish new sources of funding.

Likewise, the institutions must carry out an annual review of their ASP.



### Objective

- Periodically review the action plan to identify new opportunities for improvement.



### Main Results

- ✓ Periodic reviews of program scope
- ✓ List of proposed improvements to broaden the scope of the program



## Annex I

National Assessment Tool				
Pillars		Standards		Indicators
1	Establish and develop national coordination mechanisms for antimicrobial stewardship and develop guidelines	1	Establish and maintain a national coordinating mechanism for antimicrobial stewardship (AMS) that is functional at national, subnational and district levels	10
		2	Develop national treatment and stewardship guidelines, standards and implementation tools	6
2	Ensure access to and regulation of antimicrobials	3	Improve access to essential, quality-assured, safe, effective and affordable antimicrobials	6
		4	Regulate social triggers and remuneration policies that promote responsible antimicrobial prescribing and dispensing behaviors	1
		5	Legislate and regulate responsible and appropriate use and disposal of antimicrobials	4
3	Improve awareness, education and training	6	Improve awareness and engagement to support behavioral change of antimicrobials use	5
		7	Strengthen health worker capacity through the provision of tailored education and training packages according to health worker roles and functions	3
4	Strengthen water, sanitation and hygiene and infection prevention and control	8	Enhance WASH in health facilities and communities	2
		9	Implement IPC core components in health facilities	2
5	Surveillance, monitoring and evaluation	10	Surveillance of antimicrobial use and consumption	2
		11	Surveillance of AMR	1
		12	Monitoring and evaluation of AMS activities	2
<b>Total</b>				<b>44</b>



## Annex II

Health-Care Facility Assessment Tool		
Domains	Standards	
Leadership Commitment	1	Is Antimicrobial Stewardship (AMS) identified as a priority by the health-care facility management/leadership?
	1.a	Are AMS activities included in health-care facility annual plans with key performance indicators?
	1.b	Has the health-care facility management allocated human and financial resources to initiate AMS activities?
	2	Is there a health-care facility action plan in place that prioritizes AMS activities and measures progress and accountability of these activities?
	2.a	Is there a mechanism to regularly monitor and measure the implementation of AMS activities?
	3	Is there dedicated financial support for the health-care facility AMS action plan?
	3.a	Has a budget (e.g. annual) for the implementation of the healthcare facility AMS action plan been developed?
Accountability and Responsibility	4	Is there a multidisciplinary AMS committee leadership with clear terms of reference?
	4.a	Does the AMS committee/other relevant committee meet on a regular basis (minimum monthly or quarterly)?
	5	Is there a dedicated AMS leader/champion identified for the health-care facility?
	5.a	Does the team leader or champion have dedicated staff time for AMS activity in their TOR/ job description?
	6	Is there an AMS team with clear terms of reference?
	6.a	Does the AMS team meet on a regular basis?
	7	Are other health-care professionals apart from AMS team involved in AMS activities?
	8	Is there a document that defines how AMS teams can collaborate with IPC teams at the health-care facilities?
	9	Does the AMS team/committee produce regular (descriptive) activity reports on the implementation of the AMS programme?
9.a	Is the AMS activity report disseminated to the facility management, other healthcare facility team members and appropriate national authority?	
AMS Actions	10	Is there a standard treatment guidelines at the health-care facility?
	10.a	Are the guidelines reviewed and updated periodically based on the availability of new evidence?
	11	Is there a regular review/audit of specified antibiotic therapy or clinical conditions at the healthcare facility?
	12	Is the advice/feedback from AMS teams easily accessible/available to prescribers?
	13	Does the AMS team conduct regular ward rounds and other AMS interventions in selected departments in the health-care facility?

Health-Care Facility Assessment Tool		
Domains	Standards	
AMS Actions	14	Does the health-care facility have a formulary/ list of approved antibiotics for use?
	14.a	Does the health-care facility formulary specify lists of restricted antibiotics that require approval by a designated team or person (pre-authorization)?
	15	Does the health-care facility have access to laboratory and imaging services (on-site or off-site) to support AMS interventions?
	16	Is there information technology services, tally cards or other inventory control tools available to support data gathering and AMS activities?
	17	Is there standardized prescription charts, medical records/patient folders and transfer notes to support treatment and AMS activities?
	17.a	Does the health-care facility have a written policy that requires prescribers to document the indication and antibiotics prescribed in a prescription chart/medical records?
	Education and Training	18
19		Does the health-care facility offer continued in-service training on AMS, IPC to staff?
20		Does the health-care facility offer training for AMS team and staff on antimicrobial stewardship/ infection prevention and control
Monitoring and Surveillance	21	Does the health-care facility undertake prescription audits, point prevalence surveys to assess the appropriateness of antibiotic prescribing?
	22	Does the health-care facility regularly monitor quantity and types of antibiotic use (purchased/prescribed/dispensed)?
	22.a	Does the health-care facility regularly monitor shortages/stockouts of essential antimicrobials
	22.b	Is there a mechanism to report substandard and falsified medicines and diagnostics at the health-care facility?
	23	Does the AMS team regularly monitor antibiotic susceptibility and resistance rates for a range of key indicator bacteria
	24	Does the AMS team monitor compliance with at least one specific AMS intervention (e.g. indication captured in medical records for patients) at the health-care facility?
Reporting Feedback	25	Does the health-care facility review, analyze and report on the quantity of antibiotics purchased/prescribed/dispensed to prescribers and health-care facility management?
	26	Does the health-care facility review, analyze and reports on antibiotic susceptibility rates and key findings shared with prescribers?
	27	Does the AMS team communicate findings from audits/reviews of the quality/ appropriateness of antibiotic use to prescribers along with specific action points?
	28	Does the health-care facility develop and aggregate antibiogram (annex VIII, page 71 of WHO AMS toolkit) and regularly update it?

## Annex III

This template can be used to analyze which activities should be prioritized for follow-up. Each criterion should be assigned a letter: “A” represents the most ideal for that criterion and “D” the least ideal. After grading each criterion, it is advisable to enter an overall priority grade and explain why you have assigned that overall grade.

Priority matrix						
Activity	Cost of implementing the activity <i>Funding already allocated?</i>	Probability of political progress <i>Political window; Government champion?</i>	Magnitude of health impact <i>Evidence base; Scale of the intervention?</i>	Cost of monitoring <i>Indicators already monitored; Could indicators be added to the existing monitoring and evaluation system?</i>	Are monitoring results likely to be used? <i>By civil society; By policy makers; By funders?</i>	General Grade <i>Why did you give this grade?</i>
Enter the name of the policy in this column	Low cost=A Medium cost=B Uncertain cost=C High cost=D	Very probable progress=A Probable progress=B Uncertain progress=C Unlikely progress=D	High impact=A Medium impact=B Uncertain impact=C Low impact=D	Low cost=A Medium cost=B Uncertain cost=C High cost=D	High probability=A Medium probability=B Uncertain=C Low probability=D	High priority=A Medium priority=B Low priority=C Very low priority=D
1.						
2.						
3.						
4.						

## Annex IV

This tool allows the development of a plan for each of the proposed interventions. The plan should clearly reflect the process of implementation and follow-up of the strategies to be applied.

Activity to be implemented <i>(specific objective)</i>	Actions <i>(strategies)</i>	Responsible Party(ies)	Resources required	Indicator(s) <i>(process / results)</i>	Data source: <i>Does it exist? Frequency of collection and reporting?</i>	Stakeholder(s) / Communication methods: <i>What form and frequency are most appropriate for key audiences?</i>	Timeline <i>(deadlines)</i>
1.		Intervention:				Interested Party(ies)	
		Follow-up:				Communication media	
2.		Intervention:				Interested Party(ies)	
		Follow-up:				Communication media	
3.		Intervention:				Interested Party(ies)	
		Follow-up:				Communication media	
4.		Intervention:				Interested Party(ies)	
		Follow-up:				Communication media	





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